

‘Out of Office’ Smart approaches to Remote Monitoring

Twinn Aqua Suite
Royal HaskoningDHV

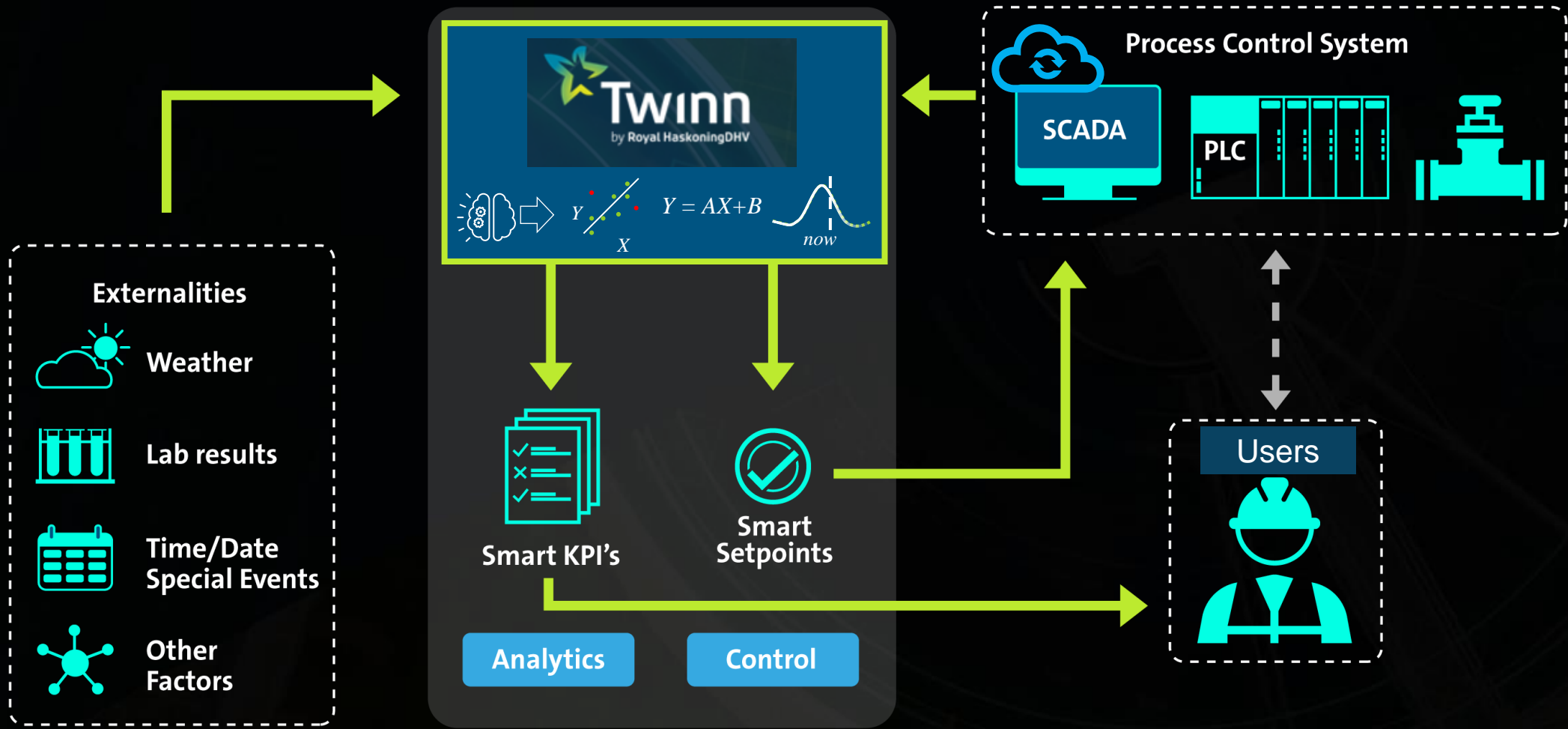
Why remote monitoring and control?

