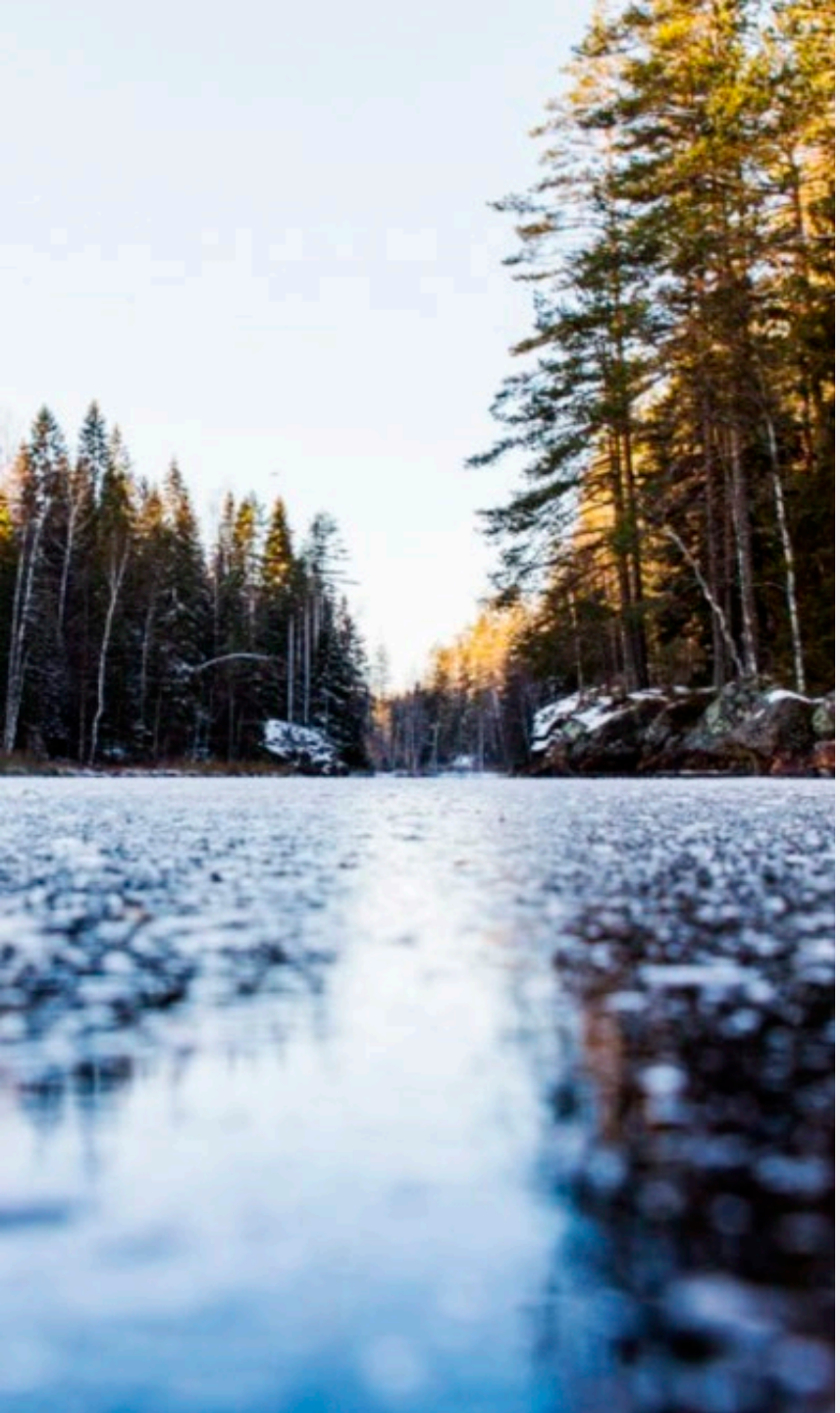


HYDROMETA

2024-10-02 Pori, Finland

Contents

- Who is Ville Kuoppala
- Company
- Online Monitoring

Ville Kuoppala

- 42 year old Automation Engineer
- Started career as a SCADA system programmer
- Have been developing several web based monitoring systems since 2003
- Over 100 projects with different monitoring systems
- Technical manager at BK-Hydrometa Oy

