The use of **IoT** and **IA** for Digitalized and Sustainable Aquaculture

EATIP Forum

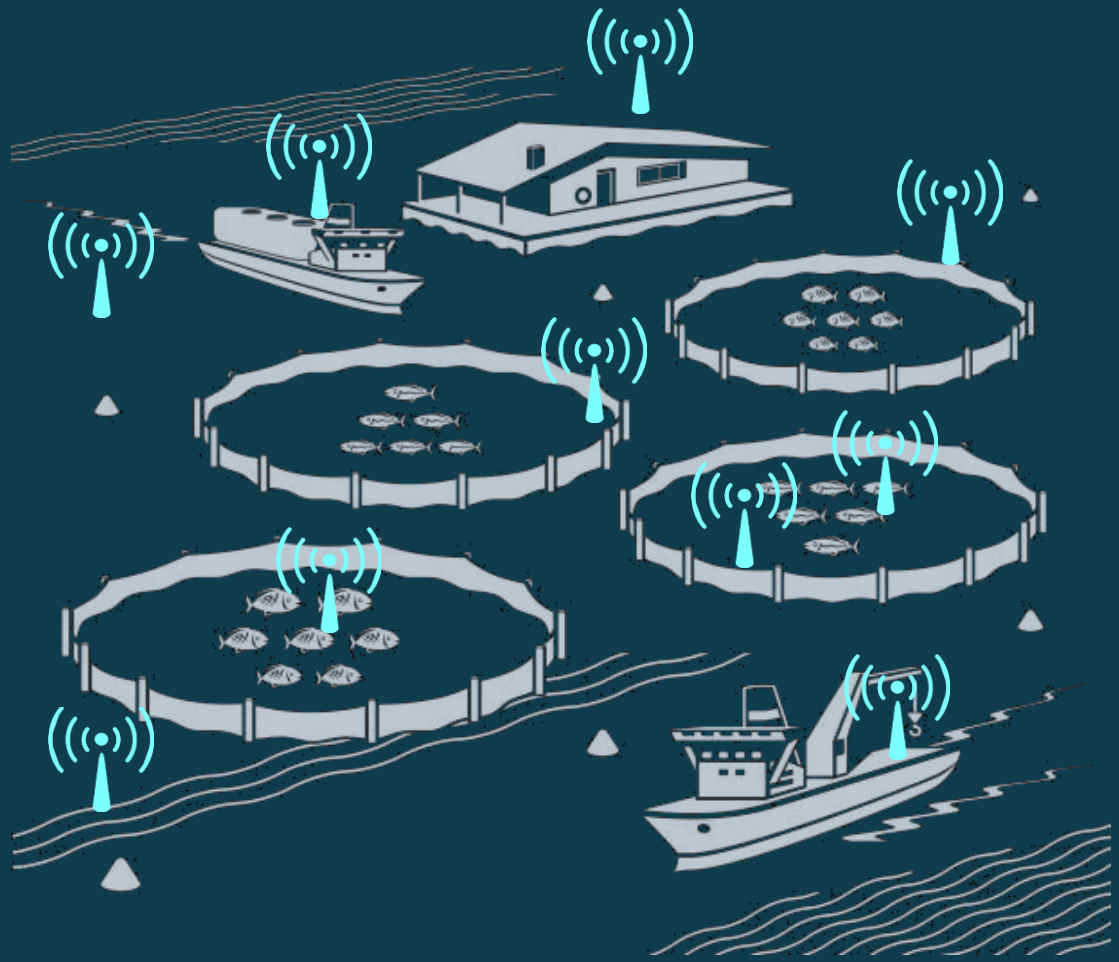
Digitalization in aquaculture – From vision to action. Friday, March 26th

BiOceanOr
Biology For Ocean

What is Internet of Thing (IoT) ?

