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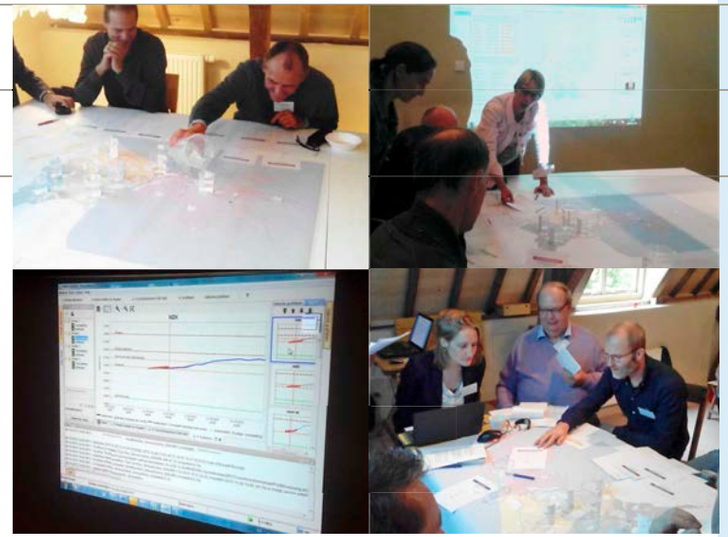
The smart water management table: a successful serious game



Smart water management is an operational concept for water management that focuses on the early anticipation of weather events to prevent flooding, and water shortages during drought spells. Smart water management is becoming an increasingly important issue for the Dutch national and regional water authorities. Smart water management depends crucially on cooperation between the regional and national water authorities, who need to share real-time data, link hydrological decision support models and establish formal agreements. Against the background of advances in ICT (processor speed, software, interconnectedness), smart water management is about employing these advantages to optimise operational water management and to limit water-related damage.

The concept of smart water management is alluring but implementation is challenging. To further implementation, Deltares developed a serious game, the smart water management table, that provides a picture of what smart water management means in practice. The smart water management table was tested with approximately 60 water managers at a regional conference in the north of the Netherlands looking at the implementation of smart water management. The conference was attended by four regional water authorities and Rijkswaterstaat, the national water authority.

The participants were divided into five groups. Each group was asked to manage increasing water levels in some parts of the system due to a sequence of a heavy rainfall event, the failure of an important pumping station and a change in wind direction. The discussion at the tables resembled the discussions that would take place in reality: discussions about the problems, the measures to be taken and negotiations between the water authorities about helping each other. The selected measures were implemented in a rapid assessment model that showed the effects of the measures immediately. In addition to the real-life experience, the simulation proved useful as an analytical tool to identify what is needed to implement smart water management in terms of critical scenarios, open data, system knowledge, model requirements and political agreement.

The smart water management table is now serving as a pilot project for the actual implementation of smart water management at the water authorities. Users are experimenting with new elements in the game and then implementing those elements that work.

We will be continuing to develop the table in 2016 by adding new scenarios. A drought scenario will be developed, the underlying rapid assessment model will be further refined and a cost-damage module will be added to the simulation. The smart water management table can be used for other regions, both in the Netherlands and abroad.