Title: “Efficiency is the way to go: get to know Enki!”

Abstract:

Imagine a 130-hectare campus with farmland, farm-animals, gardens, buildings and about 3000 vehicles and 10,000 people each day. Now picture that this campus has serious water supply limitations. Assuming that water for human consumption is a priority, what would you be willing to do? Let the crops expire? Allow gardens to wither away? Maybe let some animals die?

It’s time for Enki: an integrated platform that uses new information and communications technologies, such as the Internet of Things paradigm, Big Data and Machine Learning for real-time data acquisition, transmission, management-information extraction and remote decision-support systems. It provides tools for achieving an intelligent real-time resources management. Besides monitoring CO2, CO, VOC, PM10, temperature, relative humidity and other physical quantities on both indoor and outdoor spaces, this solution also collects environmental data, such as atmospheric pressure, wind velocity and precipitation. Moreover, it is able to acquire power, water and gas instant qualities and consumption, as well as waste production, anywhere within a campus.

Why is Enki different? Because it is a novel approach to attain sustainability, able to automatically extract useful information from diverse data sources - based on artificial intelligence and on multi-temporal consumption models - for daily management. Furthermore, it has a collaborative component to draw people feedback and to show each one how to contribute to a more sustainable world. As an example, Enki will manage gardens and crops water needs by irrigating only where and when is required, while assuring that water is available for the remainder foreseen needs.

This platform is deployed in UTAD’s (Portugal) campus, where it was able to collect more than 150 million data and is supporting the adoption of measures to have more efficient, cost-effective and sustainable management practices.

Enki is here to help leverage the Planet’s sustainability.

Biography:

José Pedro Guerra Brito graduated in Computer Science at the University of Trás-os-Montes e Alto Douro (UTAD), Portugal, in 2016 with a classification of 16/20. Currently he is a Master's degree student in Computer Science at UTAD, and a research fellow of the Project ECO@UTAD.

He presented two communications in international congress. His research focuses on the creation of intelligent solutions using new ICT technologies such as the Internet of Things paradigm, Big Data, Data Mining and Machine Learning for resource management and institutional sustainability. His focus is to use his computer skills to make the world more sustainable and a better place to live.