IoT will help aquaculture get information instantly and continuously about :

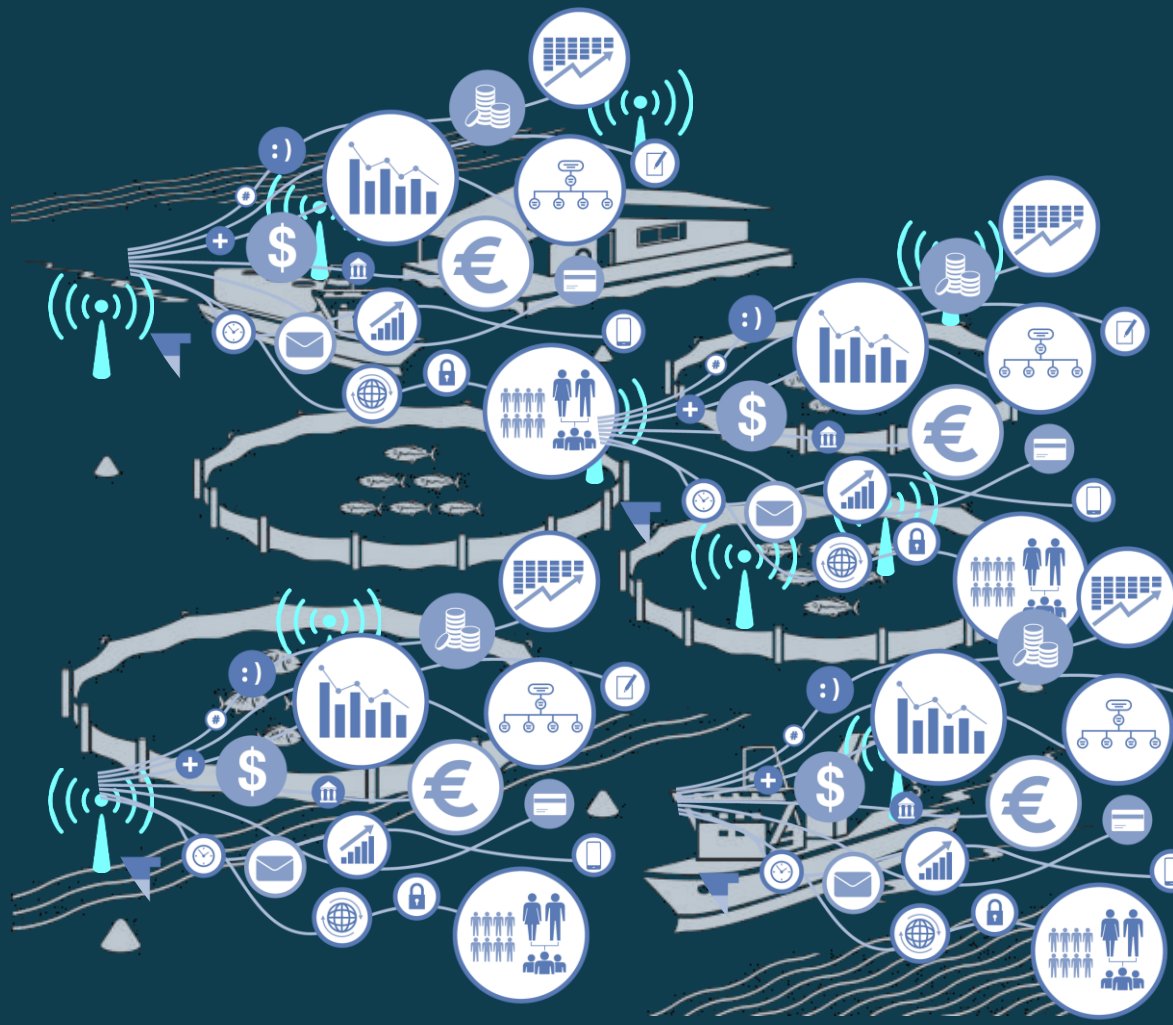
- **Fish production status**
- **Cage status**
- **Water quality inside and outside the cages**
- **Feeding status**
- **Boat status**



Big Data for Aquaculture

The information gathered by all sensors is huge :

- Time-series data
- Graphs
- Alerts
- Status
- Comparison data
- Forecasts
- Images & Videos
- etc.



We need a powerful technology to get a deep understanding of the gathered data.

Artificial Intelligence for Aquaculture

Turn DATA into intelligence to create value.