BK-Hydrometa Oy 1/2

- BK-Hydrometa Oy: Import and sale of hydrological and meteorological measuring devices
- BK-Hydrometa is one of a global network of 70 equipment suppliers with Finland as its region

- Founded in 2011
- Office: Ähtäri
- Personnel >10

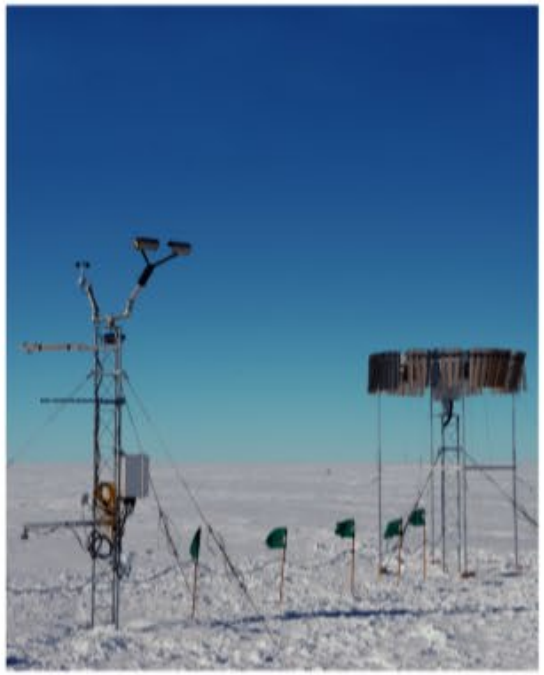
BK-Hydrometa Oy 2/2

- Expert company in water treatment and environmental measurements
- Pool and dam monitoring, monitoring of wetlands

- Design and production of EFFE® wastewater treatment plants
- Long-term product development work
- The first water purification plants in 2015
- Online monitoring systems like Depos® LiveData and Depos® WebSCADA

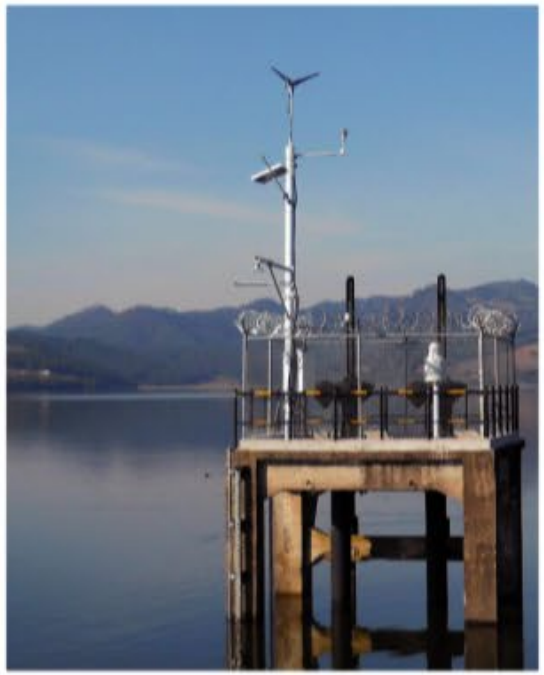
EXPERIENCE & EXPERTISE IN METEOROLOGY

OTT HydroMet



Climatology

Ambient weather, cloud height, snow depth, precipitation for long term monitoring



Meteorological Observations

Sensor to system solutions: highest precision for meteorological forecasting

Renewable Energy

Informing key decisions for solar and wind research, resource and performance monitoring