- More sensors
- More work
- More regulation
- Aging workforce



How we monitor and control

Twinn





Monitoring & Control of your
Drinking water production
and distribution network

Vitens Aqua Suite – The Netherlands



CLIENT

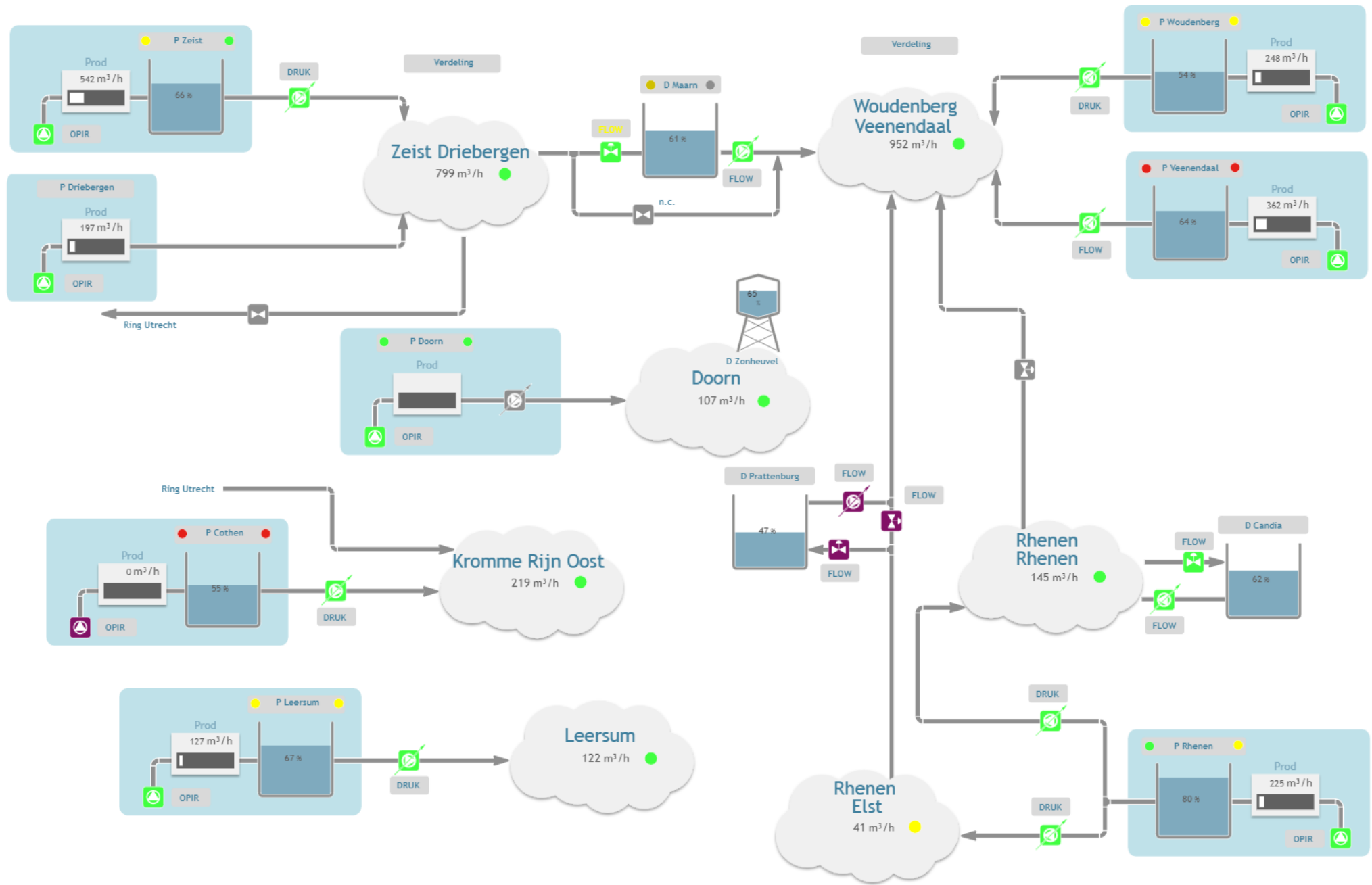
Vitens

CHARACTERISTICS

900,000 m³ per day for 5.5 million people, 49,000 km water grid, 96 water treatment works and 240 pumping stations.