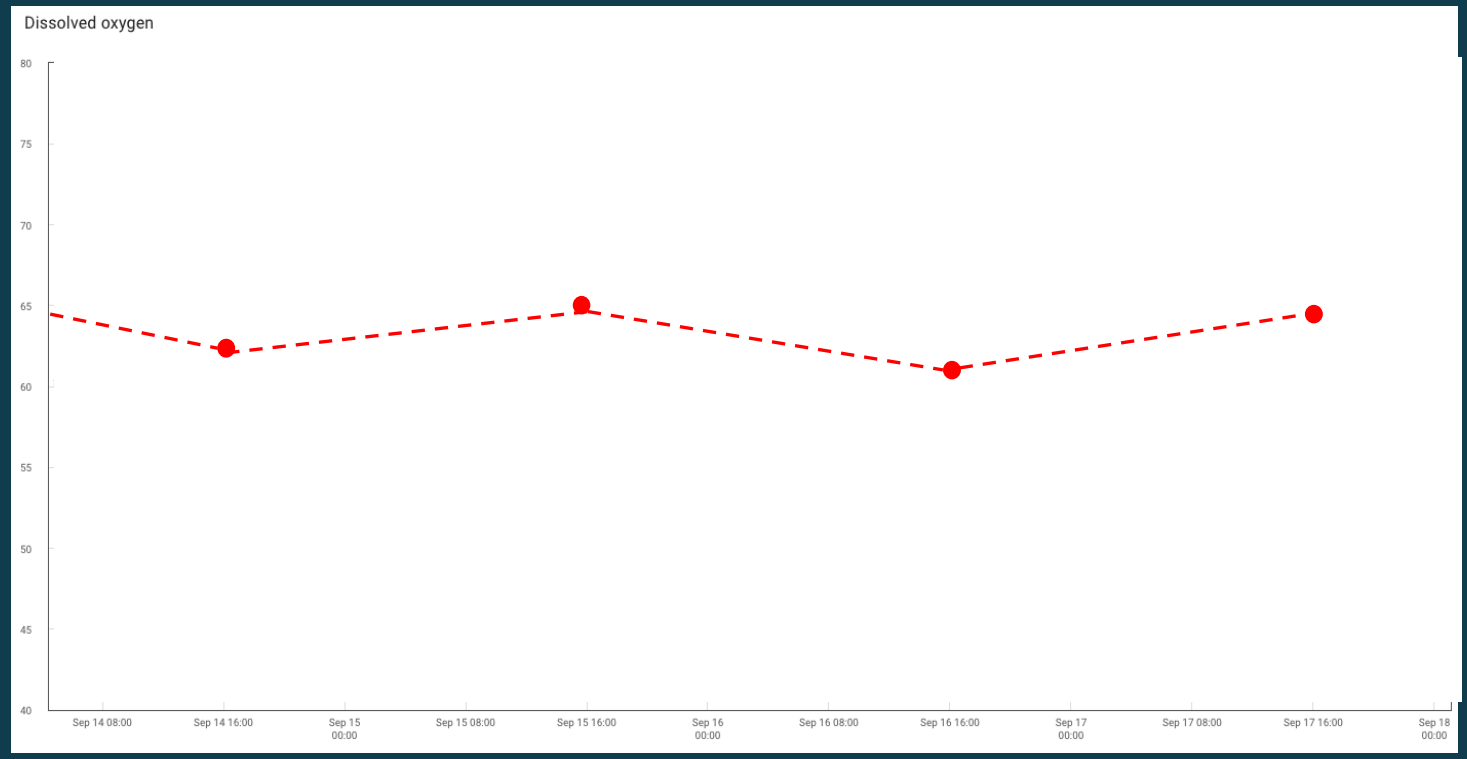
Artificial intelligence (AI) is the ability of a computer program or a machine to think and learn.

With AI, data gathering unleashes all its potential:

- **Always adapting and learning from analysis**
- **Multiparameters comparison in seconds**
- **Parameters forecast for a better anticipation**
- **Outside data such as weather forecast and satellite imaging are taken into account**
- **Ultra specific advice**

Bioceanor’s Real Time Monitoring example

- Example of Dissolved Oxygen Manual Measurement in a fish tank (seabass)