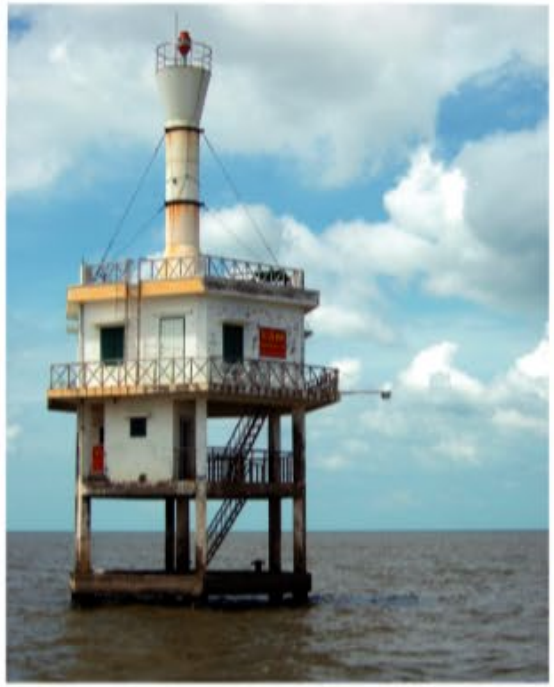
Agricultural Meteorology

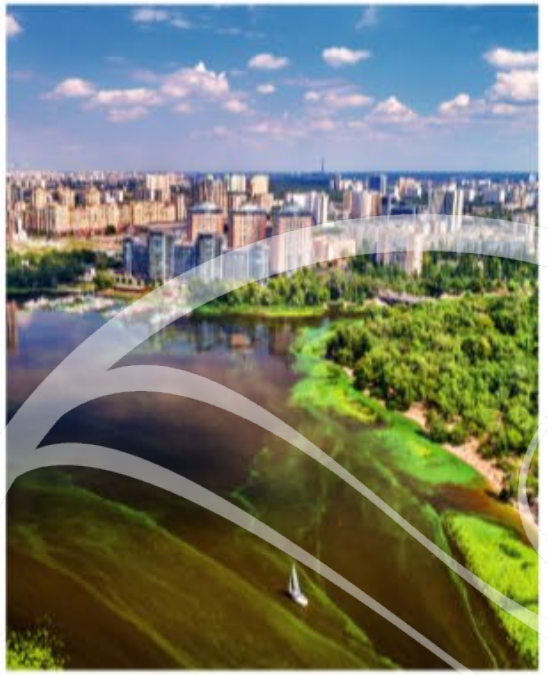
Precision farming, smart agriculture, plant disease monitoring

EXPERIENCE & EXPERTISE IN HYDROLOGY

HYDROMETA

OTT HydroMet





Surface Water Quantity

Water level, flow and precipitation monitoring with remote communication and data solutions

