

Fish and Prawn Farming - habitat control



Background

To introduce a digital solution to provide regular data and accuracy in order to control the management of water whilst cutting down on man hours and creating efficient processes.

Our customer, an expert in farming fish and prawns in both fresh and saltwater, were looking to take the next step in developing their processes. Up until contacting us they had been taking measurements of water parameters manually. This process required a lot of manpower, took a long time and was not always accurate. As a result they wanted to change to a system that would enable them to take automatic measurements, gather data for analysis and management of maintenance and water quality issues. They wanted to manage data at their headquarters whilst also having a copy of the data locally.

Our involvement

Based on our conversations with the customer we developed an agreed requirement specification and from this produced a document for the production of a proof of concept system.

The proof of concept system was to provide the following -

- Sensors for the measurement of the following water quality parameters -
 - Dissolved oxygen
 - Nitrate
 - Nitrate
 - Ammonia
 - Total dissolved solids
- An edge gateway for data collation and cloud services

Our approach for the proof of concept was to use individual sensors for each water quality parameter, each sensor was equipped with LoraWan communication. We decided on a LoraWan approach because the technology is proven, robust and met the distance requirements of the project.

In addition to the sensors, we selected a LoraWan enabled edge gateway to manage data collation. This gateway also provided an output for local data display and 4G capability to ensure cloud connectivity.

For the cloud system we decided to use Amazon Web Services (AWS IoT) as it has broad and deep IoT services from the edge to the cloud. AWS IoT is able to bring data management and rich analytics together, it is easy to use and designed for noisy IoT data environments. The AWS platform also offers AI integration enabling the user to create models in the cloud.

In terms of the software we have written an AWS IoT core for the edge gateway to provide compatibility with the AWS IoT platform.

Another reason that we selected the AWS IoT platform was based on data pricing considering the comprehensive roll out of this system.

To find out more or to discuss your requirements, please get in touch

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