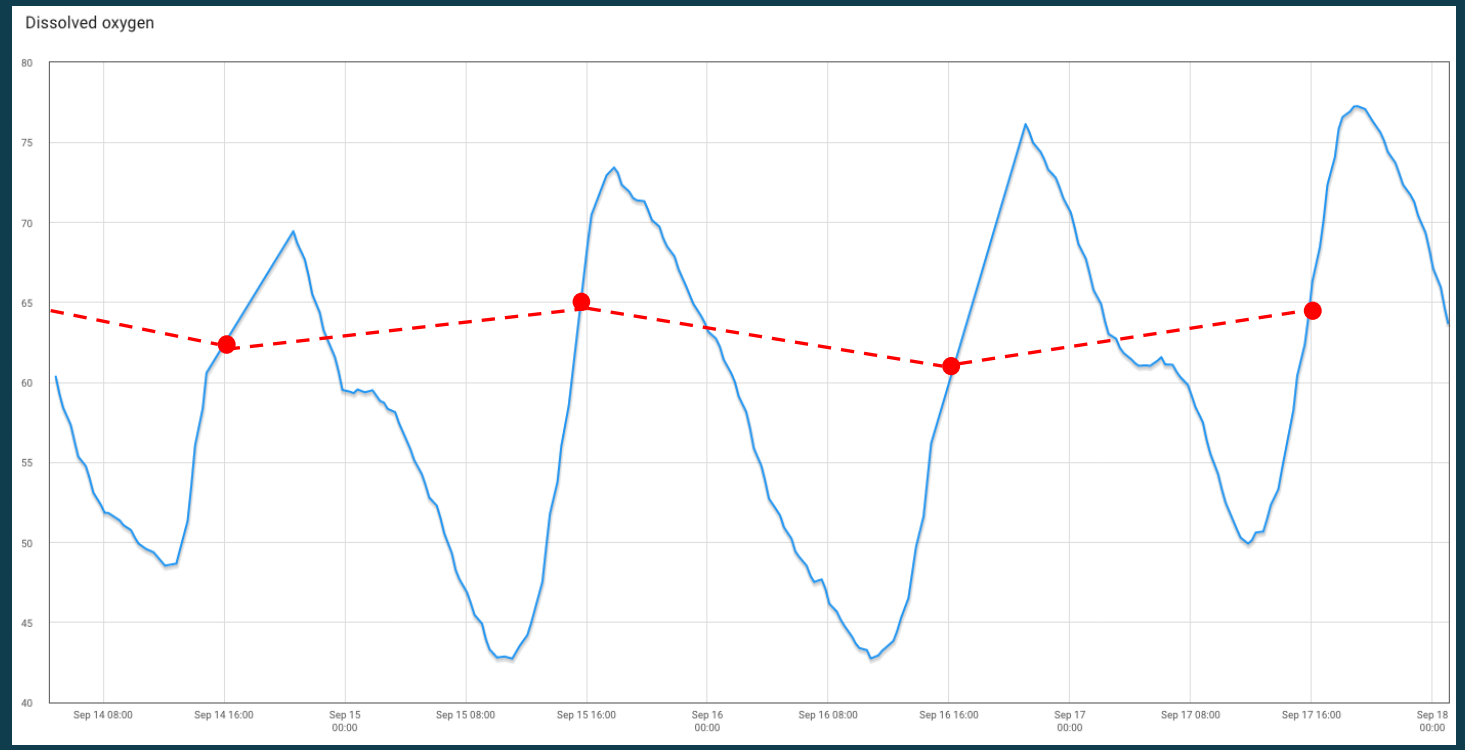


Daily manual measure

Estimation from manual measure

Bioceanor’s Real Time Monitoring example

- Example of Dissolved Oxygen Measurement in a fish tank (seabass)
- Daily manual measurement VS reality