Flood warning

Water level and precipitation monitoring, alerts and data solutions

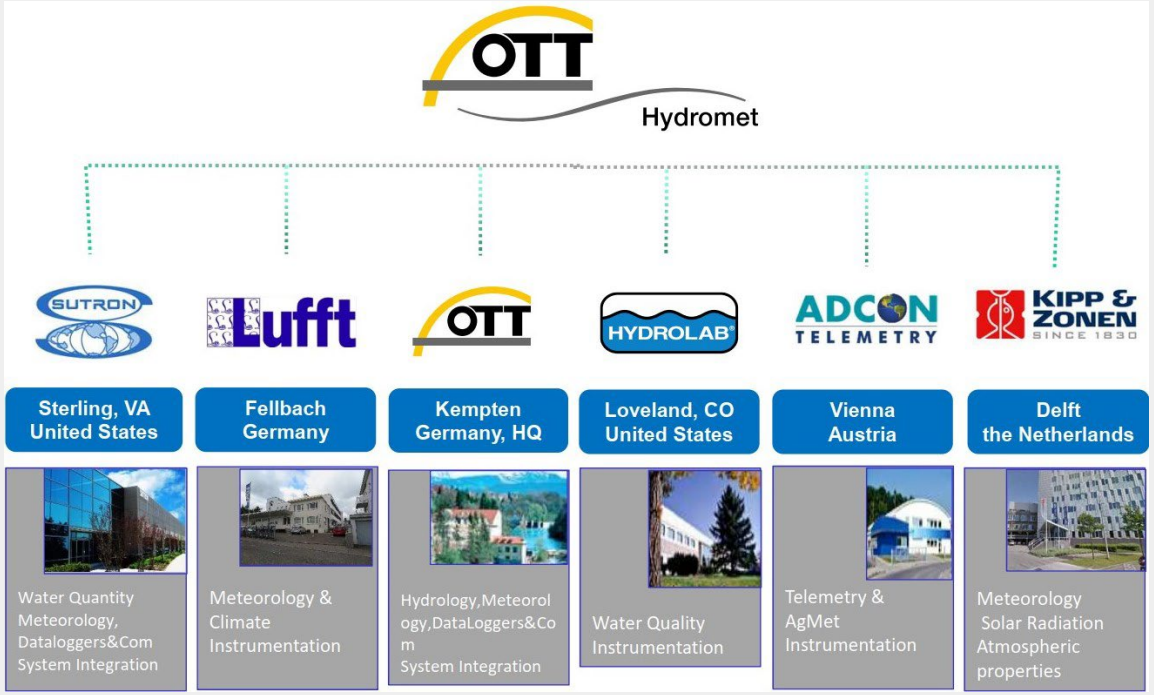
