

# INTELLIGENT IRRIGATION SYSTEM FOR LOW-COST AUTONOMOUS WATER CONTROL IN SMALL-SCALE AGRICULTURE



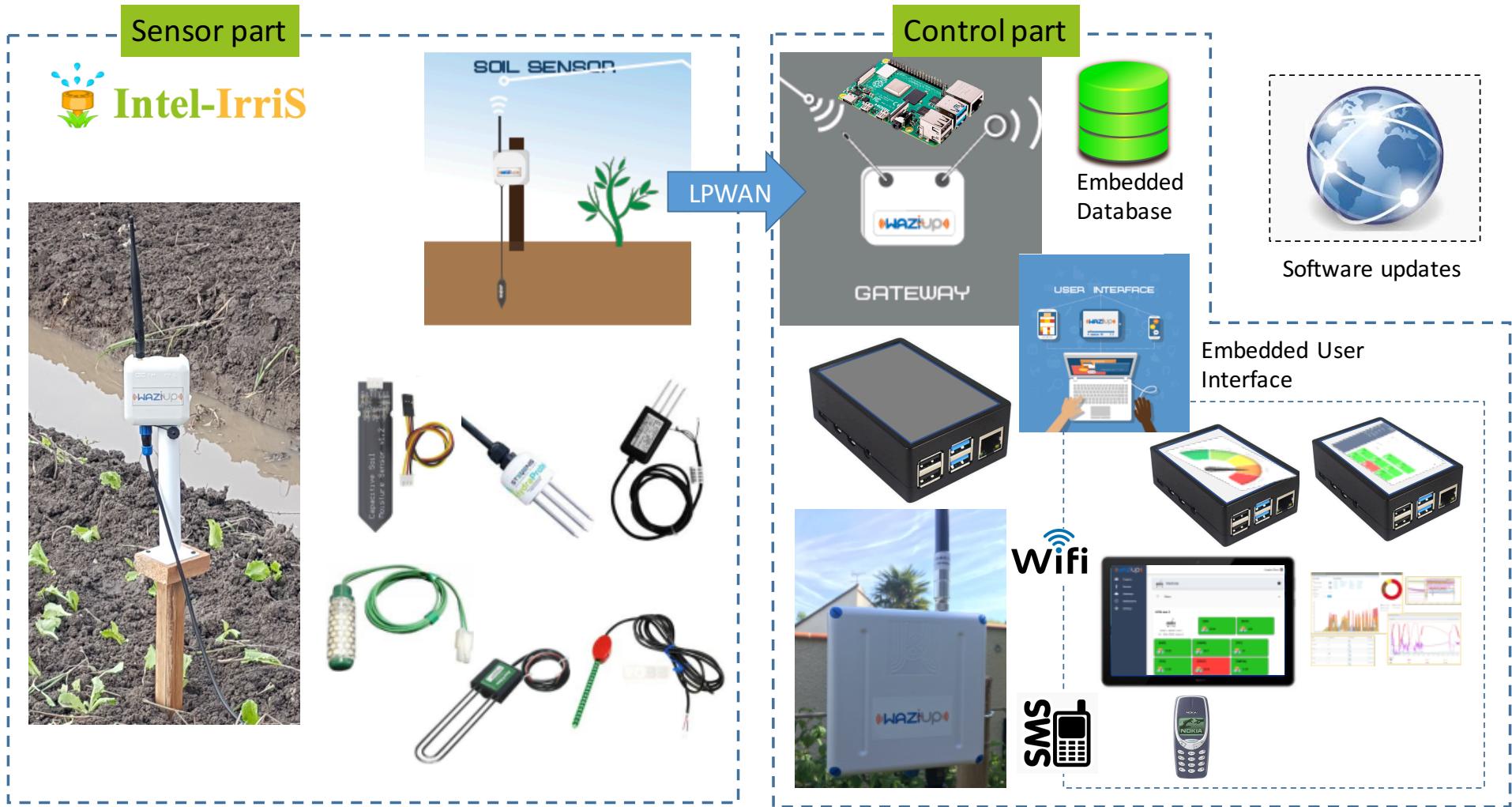
## Building the Intel-IrriS IoT platform Part 1: soil sensor device



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# Review: Technology components



# Review: Low-cost sensors



- Build on low-cost, low-power IoT expertise
- Increase accuracy of low-cost sensors by automatic and remotely controlled procedures for advanced calibration
- Enable deployment of several complementary low-cost sensors
- Include agricultural models / knowledge with corrective & predictive analytics

# Review: Smart embedded control

- Build on low-cost embedded & open IoT gateway expertise
- Implement the “Intelligent Irrigation in-the-box” with "plug-&-sense" approach
- Model complex water-soil-plant interaction
- Embed Decision Support System (DSS) and disruptive Artificial Intelligence (AI)
- Integration of various knowledge streams
- Fully autonomous