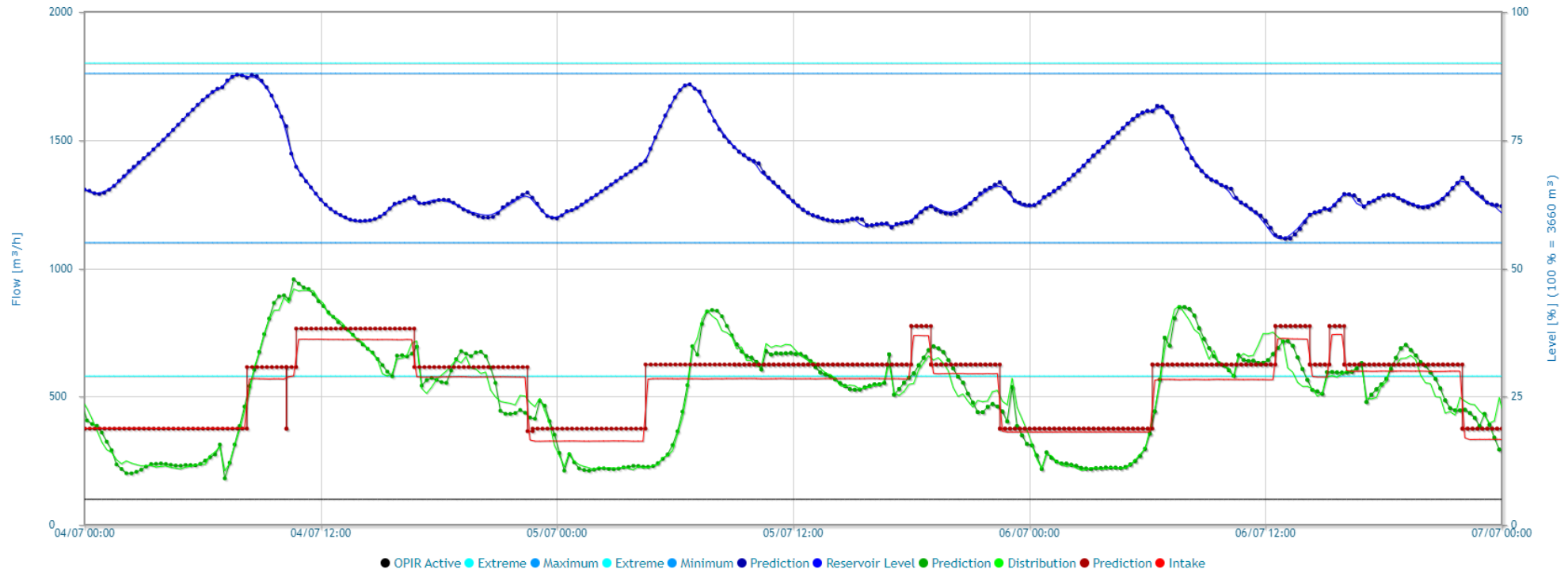
BENEFITS

- ✓ Source to tap overall control
- ✓ 65% less variations in production
- ✓ 42% less particle load in produced water
- ✓ 10% less energy usage



