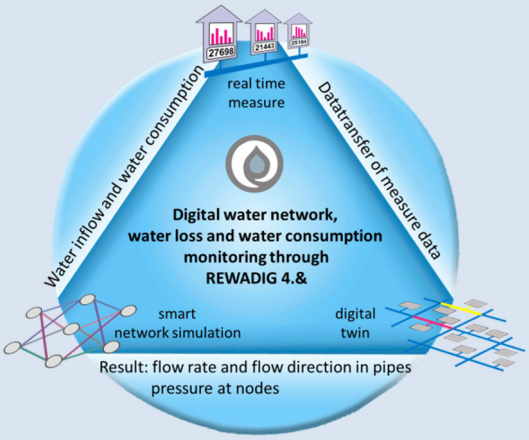
# RE WA DIG

## REsilience of WAter supply through DIGitalisation

Water network, water loss and water consumption monitoring
through digitalization and with the help of artificial intelligence.
This makes the water supply “visible”!




Pillars of RE WA DIG:

- Real-time measurement of inflow and all consumers
- Smart network simulation in the digital twin
- Digital twin of pipeline documentation GIS

powered by klima+ energie fonds

The following events mean that the supply of drinking water in terms of quantity and quality must be increasingly managed by the utilities:

| | |
|---|---|
| • Global warming | Rising temperatures and declining water resources, water warming, floods and droughts |
| • Aging care systems | Investments to maintain condition and value |
| • Increased customer expectations | Pressure stability, water quality and customer care |
| • Tense economic situation | Future investment and maintenance planning to ensure security of supply and reduce risks |

The listed influences require measures to increase the resilience of the supply system through continuous monitoring of flow, temperature, and quality parameters:

- Early detection of changes to limit damage and quality parameter
- Implementing preventive measures to avoid damage as far as possible

Digitalisation makes the supply system “visible” by digitally managing network, status and real-time measurement data. With the help of artificial intelligence, digital data for processes is developed in such a way that precise results are achieved to solve existing or emerging problems.

- Water losses in the pipeline network must be reduced or kept within limits.
- Water consumption must be reduced or optimized by avoiding waste.
- The asset value of the supply system must be increased through targeted investments and kept stable and functional through maintenance.
- With precise forecasts based on real-time measurement data and other influencing data, possible scenarios are evaluated with the help of artificial intelligence to maintain the stability of supply.

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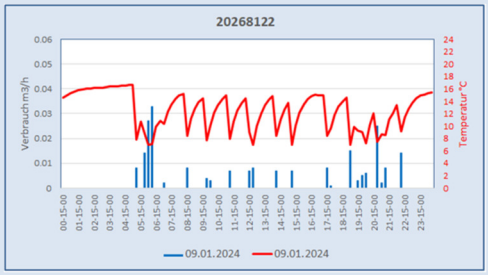
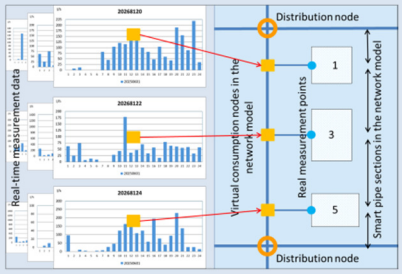
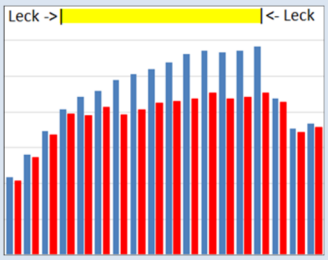
## Digital water loss monitoring

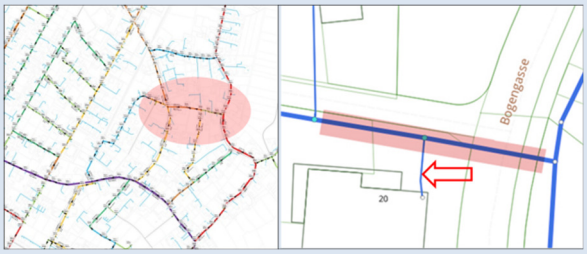
Water losses are detected early using real-time measurement data in the digital water balance and assigned to pipe areas or objects in the digital twin using artificial intelligence.




Digital real-time measurement data and digital twins are the basis for digital processes

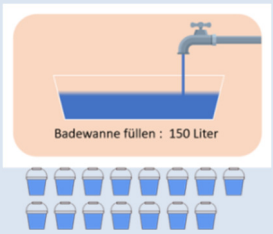



Digital water balance for early detection of losses – subsequently assigning water losses to the pipe area or pipe object through data networking and with the help of artificial intelligence.

## Digital water consumption monitoring

Drinking water is of utmost importance for the life and hygiene of the population. However, it is necessary to present suggestions for optimising use and reducing waste.




A fullbath requires about 150 liter of water


Shower 30-40 liter


Toilet big button 9 liter

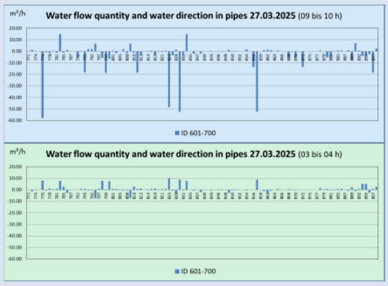

Toilet small button 3 liter

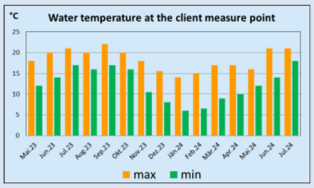
Flow reducer 4-16 liter/min, 3 bar

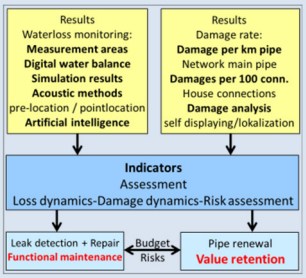
Selective customer advice to optimize water usage

## Digital water distribution network – monitoring

Digital water distribution network monitoring is to be applied through “operational intelligence” to optimize resource use, increase operational efficiency, reduce operating costs, increase sustainability of distribution systems and improve service quality.




Water quality monitoring through analysis of flow rate, flow direction, and water temperature. Maintaining the value and functionality of distribution networks through targeted maintenance.

**WATER is not EVERYTHING, but EVERYTHING is NOTHING without WATER**

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