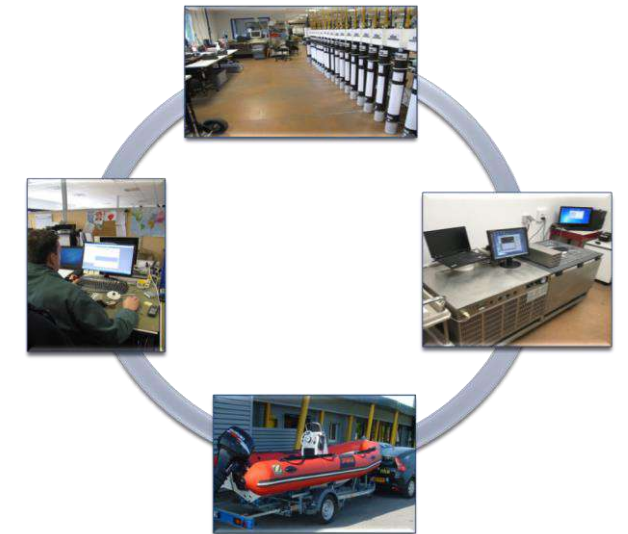


# WiMo Multiparameter probe: *Applications in Freshwater and the marine environment*



# nke instrumentation company

- Located in Hennebont, Brittany, France
- Created in 1984
- Specialized in the study and fabrication of **instruments and systems for water measurements and environmental monitoring**
- 40 employees (engineers, construction)
- **Ocean, deep sea, coastal areas, rivers, lakes**
- **Metrology lab: calibration, QC**
- **Service: Installation and maintenance**





# The WiMo Multiparameter Probe

- 2 versions (4 and 7 locations)
- Fully customized
- **Plug and play numerical sensors**
- Alkaline batteries or rechargeable batteries
- Intelligent automatic wiper
- Large data storage



- large range of communication and telemetry (Modbus, GPRS, satellite, ...)
- **250 m depth**
- WiFi programming
- friendly programming interface (no specific software)
- **Large range of sensors**
- Up to 16hz sampling rate

# The digital smart sensors suite



## WiMo

4 locations











## WiMo Plus

7 locations







### Native parameters

- Temperature 
- Water Pressure 

### Smart sensor suite

- Conductivity 
- Turbidity 
- Oxygen concentration 
- Oxygen saturation 
- pH 
- Fluor 
- CDOM fDOM 
- Hydrocarbons 

### Calculated parameters

- Chloride 
- Depth 
- Salinity (sea version) 
- Sound velocity 
- Specific conductivity 
- Total dissolved solids 

# Applications

Coastal buoys



Profiling, small buoys

Integration into existing platforms (e.g. ROVs)



## Multi-application sonde for water quality data collection

- Fresh water environments:
  - Industrial discharge monitoring*
  - Public construction monitoring*
  - Water channelling and sanitation monitoring*
  - Scientific experiments*
- Environmental monitoring
- Coastal areas applications
  - Harbour construction monitoring*
- Fishing & Oysterfarming
- Wind offshore environment (MREs)





# Freshwater applications

## INDUSTRIAL DISCHARGE MONITORING

### o Need

Knowing the impact of the plant on the water

### o NKE's expertise

Temperature monitoring of rejected water thanks to real time communication, GPS localisation against vandalism

## PUBLIC CONSTRUCTION MONITORING

### o Need

Monitoring the impact of a highway constructions on river's water quality

### o NKE's expertise

Upstream and downstream measurements of suspended particles with alarm thresholds sent by e-mail



# Freshwater applications



## WATER CHANNELLING AND SANITATION MONITORING

- Need

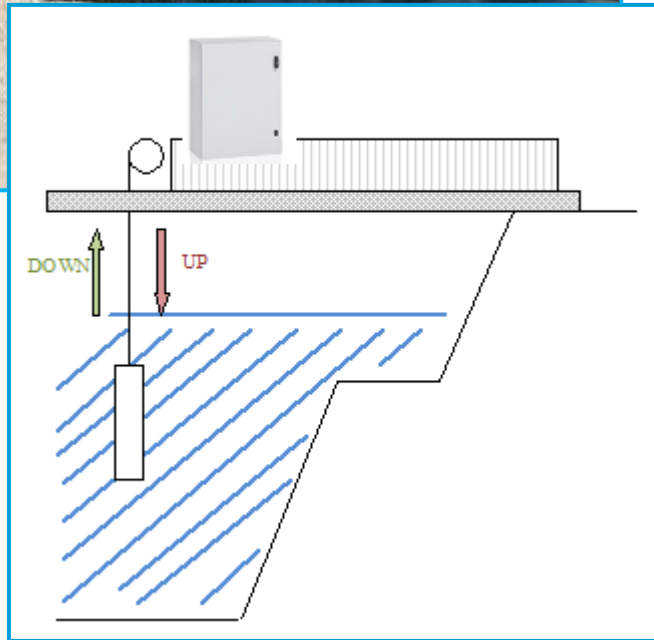
Control the water quality of collected rainwater before discharging it in a storm-water lake

- NKE's expertise

Real-time measurements of 2 water inputs and 1 water output with data transmission by e-mail



# Freshwater applications



## SCIENTIFIC EXPERIMENTS

### o Need

Monitor mesocosmic experiments in artificial lakes

### o NKE's expertise

Supply and installation of 17 multiparameter probes with frames on a platform of 17 experimental and artificial lakes to monitor temperature, depth, dissolved oxygen, fluo, pH

# Monitoring stations



## MAGEST NETWORK

- Need

Monitoring water quality at the entrance in Gironde estuary (incl. Rivers Garonne and Dordogne )

- NKE's expertise

Supply and installation of 8 multiparameter probes to measure temperature, salinity, turbidity, dissolved oxygen and fluo parameters



## SYVEL NETWORK

- Need

Monitor the evolution of the estuary's main parameters (salinity, do, suspended particles) and quantify and understand the impacts of the potential adjustments

- NKE's expertise

Supply and installation of 7 multiparameter probes to measure temperature, conductivity and salinity parameters

# Coastal applications



## HARBOUR CONSTRUCTION MONITORING

### o Need

- Monitoring the impact of the derocking in the harbour on water quality
- Monitoring the impact of the constructions of a mega bridge on water quality

### o NKE's expertise

Measurements of suspended particles with alarm thresholds sent by e-mail

### o Examples of customers

BRITANNY Council  
BOUYGUES (La Réunion)  
BREST Harbour



# Aquaculture, Fishery



- Need

Monitoring of fishing nets and/or aquaculture and oysterfarming.

- NKE's expertise

Range of autonomous and real-time monitoring multiparameter probes such as the WiMo sonde that can monitor these kinds of environments.

- Alternative:

Compact WiSens



# Offshore applications

## ○ Need

Oceanographic buoys for meteorological and environmental measurement to monitor the construction area of a new wind offshore farm

## ○ NKE's expertise

- Monitoring measurements at sea to measure various parameters including turbidity, pH and chlorophyll
- Measurement of swell, current and weather
- Real-time satellite communication
- On-site deployment and seakeeping of the buoys
- Monitoring and maintenance of the buoy network

## ○ Example of deployment

Bay of Saint-Brieuc





*Merci de votre attention !*

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