INTEL-IRRIS

Intelligent Irrigation System for Low-cost Autonomous Water Control in Small-scale Agriculture

Intel-IrriS

PRIMA
PARTNERSHIP FOR RESEARCH AND INNOVATION
IN THE MEDITERRANEAN AREA

Intelligent Irrigation System for Low-cost Autonomous Water Control in Small-scale Agriculture

Intel-IrriS

# Building the INTEL-IRRIS LoRa IoT platform
Part 4: the INTEL-IRRIS Irrigation WaziApp

Prof. Congduc Pham
http://www.univ-pau.fr/~cpham
Université de Pau, France

PRIMA
PARTNERSHIP FOR RESEARCH AND INNOVATION
IN THE MEDITERRANEAN AREA

UNIVERSITÉ DE PAU ET DES PAYS DE L'ADOUR

LIUPPA

WAZIUP
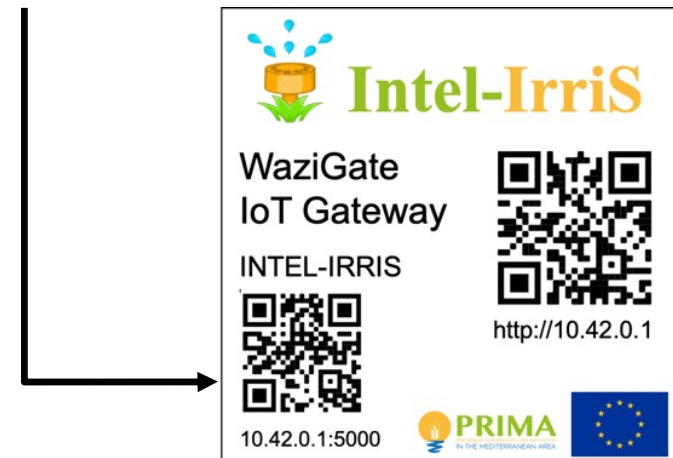IoT – from idea to reality
WAZIhub

INTEL–IRRIS Irrigation WaziApp

- The INTEL-IRRIS Irrigation WaziApp (IIWA) is an embedded application running on the INTEL-IRRIS gateway itself
- It is included in the starter-kit to implement the "intelligent Irrigation in-the-box" & "plug-&-sense" approach
- Its objective is to enhance the irrigation indication by applying sensor calibration models with soil/plant/weather parameters