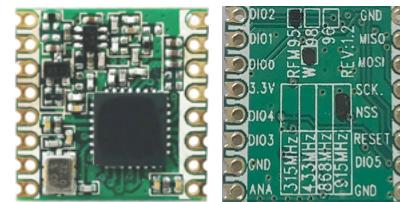
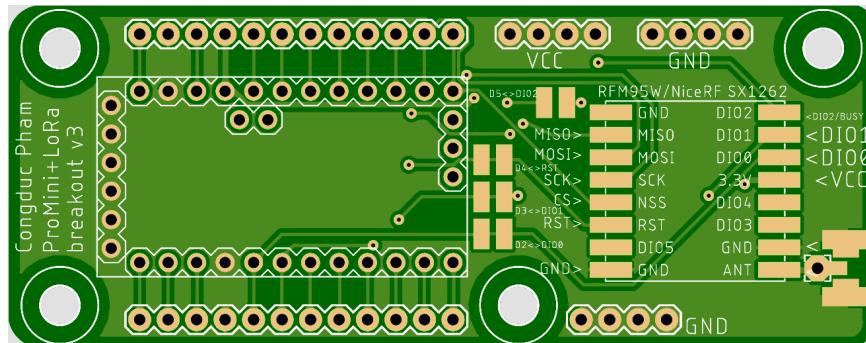


# Review: Starter-kits

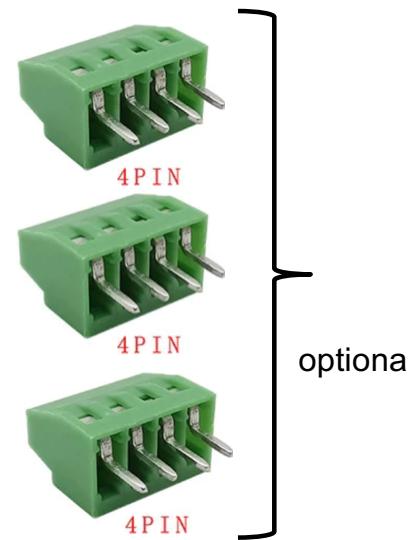
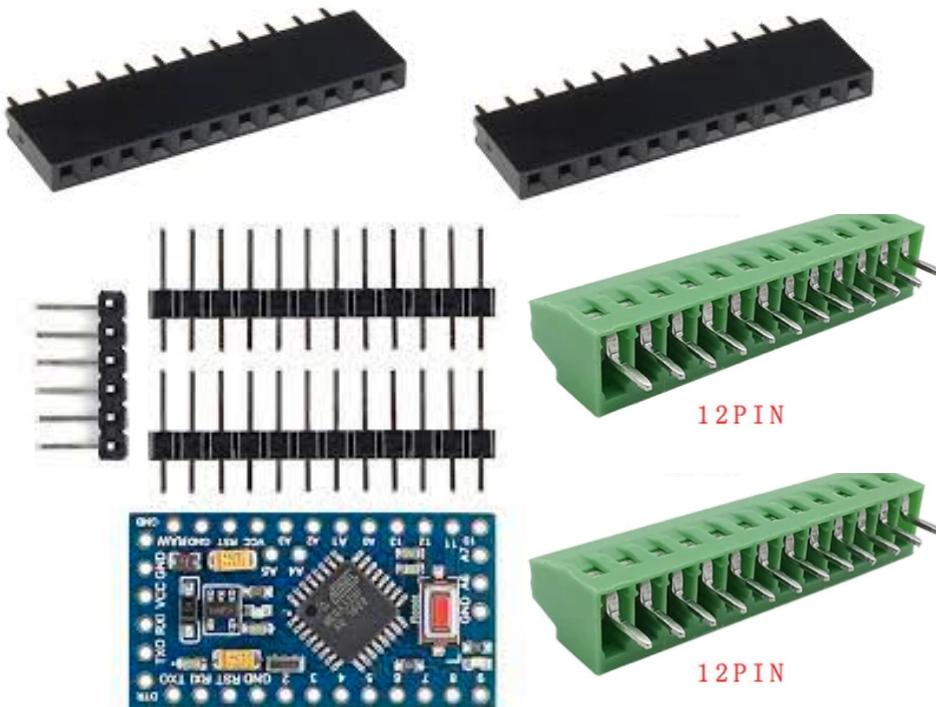
- "Intelligent Irrigation in-the-box", "plug-&-sense"
- At least 100 starter-kit will be distributed