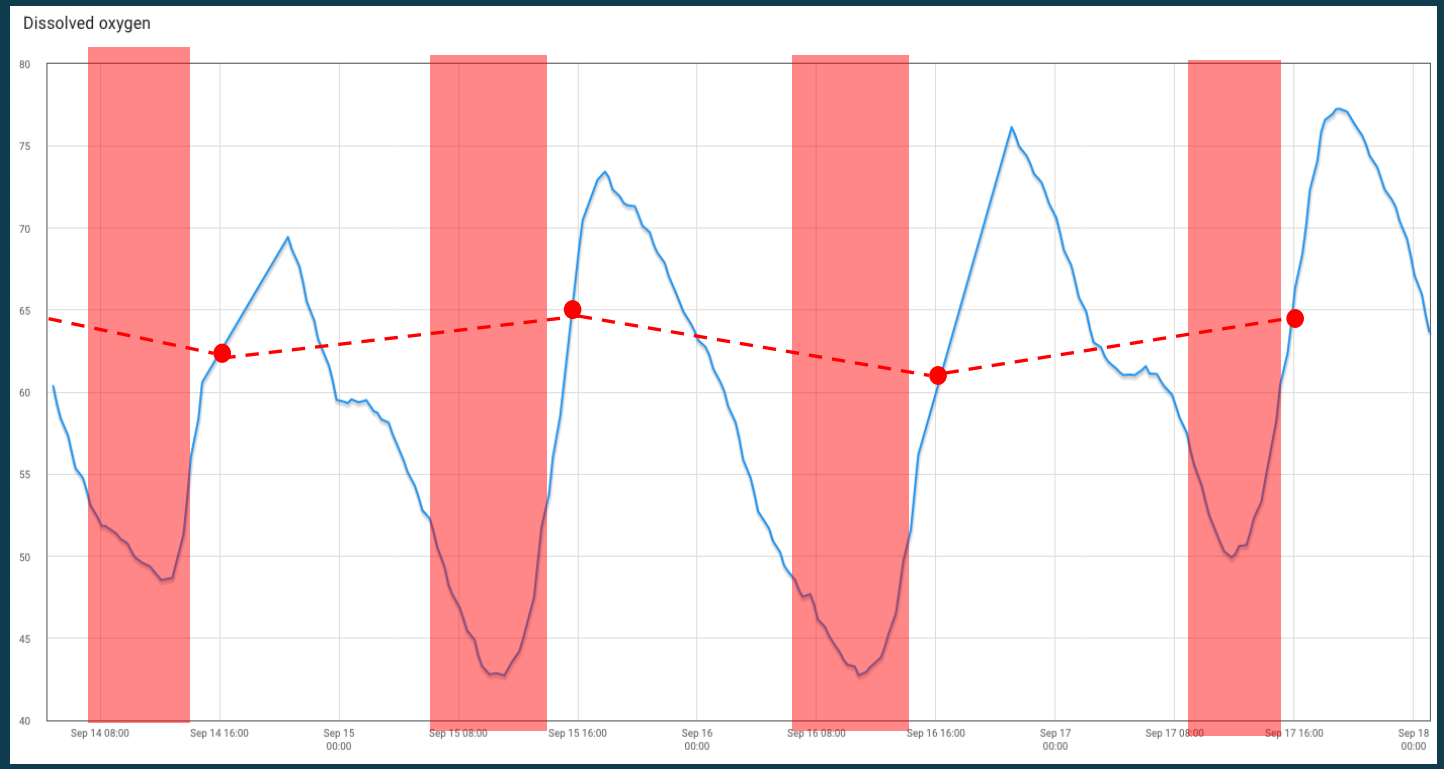
Dayly manual measure

Estimation from manual measure

REALITY

Bioceanor’s Real Time Monitoring example

- Example of Dissolved Oxygen Measurement in a fish tank (seabass)
- Daily manual measurement VS reality
- Activate aerator at the best time & reduce stress
- Feed at the best time

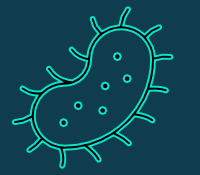


Artificial Intelligence

Using Machine learning to be able to predict and anticipate multiple events:

