

SmartDrop – IoT based smart and efficient crop irrigation solution



CONSORTIUM

Seacon Europe (Hungary) (<https://www.seacon.hu/en/>)

ISURKI (Spain) (<https://www.isurki.com/indexE.html>)

THE CIRCINWATER PROJECT

SmartDrop is an IoT SMART AND EFFICIENT CROP IRRIGATION SOLUTION that addresses the enhancement of the water efficiency of the irrigation networks used in the AGRI-FOOD SECTOR to make them more SUSTAINABLE AND RESILIENT IN THE FACE OF EXTREME EVENTS, particularly severe and prolonged drought episodes, as a result of the effects of climate change.



OBJECTIVES

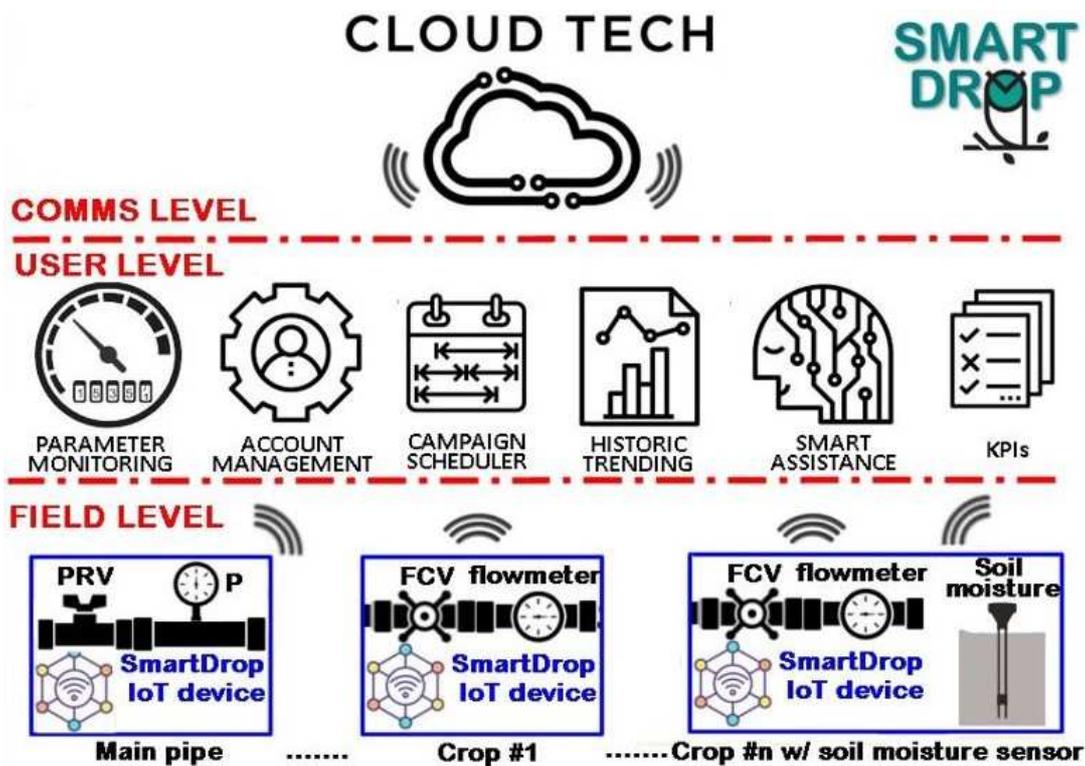
The objective of the SmartDrop project is to offer a COMPREHENSIVE SOLUTION specifically developed for the agri-food sector that guarantees:

- *MAXIMUM EFFICIENCY IN IRRIGATION, eliminating the current waste of water.*
- *OPERATION WITHOUT EXTERNAL POWER SUPPLY, eliminating the need for connection to the electricity grid or the installation of alternative energy sources.*
- *The maximum ENVIRONMENTAL SUSTAINABILITY of the solution by not using batteries.*
- *The possibility of being used with BOTH NATURAL WATER AND REUSED WATER from MANURE AND SLURRY processing plants from LIVESTOCK FARMS.*
- *A CLOUD APPLICATION that optimizes the scheduling of irrigation sequences and provides information on the level of water efficiency of the infrastructure.*

ACTIVITIES

To achieve these objectives, the project will undertake the following activities:

- The ADAPTATION AND MODIFICATION OF THE CURRENT IOT CONTROLLERS of one of the technological partners to provide it with the following improvements:
 - Integration of Energy-harvesting technology to make the IoT device energy self-sufficient
 - Adaptation to be able to control any flow and pressure regulation valve on the market
- DEVELOP A SOFTWARE APPLICATION in the cloud that offers all the necessary utilities to improve the management and efficiency of irrigation networks.
- IMPLEMENT THE SOLUTION in a fruit tree crop for 8 months to validate and optimize the development through a pilot project.



EXPECTED RESULTS

- Reduction in WATER CONSUMPTION: 4440~6240 m³/ha/year
- Reduction in the USE OF CHEMICAL FERTILIZERS: 6926~9734 kg/ha/year
- Reduction in GHG EMISSIONS: 67~94 Kg-N₂O/ha/year