Research description
The objective of the Virtual River project is to develop a serious gaming environment as a tool for actors to explore river management strategies in a collaborative fashion.

River management has become increasingly complex in recent years. The Room for the River (RvdR) program for example, incorporated a multifunctional approach to space. The RvdR projects have been executed to increase the space for water. At the same time, the projects aimed to enhance spatial quality – i.e. including functions such as nature, housing, recreation and business (Van Stokkom et al., 2005) – implying that multiple interests were taken into account. Combined with the decentralised approach of RvdR, this implied the introduction of more actors with their own objectives to the decision-making processes. River management is therefore a complex socio-technical system as it combines this socio-political component with the inherent technical uncertainties – i.e. river dynamics, climate change – of a river system (Pahl-Wostl, 2006). This project intends to develop a serious gaming environment where both the socio-political and the technical complexity are included. The envisioned gaming environment supports actors in river management to collaboratively discuss, negotiate and test management strategies. This way, a level playing field can be created which facilitates constructive discussion and collaboration.

Figure 1. Serious gaming environment impression (Photo: T-Xchange)
Results
Recent activities have focused on looking beyond the RvdR program. If the RvdR program is considered to cover the exploration, plan-making and implementation phases of all projects, Dutch river management is now transitioning to a post-RvdR phase where maintenance of the RvdR interventions is central. At the same time, other programs and projects – e.g. program ‘Stroomline’ – are implemented in the Dutch rivers and floodplains. Various river management actors – from ministries to municipalities and from the Dutch public works authority to nature organizations – were interviewed to map the challenges they now face. In the same interviews, the participants were asked what their preferred outcome of these challenges are, what would help them achieve it and what variables they would like to experiment with while pursuing this outcome. Results of the interviews show that the actors are indeed facing new challenges in relation to maintenance. Some of these challenges can be related to maintenance not being sufficiently incorporated in RvdR planning processes, others can be related to conflicting objectives between for example water safety and nature development. As for the variables to experiment with, multiple actors mentioned scaling and organisation of maintenance on a local, floodplain or river segment scale, albeit for very different reasons.

Next steps
The next step is full analysis of the interview results. The results are used to develop paper prototypes for a series of concept directions (see figure 2 for an impression). Next, these paper prototypes will be evaluated in co-design sessions with a combination of interview participants and RiverCare user groups. Goal of these sessions will be to explore the paper prototypes with 3-4 participants, determine which concept direction is most interesting and what functionality they would like to have in this direction. Afterwards, a first prototype of the gaming environment will be developed and iteratively evaluated and redesigned.

References