3
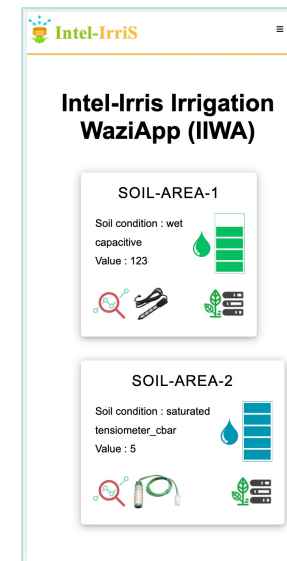
Connect to IIWA

- First, connect to INTEL-IRRIS gateway WiFi which should look like WAZIGATE_XXXXXXXXXXXX
  - Password is loragateway
- Otherwise, with the OLED screen, a QR code for automatically joining the WiFi network is periodically displayed for 10s
  - scan the displayed QR code with a smartphone to connect to gateway's WiFi
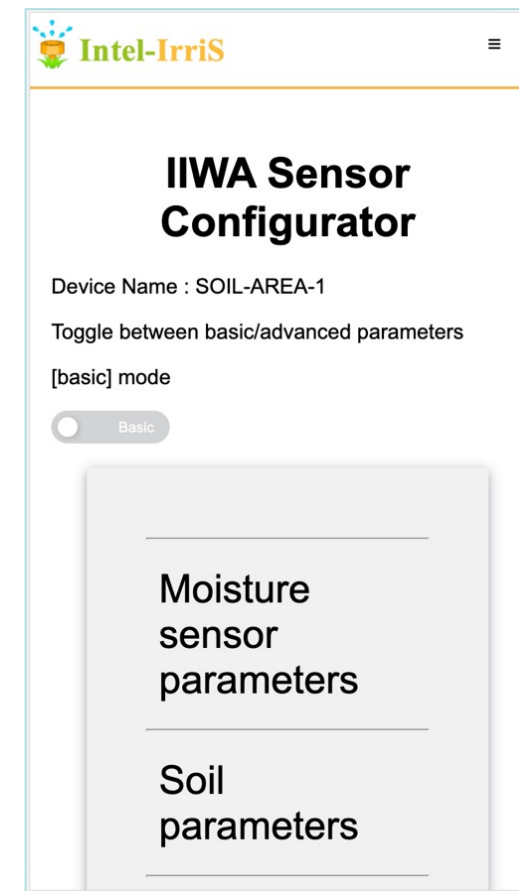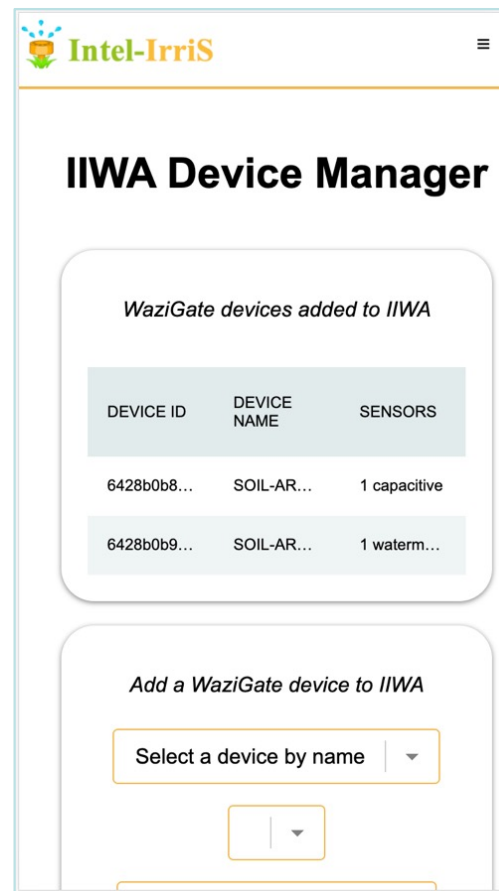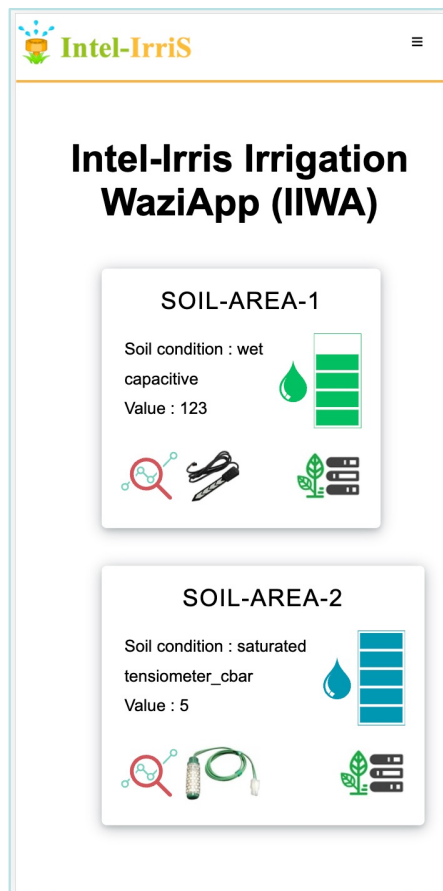- Then, scan the static QR code on the gateway sticker to connect to the INTEL-IRRIS Irrigation WaziApp on : http://10.42.0.1:5000