Trend Zeist

Sunday 4/7/2021 - Wednesday 7/7/2021



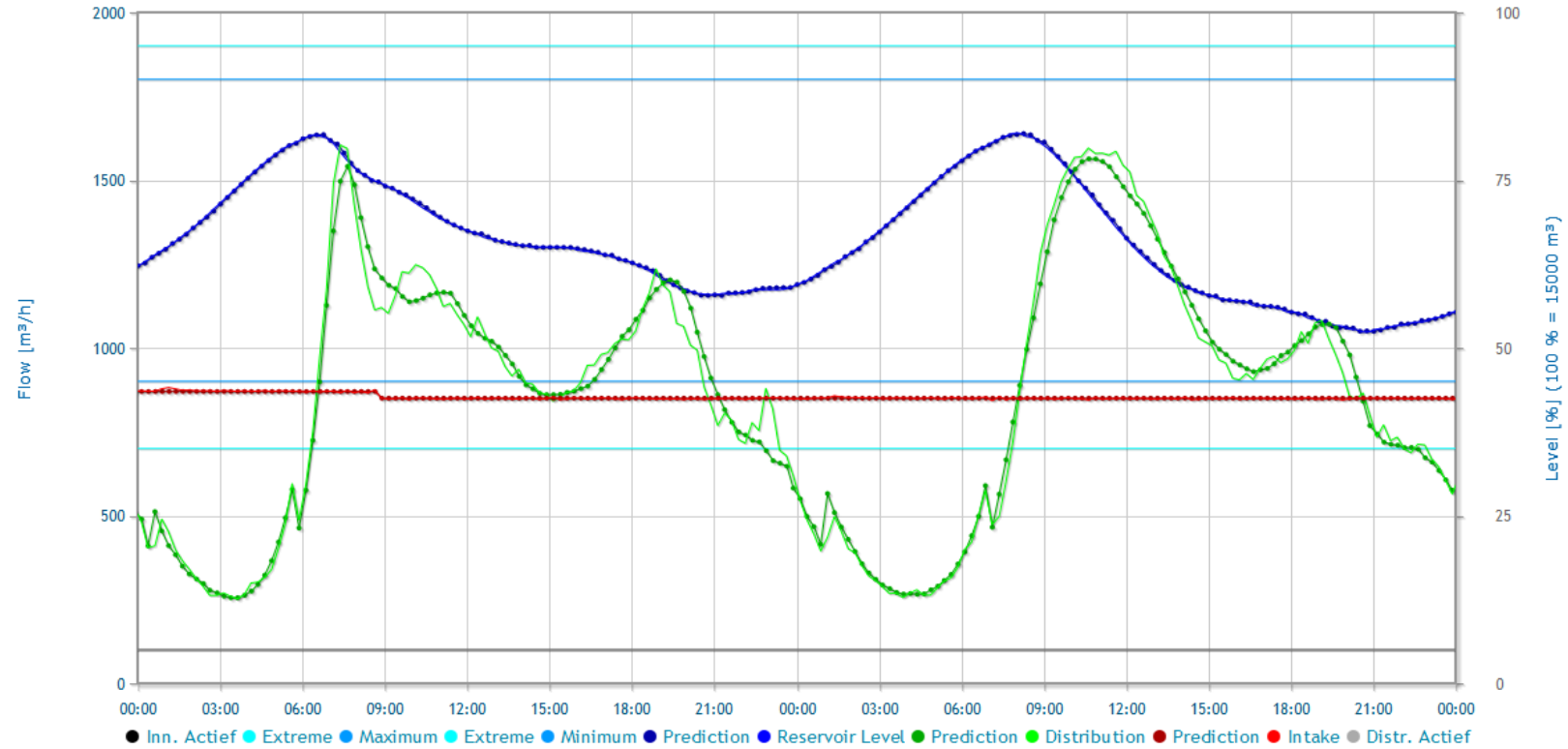
Predicted:	Reservoir level	Intake	Distribution
Actual:	66 % (2414 m³)	615 m³/h	704 m³/h
OPIR:	66 % (2415 m³)	542 m³/h	669 m³/h