Dissolved Oxygen

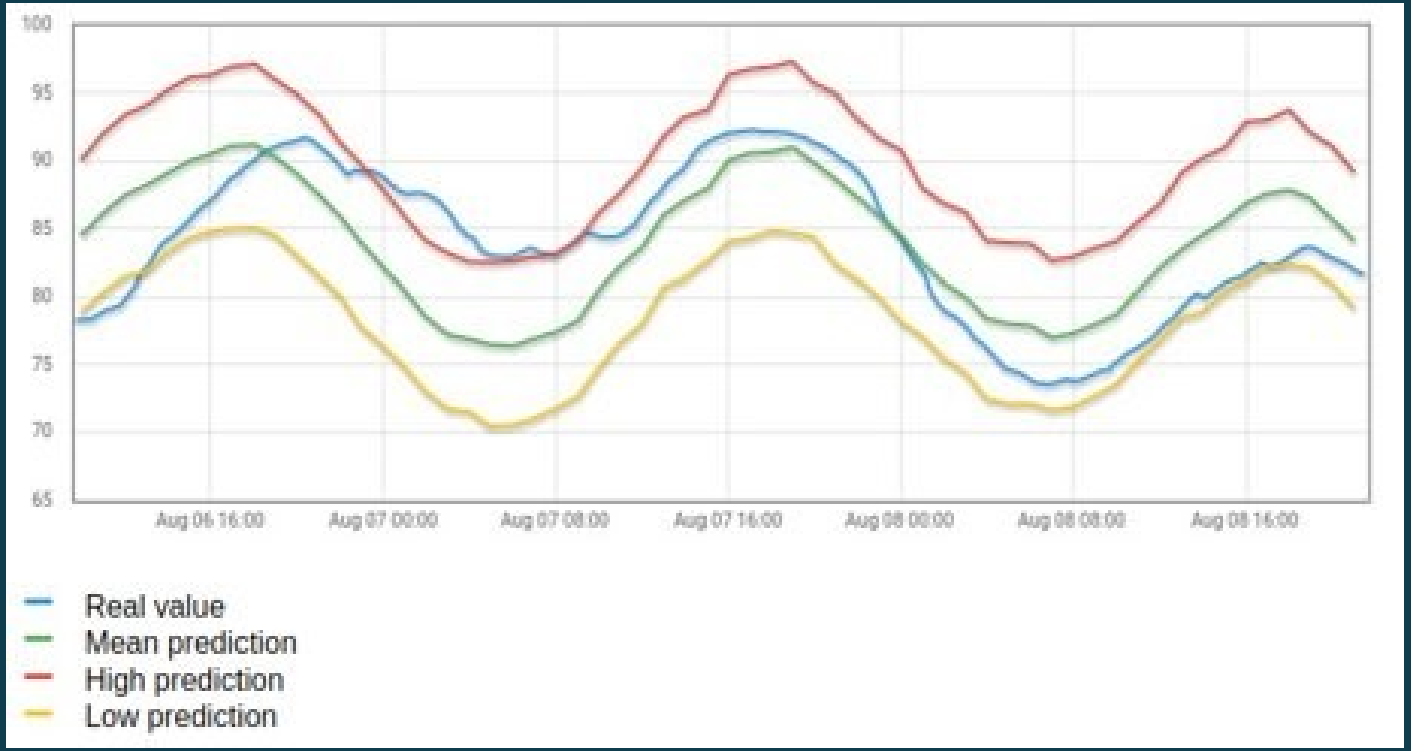
Harmful Algae Bloom



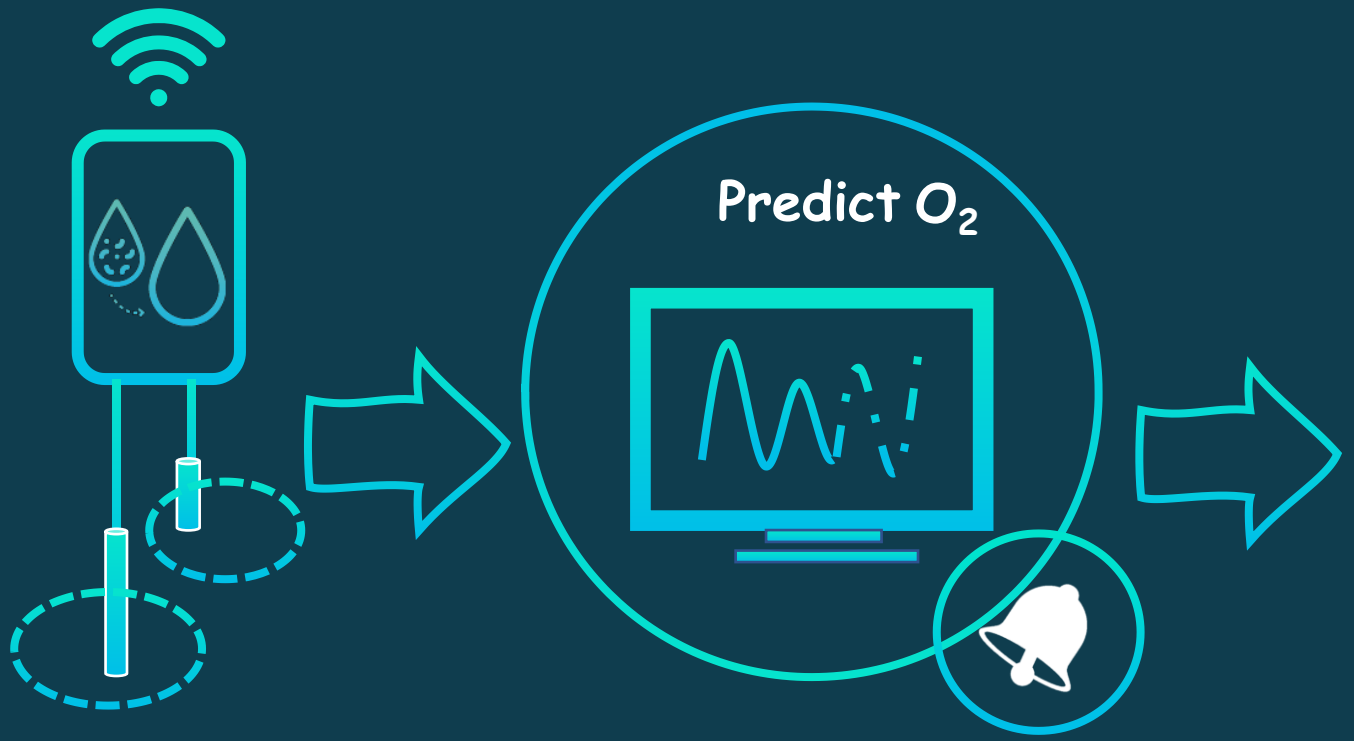
Microbiological Contamination

User Case : Predictive Modeling

- 12 hours forecast for dissolved oxygen
- High and low cases to give the maximum flexibility to the user



User Case : Predictive Modeling



Adaptive algorithm to your site

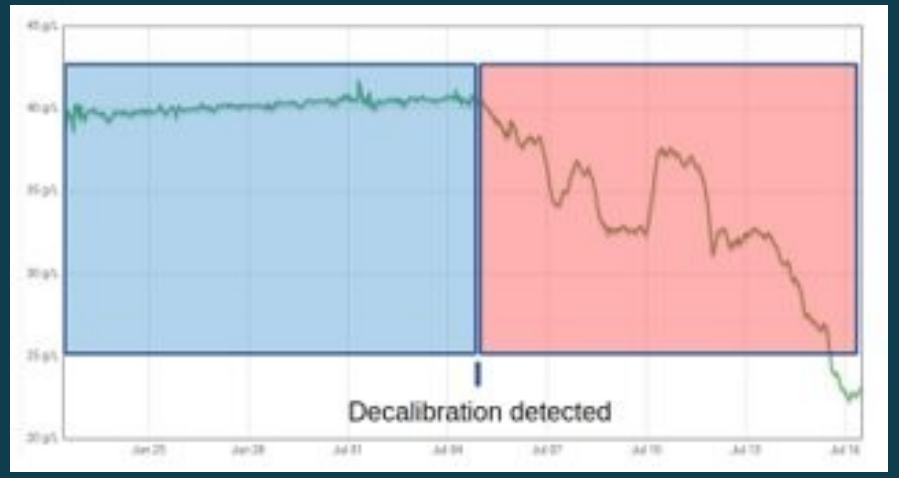
Forecasting updated every 20 minutes

Precise prediction for the next 24 hours

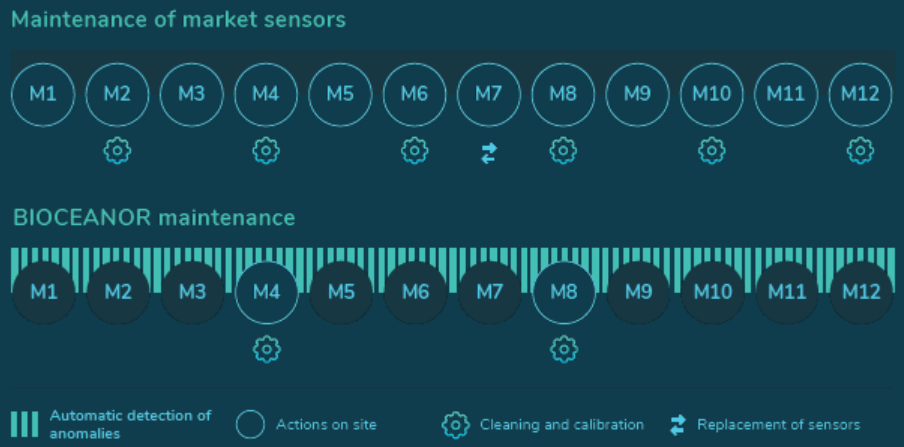
Predictive dissolved oxygen monitoring → Action plan several days ahead → Keep a stable dissolved oxygen environment for the fish → Ensure safety of the production → Reduce stress and avoid potential appetite loss or mortality

Reliable Data

- Ensuring data reliability will ensure a good monitoring and reliable prediction.
- Knowing when a sensor needs to be maintained will help the user save a precious time.
- Maintenance done sufficiently quickly will increase product lifetime.