WAZIGATE_DCA6325C2A7A

4

IIWA main screens
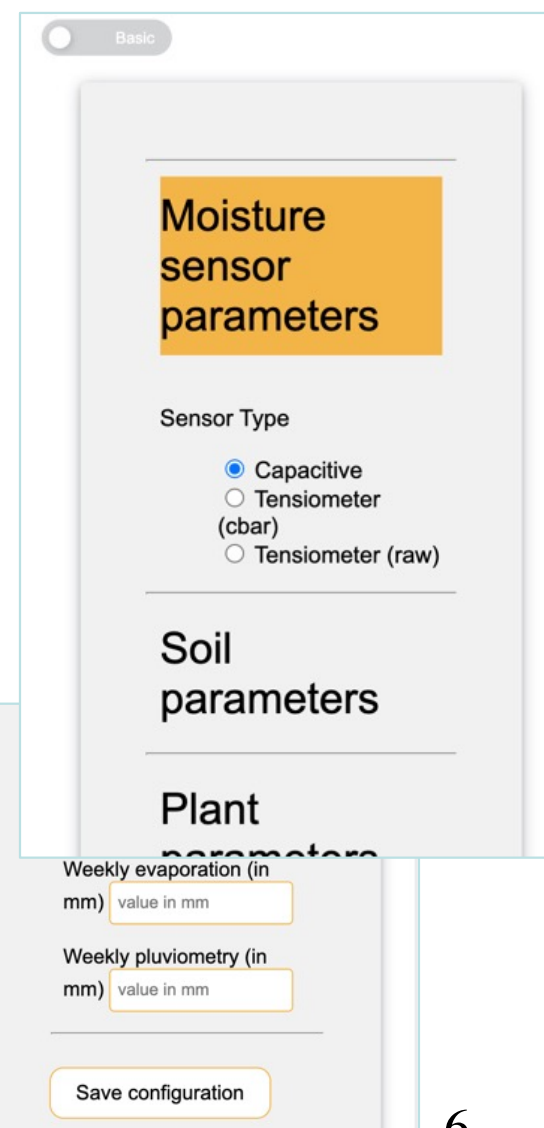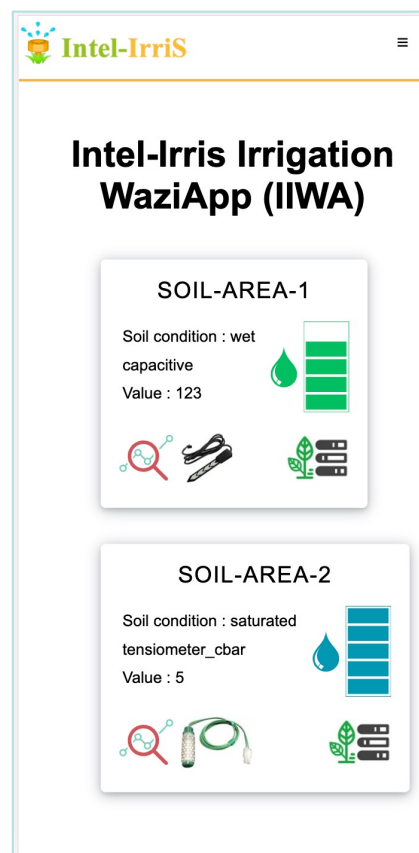
◉ Dashboard, Device Manager and Sensor Configuration

Sensor configuration

- To enable IIWA to calibrate the sensor, the minimum information is to provide the sensor type
- From the Dashboard, go to Sensor Configuration (🌱▤) and select the Moisture Sensor Parameter menu
- Then, select "Capacitive" for instance
- Scroll to the bottom and click on "Save configuration"

DEVICE NAME & ID ARE ONLY INDICATIVE

6

List of advanced parameters

Basic

More parameters will be integrated in IIWA during the project
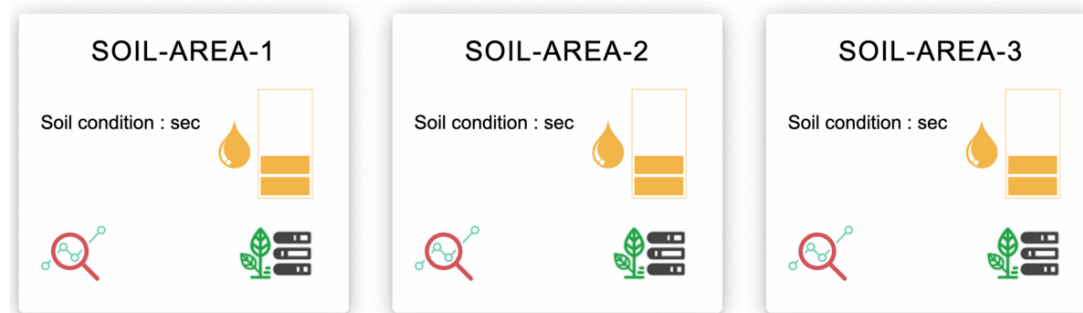
Advanced