Groundwater

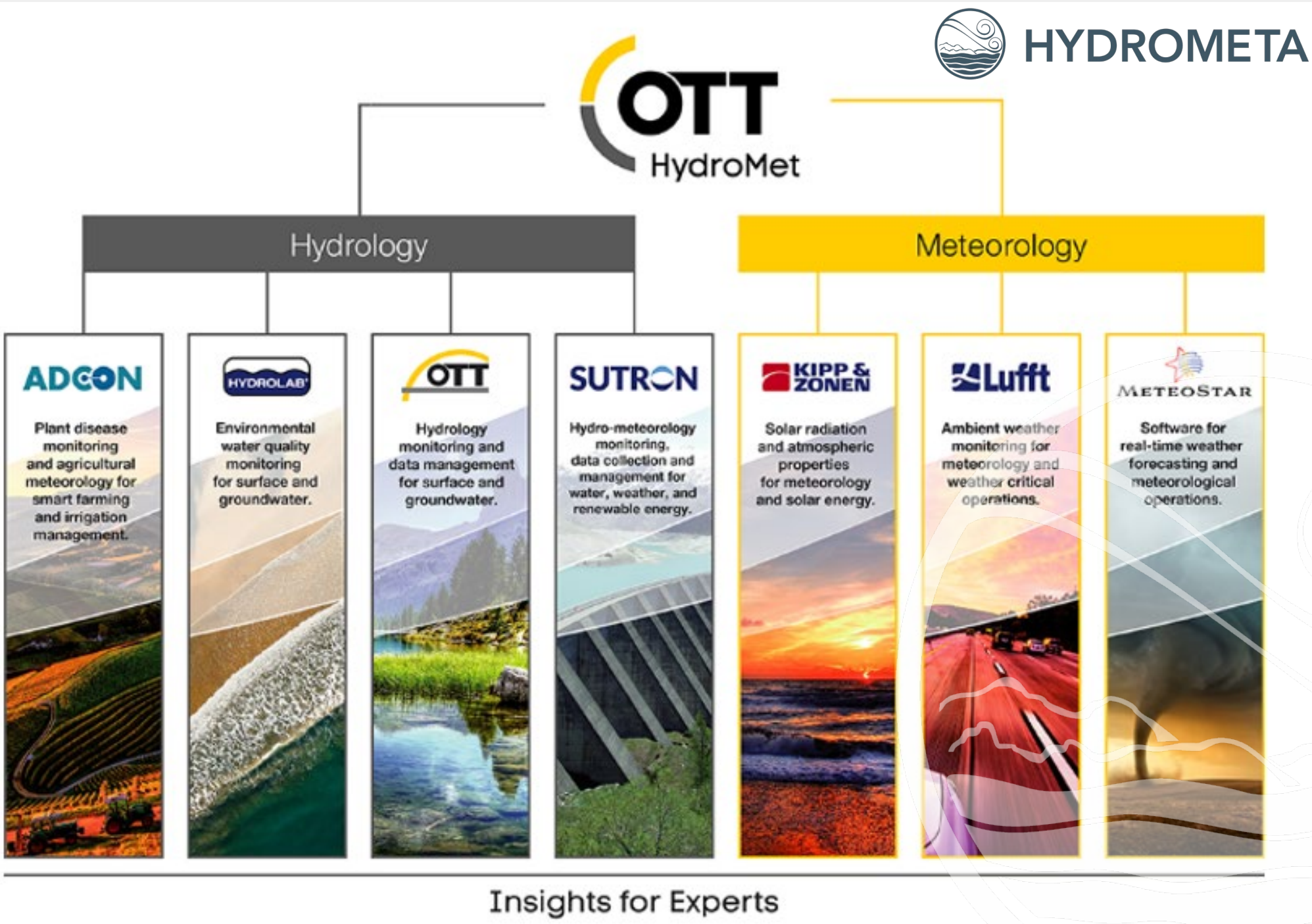
Short and long-term water level monitoring

