WWTP OPTIMISATION ENGINEER

Company Description

The provision of clean fresh water is a serious environmental challenge, and Earth Observation (EO) has become an increasingly important tool to assess the spatiotemporal variability of surface fresh water and to monitor the quantity and quality of water on a regular basis. This is especially the case in territories where existing water information is sparse, difficult to obtain, and variable in content and validity. Monitoring of water quantity and quality is essential in order to characterize waters and identify changes or trends in water over time, or to be able to respond to emerging water problems, such as identification of sediment plumes, harmful algae blooms and red tides. EO is recognized as a reliable and cost-effective technique for describing and quantifying aspects of marine and inland water quality. Using satellite data archives dating back to 2000, it is possible to establish the long-term baseline conditions in water quality for any region of the World. Using near real-time satellite data, it is equally possible to derive the current environmental situation on both the local and regional scale. In AQUARADAR we are a product-service promoted by the startup AQUADAT to transform water quality data into useful information for different agents (Public, Private and Third Sector) OUR WHAT: Actionable water data. Solutions: AQUARADAR = Real Time Water Quality Monitoring Solution based on different data sources (Satellite, Drones, Multiparametric Probe...)

Information

- Deadline: 2022-05-31
- Category: Business
- Province: Bizkaia
- Country: Basque Country
- City: Bilbao / Donostia-San Sebastián

Company

AQUADAT

Smart Water Management

Main functions, requisites & benefits

Main functions

The main objective of wastewater treatment plants (WWTPs) is to remove pathogens, nutrients, organic substances and other pollutants from wastewater. Once these pollutants are partially or completely removed by physical, biological and/or chemical processes, the treated effluent is discharged into receiving water bodies. At present, the knowledge of how to optimise the operation of a WWTP is the responsibility of experienced personnel. This staff is scarce and highly specialised in each installation. Decisions in the face of unforeseen events must be made in a short period of time, at any time 24/24 and 7/7. They can be of the utmost responsibility because a decision failure can lead to a problem in the biological, the heart of the WWTP, which can take weeks of correct decisions to recover its normality and purification capacity. During this period, the performance of the WWTP is not adequate and the quality of the product water that is discharged into the river suffers, with the consequent damage to the flora and fauna downstream of the discharge point and to the environment in general. A study carried out in 2021 by scientists from Utrecht University and the United Nations University concludes that around 359 billion cubic metres of wastewater are produced worldwide each year, equivalent to 144 million Olympic-size swimming pools. Some 48% of this water is currently discharged untreated.

We seek to develop a thesis on optimised automatic WWTP operation from continuous input data in both normal and extraordinary situations (e.g. accidental spills). Relate the results of the mathematical models to the expected situation of a WWTP Break down the input parameters in the data for input to the mathematical model Calculate energy, reagent and other operating costs from data on oxygen requirements, sludge production,... Obtain theoretical formulae relating operating costs to model output data. Improvement of theoretical results with practical examples in real situations. Optimise operating results from the proposed solutions and numerically evaluate the solutions automatically.

Requisites

In AQUADAT team we are proud of our large working experience in the industry, but now, we want to step forward and create a more diverse team. Would you like to join us? Proactive and positive ATTITUDE Management of self and personal skills: Being aware of one's own behaviour and how it impacts on others, improving personal skills to adapt professional practice accordingly. Delivering excellent service: Providing the best quality service to external and internal clients. Establishing genuine and open long-term relationships to improve service levels. Seeking solutions: Taking a holistic view and working enthusiastically to analyse problems and develop viable solutions. Identify opportunities for innovation. Embracing change: Being open to and engaging with new ideas and ways of working. Adapt to unfamiliar situations, changing demands and roles. Effective use of resources: Identify and make the most productive use of resources, including people, time, information, networks and budgets. Engaging with the wider context: Improving your contribution to the organisation by understanding the bigger picture and committing to the organisation's values. Developing yourself and others: Demonstrating commitment to your own continuing professional development. Support and encourage others to