KEYSIGHT TECHNOLOGIES

IoT INNOVATION CHALLENGE

Watsyn

2019 SMART WATER FINALIST

Watsyn: Better Monitoring of Our Waterways to Ensure a Better Future

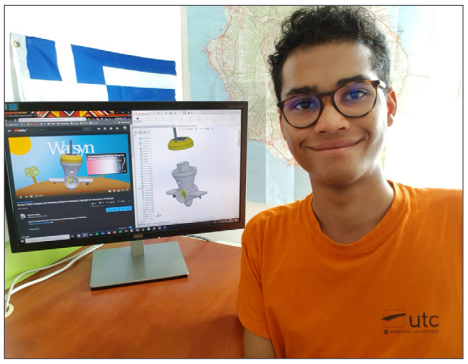
Université de Technologie de Compiègne student creates a water monitoring device that can operate autonomously for years or even decades to detect impact of human activities

Raphael Jaures, a student at the Université de Technologie de Compiègne (Sorbonne Universités) in France, believes that the next decades will be crucial for humanity. “As an unprecedented ecological crises emerges, humanity has to give it its best in order to preserve our planet,” Jaures said. “We will either thrive and flourish or we will fail and face disasters.”

“Technology not only helps but is necessary to humanity,” Jaures added.

To help make change, Jaures devised a sophisticated sensor network plan called Watsyn to protect the planet’s waterways—which he believes is one of the most crucial challenges for mankind in this century. The concept—which was named the Smart Water finalist for the EMEAI region in the Keysight IoT Innovation Challenge— will analyze and detect the impact of human activities on waterways, which range from growing cities to illegal dumping.

Watsyn was named as the Smart Water finalist for the EMEAI region in the Keysight IoT Innovation Challenge. The unit, equipped with a solar panel and a water turbine, can produce its own energy. Its network of smart probes can be distributed in waterways to measure temperature, pH, conductivity and turbidity using sensors currently available in the market. The device also measures water flow with its water turbine, tracking environmental changes and revealing localized changes in the ecosystem.



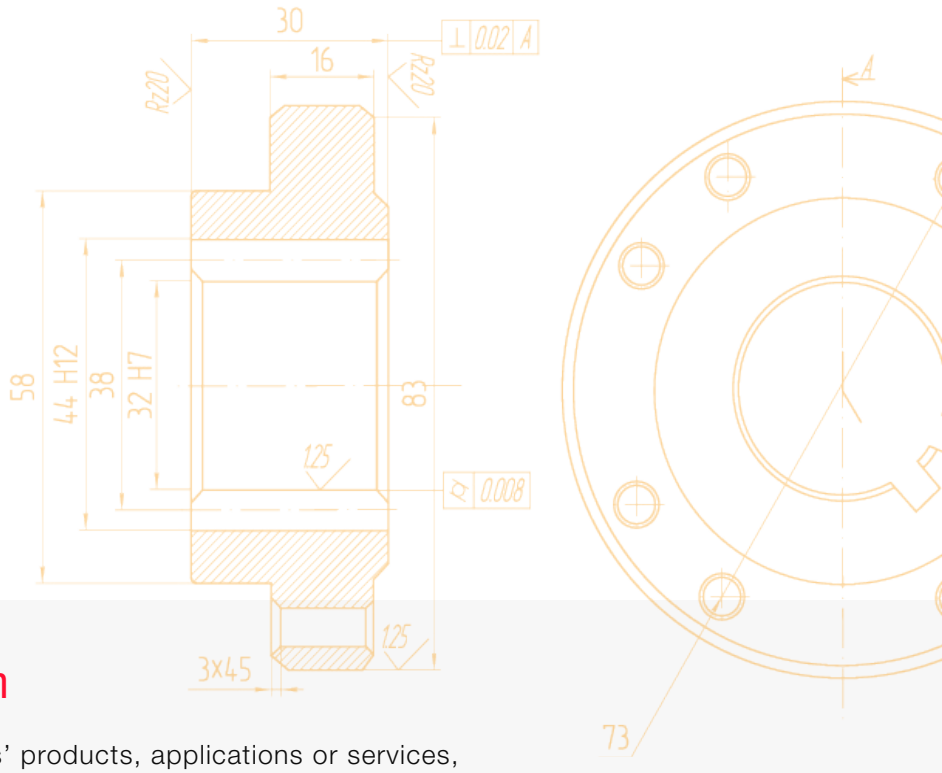
Raphael Jaures
Raphael Jaures, a student at Université de Technologie de Compiègne (Sorbonne Universitiés) in France, is the EMEAI finalist in the Smart Water challenge for his entry, Watsyn: Better Monitoring of Our Waterways to Ensure a Better Future.

Watsyn performs spectrophotometry analysis using a duct that goes through the unit and two servo-motors to close the entrances. In the darkness, an RGB LED emits a range of wavelengths and a photocell measures the intensity received. The device can autonomously and quickly perform a spectrometry of water. This could help to better detect contaminants and improve the control of the quality of waterways.

Watsyn relies on LoRa technology for its long-range communication. Since the unit operates for only a few seconds each 10 minutes, the low-power device can perform for 20 days without requiring any input of energy. Watsyn would be able to operate autonomously for years or even decades.

Using data from Wastyn, the public could stand to benefit from quick notifications of everything from illegal dumping to degradation of water quality. This could help people and animals avoid illnesses. It could also empower the public water services to better process resources by anticipating the flow of degraded water quality, Jaures said.

"As an unprecedented ecological crises emerges, humanity has to give it its best in order to preserve our planet," Jaures said. "We will either thrive and flourish or we will fail and face disasters."



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