- Sufficient storage
- Combining reservoirs to achieve your priority



Trend Westerterp

Friday 20/10/2017 - Sunday 22/10/2017



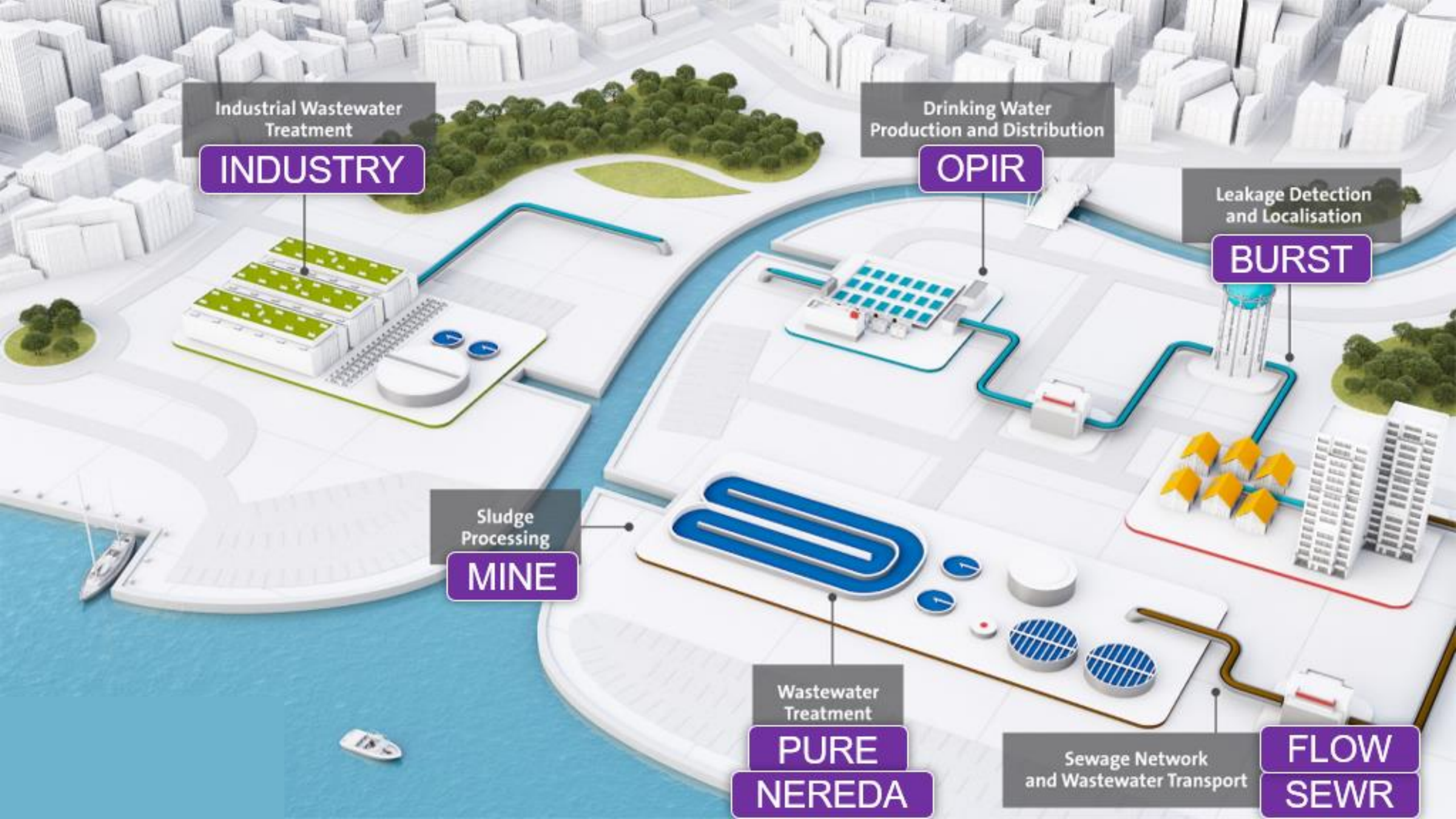
	Reservoir level	Intake	Distribution
Predicted:	75 %	11185 m ³	850 m ³ /h
Actual:	76 %	11325 m ³	840 m ³ /h
OPIR:			1245 m ³ /h
			1212 m ³ /h

- Constant pumping rate
- Increased asset lifetime
- Reducing non-revenue-water

What about the operator?

- Input and analysis
- Knowledge of the network
- Grey box approach





Industrial Wastewater Treatment
INDUSTRY

Drinking Water Production and Distribution
OPIR

Leakage Detection and Localisation
BURST

Sludge Processing
MINE

Wastewater Treatment
PURE NEREDA

Sewage Network and Wastewater Transport

FLOW SEWR



Aquasuite controller for 100+ sites.
Majority in the Netherlands, but globally
tried and tested succesfully

Integration of 18k neural network models in
Jacobs' AquaDNA environment to prevent
CSOs for 7 mil. people

Control for 9 wastewater
treatment plants at Vallei &
Veluwe, energy optimization
and improved effluent quality



60% of the Dutch drinking water is
produced with Aquasuite. Vitens:
optimizing 340 assets/sites

On the PUB IVP plant Aquasuite provides
foresight in process, measurements and
assets. Prediction of influent load.

Preventing Non-Revenue
Water in 3200km of piping