Water Quality

Spot checking and long-term continuous monitoring

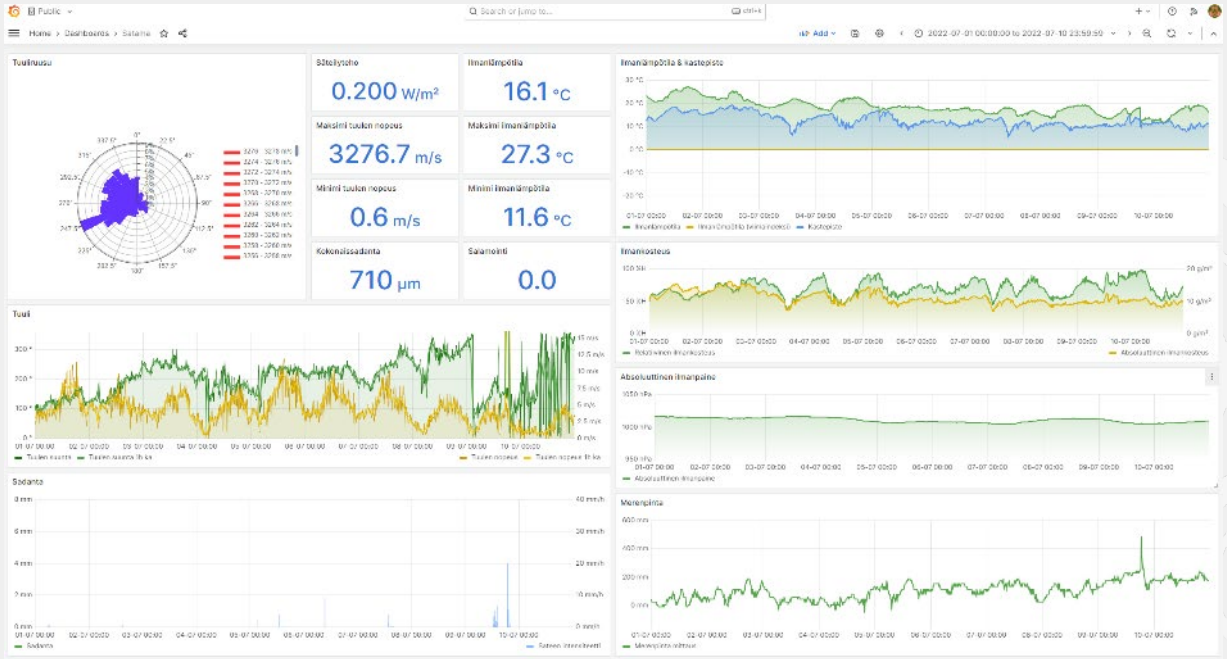
Measurement instruments and devices




HYDROMETA
OTT HydroMet
Hydrology
Meteorology
ADCON
Plant disease monitoring and agricultural meteorology for smart farming and irrigation management.
HYDROLAB
Environmental water quality monitoring for surface and groundwater.
OTT
Hydrology monitoring and data management for surface and groundwater.
SUTRON
Hydro-meteorology monitoring, data collection and management for water, weather, and renewable energy.
KIPP & ZONEN
Solar radiation and atmospheric properties for meteorology and solar energy.
Lufft
Ambient weather monitoring for meteorology and weather critical operations.
METEOSTAR
Software for real-time weather forecasting and meteorological operations.
Insights for Experts

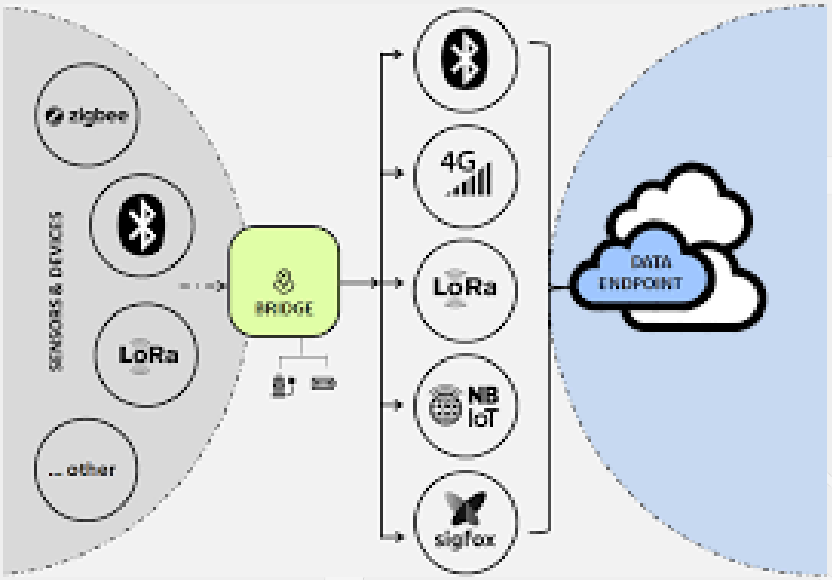
BK-Hydrometa Oy 1/8

- Online Monitoring
  - Measurements are viewable through monitoring software nowadays mostly from web browser
  - Parameters to be monitored are updated by real-time, near real-time or the values are historical
  - Visualization of data is at least tabular but can also be for example different kind of charts like bar chart, pie chart or trends



BK-Hydrometa Oy 2/8

- Online Monitoring
  - Communication for data monitoring can be done several ways today but mostly data is sent wirelessly



BK-Hydrometa Oy 3/8

- Online Monitoring
  - Data can also be gathered from external databases either directly or through API
  - for example in Finland we can get the weather forecast information also implemented to data visualizations
  - also there is a possibility to get data from SYKE

