Delta Agents: a digital colleague for the hydrological forecaster

HKV · DigiShape event, 19 November 2026 · 7 min presentation incl. demo + 3 min Q&A · Presenters: Mattijn van Hoek

The challenge

The CAG River Team (WMCN) must combine a growing amount of information (model forecasts, ensembles, observations and reports) into a reliable forecast, while the expertise needed to interpret it is becoming scarcer. Forecasters ask for an integrated overview, insight into uncertainty and data quality, transparent explanations and reuse of the senior hydrologist's line of reasoning ("redeneerlijn"). At the same time, internal and external clients increasingly expect tailor-made insights on demand, rather than only the standard products at fixed times.

Our approach: Delta Agents

A Delta Agent is a specialised AI assistant for the water sector. HKV developed the concept from one core idea: a reliable AI agent cannot be built without domain knowledge.

Language models are good at handling large amounts of information, recognising patterns and summarising. On their own, however, they don't know which data sources to trust, how a hydrological model is configured, or what a flood scenario actually means. That is why we started developing Delta Agents at HKV two years ago.

A Delta Agent combines a language model with validated domain tools, such as knowledge bases, model configurations, monitoring data and flood-risk tools. Its answers come from an organisation's own data and expertise. Water experts are involved at every step: they choose which tools and data the agent may use, define what a good answer looks like, and test and validate the results.

What we will show on 19 November

- Our definition of a Delta Agent and the added value compare to a generic large language model (LLM).
- **Demo** of a Delta Agent working with data from Dutch water domain software , showing which sources and tools it used for its answer.
- Take away & some of the lesson learned so far, and how our lessons extends to a Forecast Assistant for RWS

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