7

IIWA dashboard

- The dashboard mainly show the soil condition using a graphic display with 5 horizontal bars
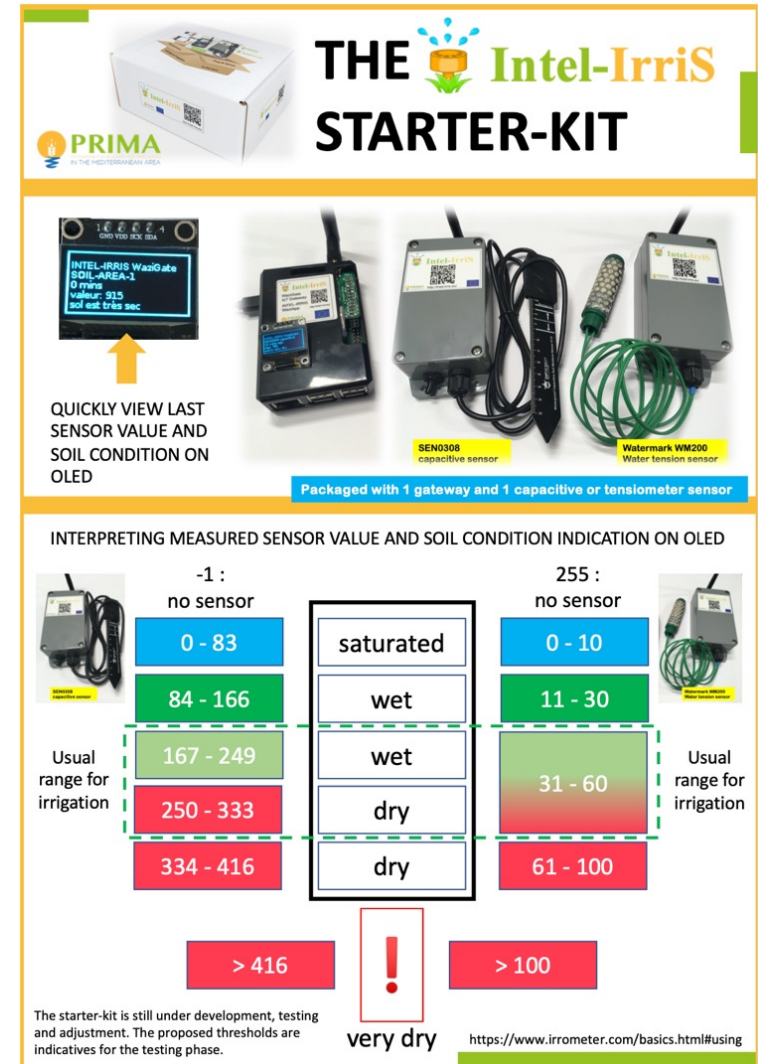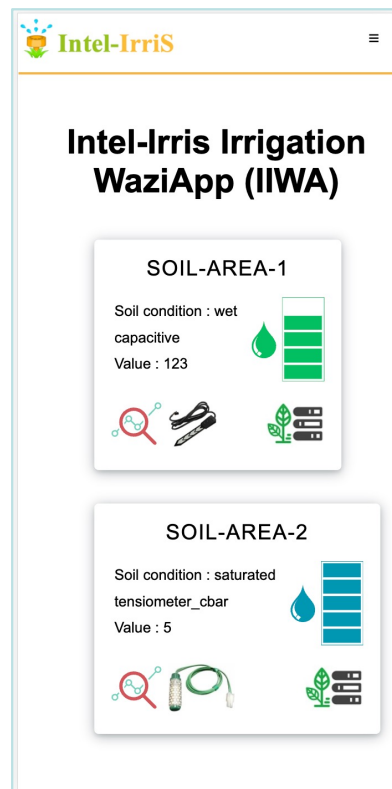
First IIWA demo at Mostaganem event

- March 7th, 2023
- Real-time demo of soil sensor + IIWA

Prof. Congduc Pham
http://www.univ-pau.fr/~cpham

Indication on the OLED screen

- IIWA monitors devices that are added to the IIWA application and only process sensor data from sensors that have been configured – i.e. at least the sensor type must be selected

- When the device/sensor has been properly configured then "IIWA" text is shown on the summary screen associated to the device

IIWA is active. Irrigation indication "très sec" (very dry) reflects the soil condition

- If the irrigation indication computed by IIWA is older than the received time of the last value from the device then "IIWA" text will not show anymore, indicating that the irrigation indication may not be accurate
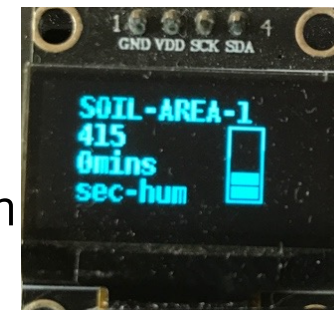
IIWA is NOT active. Irrigation indication "sec-hum" (dry-wet) does not reflect correctly the soil condition as sensor type and soil type are not taken into account

- This can happen if IIWA application is not running for some reasons. In this case, try to reboot the INTEL-IRRIS gateway if you are sure that device/sensor configuration has been performed properly