BK-Hydrometa Oy 4/8

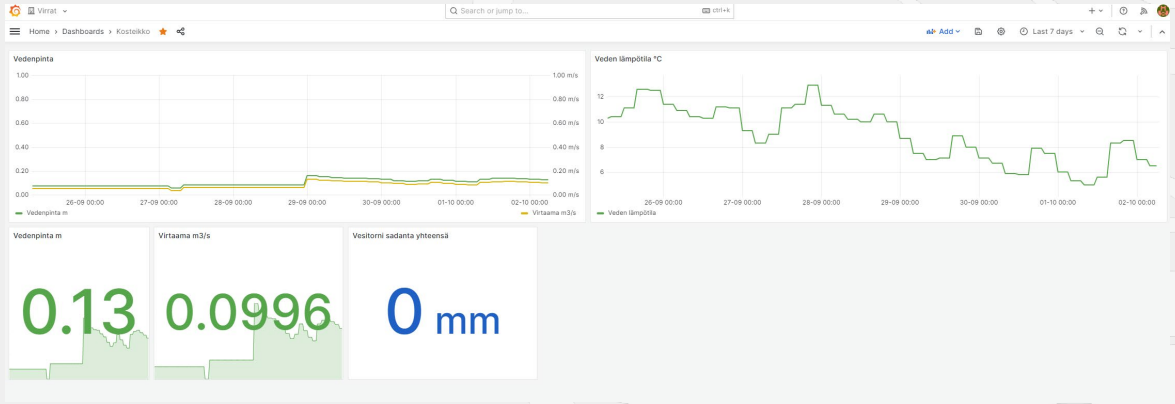
- Online Monitoring
  - Future of online monitoring is that large language model type of AI are coming to improve understanding the measured parameters in different locations

BK-Hydrometa Oy 5/8

- Hydrometa KOSMIS® Monitoring system
  - KOSMIS®, the wetland measurement and monitoring system developed by BK-Hydrometa Oy, offers useful information about the situation and functionality of forestry and agriculture or urban wetlands.
  - The system offers the possibility to facilitate the maintenance of the wetland and to observe the effects of the seasons or the weather on the operation of the wetland. The most important measurements or the widest possible selection from water balance measurements to water treatment can be included in the system. It is always easy to supplement the selection.