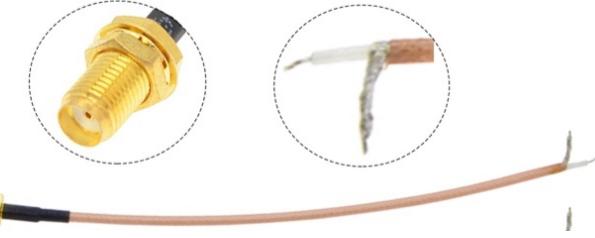
# Soil sensor: electronic parts



RFM95W (868MHz)  
RFM96W (433MHz)  
NiceRF SX1262 (868MHz)  
NiceRF SX1268 (433MHz)

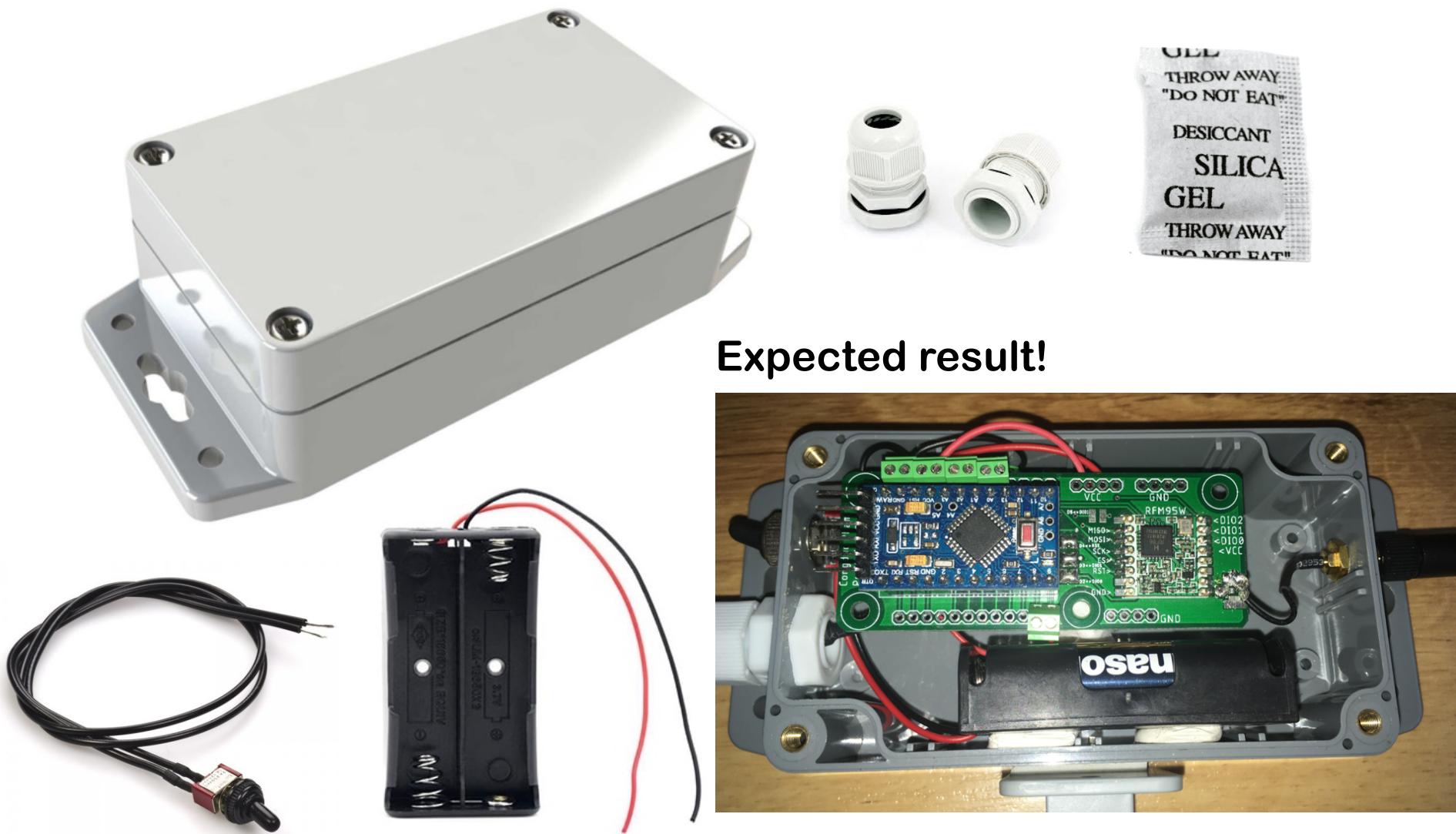


SMA  
female

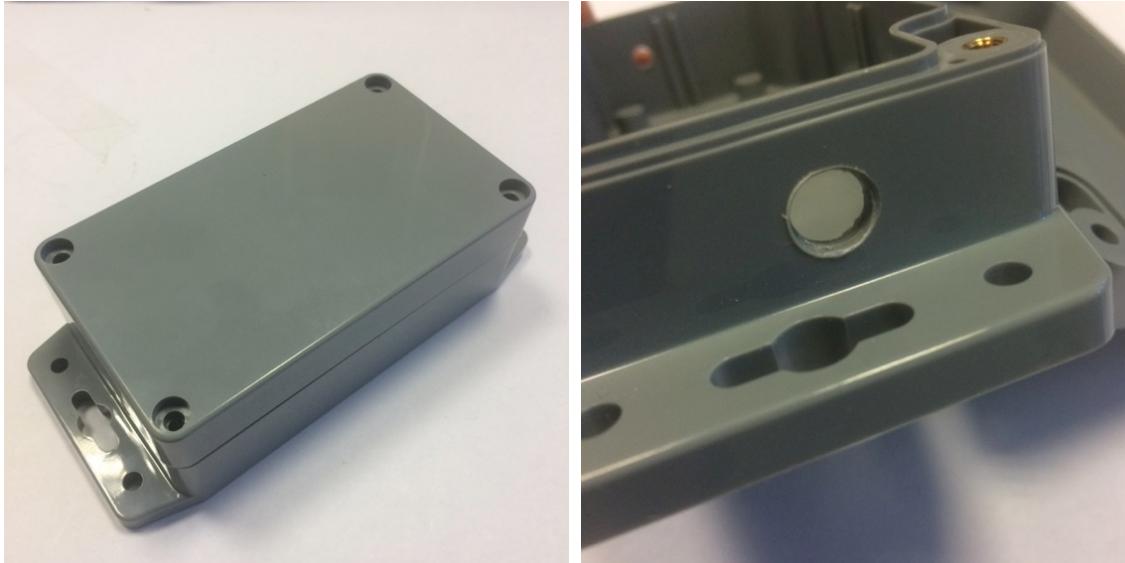


SMA  
male

