Real time monitoring of water quality in aquaculture systems
Complete visibility of process changes with a turnkey cloud-based solution

Challenge: Monitoring of water quality parameters such as dissolved oxygen (DO), pH, temperature and salinity are critical to ensure that the overall health of a prawn farm pond is maintained. Extreme changes to these parameters can have adverse effects during the grow-out period. At the very least, they can limit prawn growth and reduce the final yield of prawns harvested. In the worst case, they can cause total prawn mortality and significant costs. Typically, water quality data is recorded manually by handheld instruments at crucial time points. Manual sampling is labour intensive, and therefore, the frequency of reporting is limited. It may also be subject to human error, and there is often a time delay between recording and reporting of water quality data.

Process details: CSIRO operates an aquaculture research facility on Bribie Island, Australia. The facility has several large nursery and grow-out ponds for the production of prawns to harvest size. Paddle wheels and diffusion type aerators are installed in the ponds to provide a continuous supply of dissolved oxygen and water circulation. Water quality parameters such as DO, salinity and pH are taken manually via a handheld instrument twice a day (morning and evening). These parameters are used to assess the pond conditions. This
Numerous data visualisation options are available via the NWNI dashboard.

- Increased ability for operators to react to pond condition changes thanks to the availability of real-time data
- Improved ease of data interpretation through the comprehensive data visualisation tools available via NWNI

**Solution components**

Cloud-based monitoring of water quality parameters:
- Netilion Water Network Insights (NWNI), fully configured for aquaculture monitoring
- Memosens® liquid analysis sensors, transmitter and mounting accessories: Oxymax COS81D (DO), Orbisint CPS11D (pH), Memosens CLS82D (salinity) and Liquiline CM444 (transmitter), Flexidip CYA112/CYH112 (assembly), complete enclosure

**Potential benefits of the NWNI cloud based system**
- Operator time savings by automated collection of sensor data
- Increased data availability for forecasting and pattern recognition

Want to find out more about the NWNI dashboard? Scan the above QR code or click here to view an interactive demonstration.