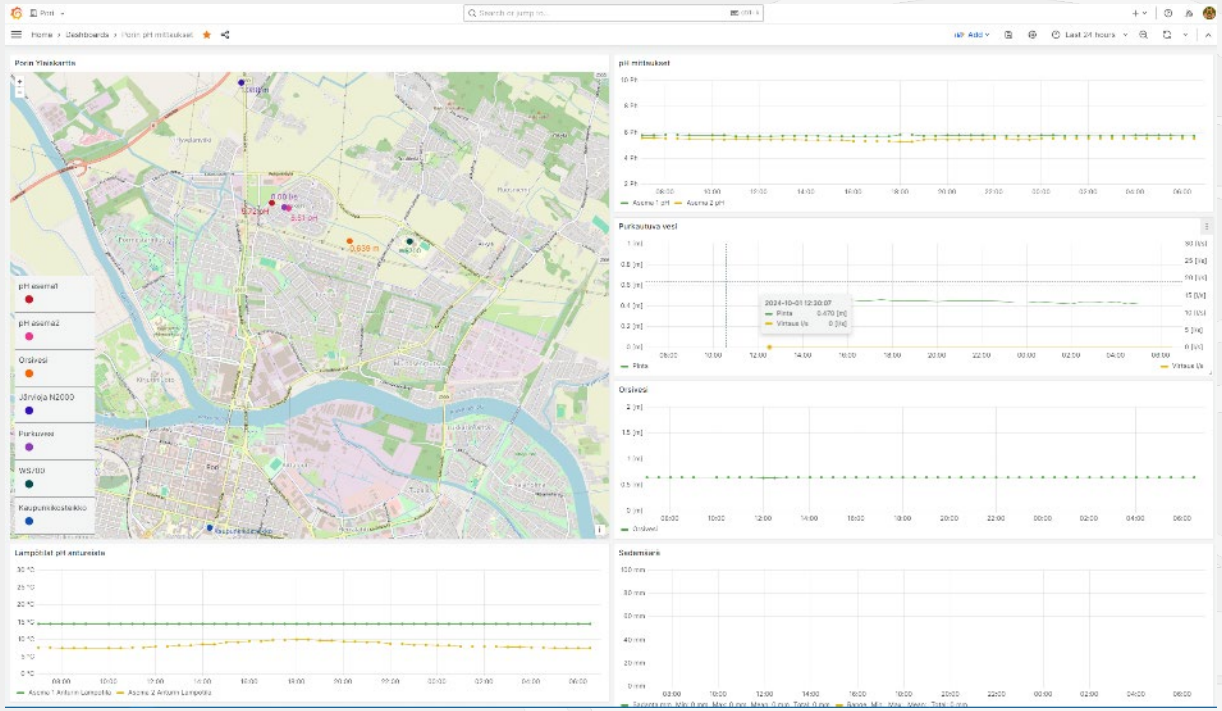
BK-Hydrometa Oy 6/8

- Hydrometa KOSMIS® Monitoring system
  - The owner of the wetland can acquire the necessary equipment and measuring devices for his own or rent them. Over time, the information gathered from the measurements helps to understand the actual functioning of the wetland. Data also helps to react to possible problem situations in good time and thus saves effort and resources.



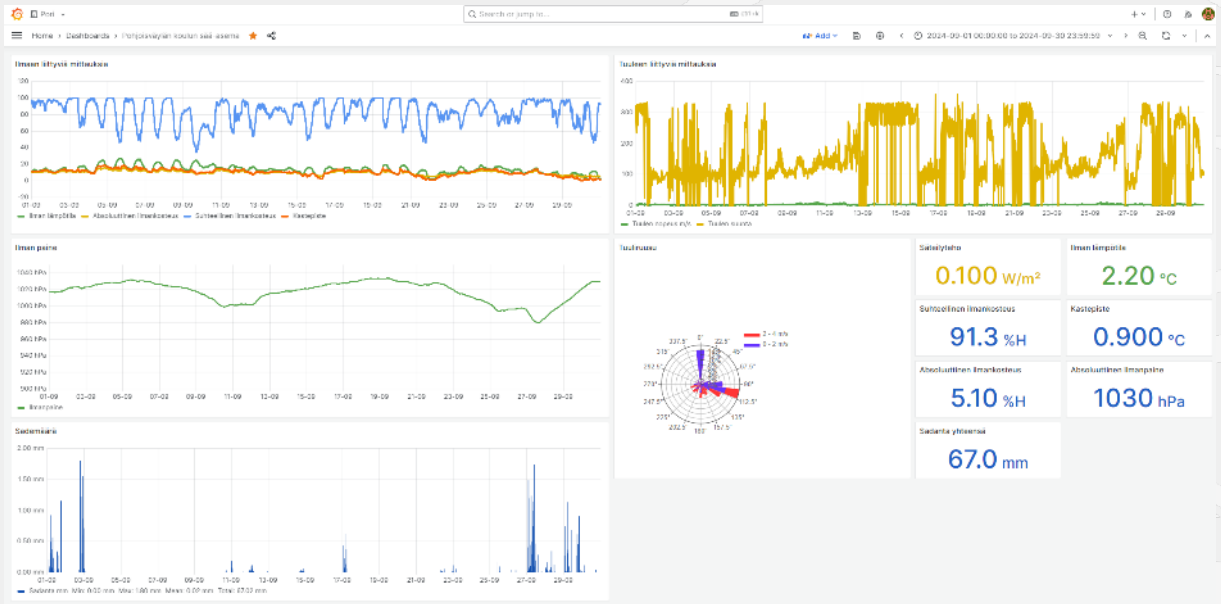
BK-Hydrometa Oy 7/8

- Online Monitoring at Pori
  - In the wetland area of Lotskeri, water pH levels have been measured for several years. The measurements have shown significantly low pH levels, which were investigated more closely in the spring of 2024



BK-Hydrometa Oy 8/8

- Online Monitoring at Pori
  - To the school near by Lotskeri there is also weatherstation installed from which most accurate local weather information can be collected i.e. accumulated rain, wind direction and speed, temperature and air pressure



Thank You!

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