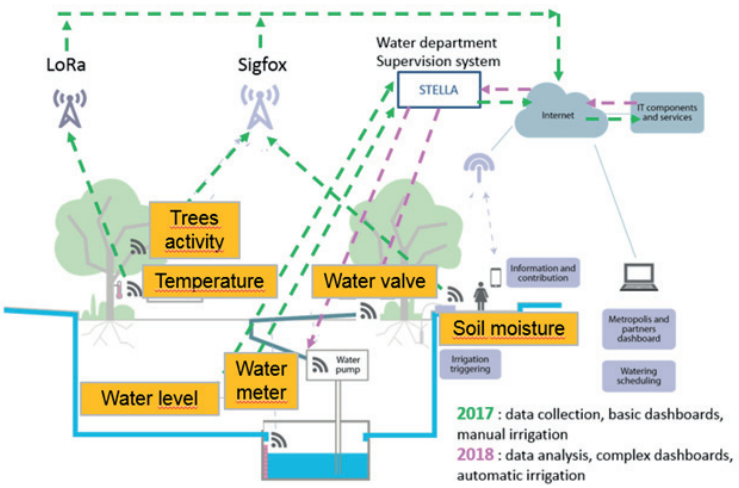
Increased Comfort On Hot City Days

Challenge

The Métropole de Lyon is growing in population and also experiencing a rapid change in climatic conditions with more and more very hot days, and the trend expected to increase with global warming. To mitigate heat waves Greater Lyon wants to strengthen the natural refreshment capacity of trees by using various sensors and actuators, existing data sources and rainwater stored in a basin under the street to provide smart watering based on the Internet of Things technologies.

Solution

The solution includes a new citizen portal to enable everyone to be informed about heat conditions and heat waves, along with access to data to support new applications and services. This is combined with a smart irrigation system that boosts the natural power of refreshment from trees, particularly during heat wave periods where watering is triggered independently for each sector of streets based on numerous data collected about air temperature, soil humidity, weather forecast, rain water availability and other parameters.



bIoTope Technologies

The solution uses bIoTope technologies to combine sensor data from air temperature, water level monitoring, soil conditions, tree activity and other sources for determining when specific irrigation valves are actuated for watering trees in different street segments. Using a bIoTope data wrapper for different data sources enables easy analysis of cross-data values and to use the data to trigger specific actions within the IoT system. A bIoTope O-MI Node stores the data collected by the various sensors and systems. The O-DF technology from bIoTope structures the data in a standardised format, which provides the input to make decisions for the irrigation actuators.

bIoTope

SMART CITIES PILOT CASE STUDY

www.bIoTope-project.eu

bIoTope Benefits

- Easy integration of various types of sensor data to support decision making for IoT systems
- Scalable data collection and device management capable of supporting an IoT system spanning an entire smart city
- Disparate data content made accessible an analysable by multiple IoT systems
- Open platform for additional IoT systems and applications to access and exploit collected environmental data

"bIoTope technologies make it possible to quickly integrate sensor data and networks to create smart decision making systems for improving the comfort of citizens during heat waves in the city of Lyon."

Emmanuel Gastaud
Greater Lyon Urban Area Authority

"Rapid development and support for a wide range of data sources and control mechanisms is one of the strengths of bIoTope in creating innovative IoT systems."

Prof Kary Främling
Aalto School of Science and Technology/bIoTope Project Coordinator

The bIoTope project receives funding under the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No. 688203.