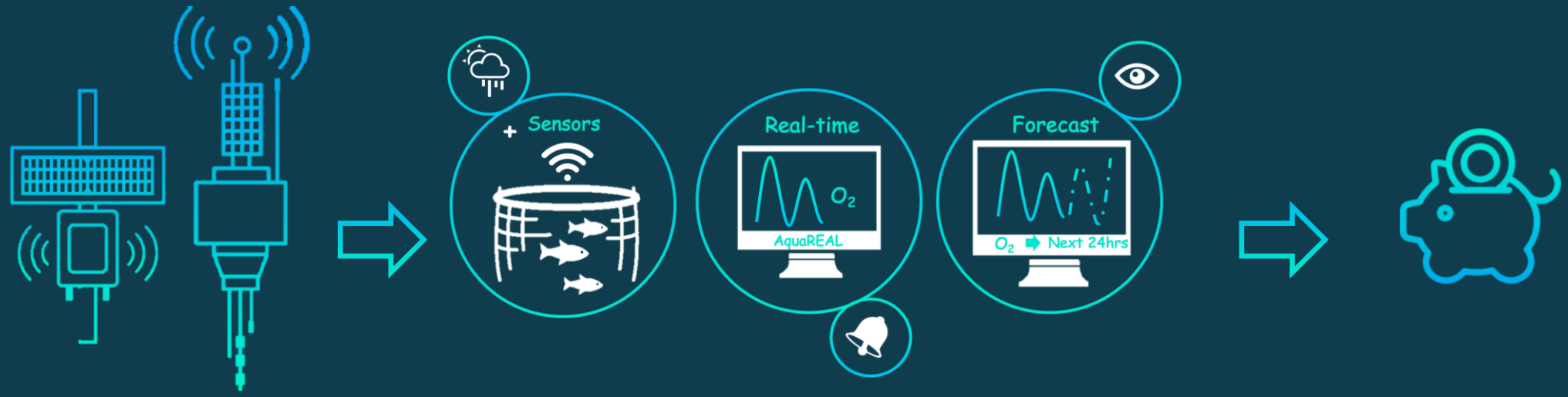
Detecting biofooling or decalibration to alert the farmer



BiOceanOr's Expertise

Bring **REAL TIME AND PREDICTIVE WATER MONITORING TECHNOLOGIES** into aquaculture for decision support to:

- Anticipate critical situations and water contamination,
- Optimize production processes,
- Enhence a sustainable aquaculture and a better traceability.



Measure

Collect real time and continuous data

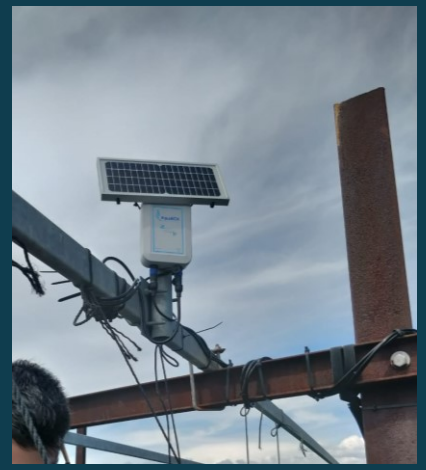
Analyze

Process and run machine learning models

Create intelligence

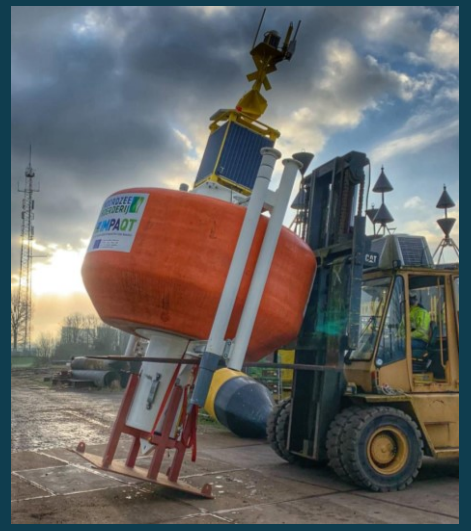
Monitor and predict

Let’s collaborate together







BiOceanOr
Biology For Ocean

Expand your ability to understand water environment through our **connected** and **predictive** solution.

Marilou SUC
Marketing Director
marilou.suc@bioceanor.com
(+33) 764231528