# Soil sensor: casing parts & integration



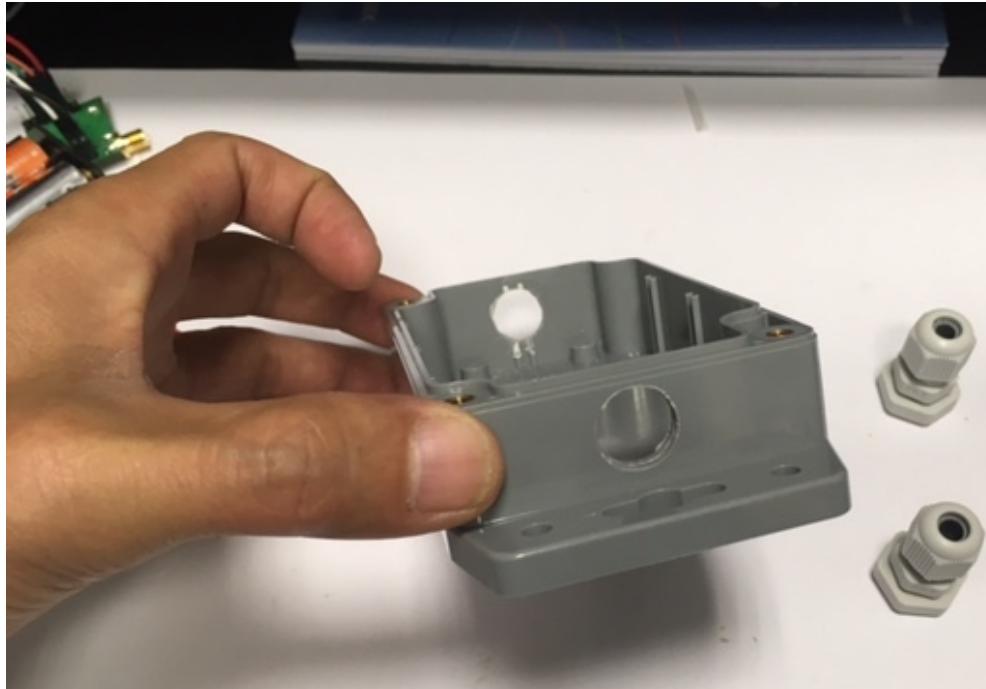
# Get a case for outdoor usage



Here, it is an IP65 box which dimension is 115 x 65 x 40mm.

First, drill a 7mm/8mm hole for the SMA female connector.

# Installing your own cable gland



Drill a hole depending on the gland diameter (here PG7, 12mm, so a hole of 13mm)

