

FIWARE  
**Global  
Summit**

# Smart Data Models

AgriGateways: vertical domain applications based on FIWARE  
15-8-2022

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Leading  
the digital  
transformation

OPEN SOURCE  
OPEN STANDARDS  
OPEN COMMUNITY







Smart  
Data Models

Smart Data Models in action!  
AgriGateways: vertical  
domain applications  
based on FIWARE



# FIWARE AgriGateways

Open-source API for IoT data gathering  
in Agriculture

[Request more information](#)

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# Smart AgriGateway services



Hardware integrations



Data collection



Data visualization



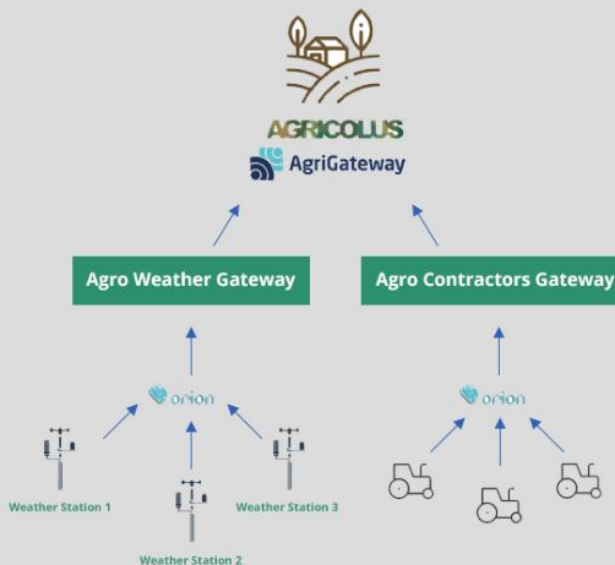
API services

## FIWARE AgriGateways

AgriGateway is a **suite of open source cloud applications based on FIWARE agrifood technologies**. Designed for farmers, agronomists and agricultural consortia, it ensures interoperability between a wide range of agritech hardware solutions, available on the market and provided by different vendors.

It is made up of two modules, an **Agri Contractor Gateway** that allows integration with agricultural machinery, by collecting and visualizing farm machinery data, and the **Agri Weather Gateway** that allows visualization of data from weather stations belonging to various providers.

The technology developed offers a suite of APIs able to integrate external applications, while maximizing applications' portability.





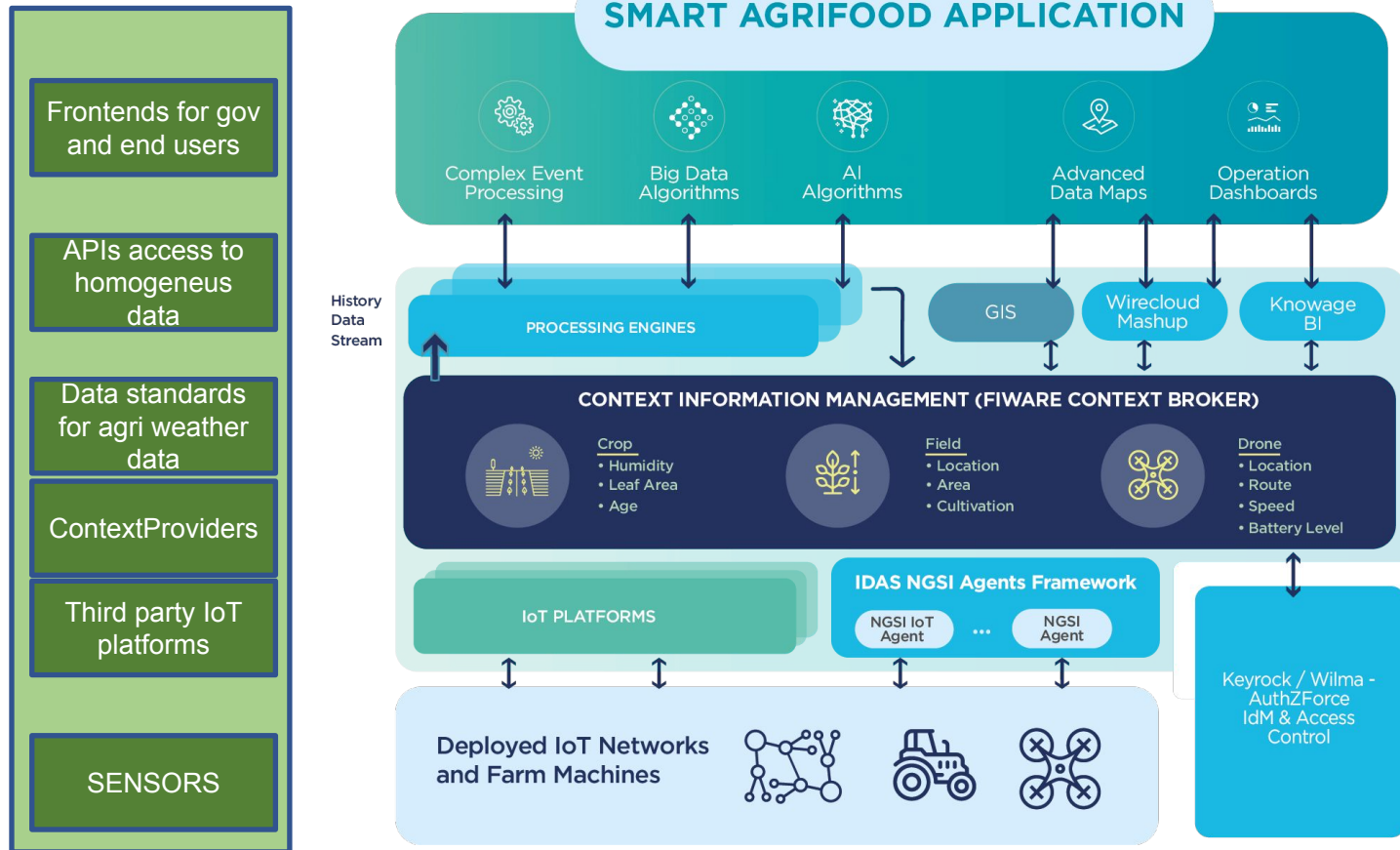


# FIWARE SmartAgriFood Vertical Domain Application

an example of complete open source applications  
Integrated on the FIWARE architecture



# FIWARE AgriWeather Gateway





AgriGateways are a network initiative!

So far this initiative has been promoted by

The logo for AGRICOLUS, featuring the word in a bold, sans-serif font with a green-to-brown gradient.The logo for FIWARE, consisting of a stylized blue and white circular icon above the word FIWARE in a blue, sans-serif font.The logo for IOF 2020, featuring the letters IOF in a stylized font with a green and blue circular icon, and a small brown circle with the text 2020.



# Agri Weather Opportunity

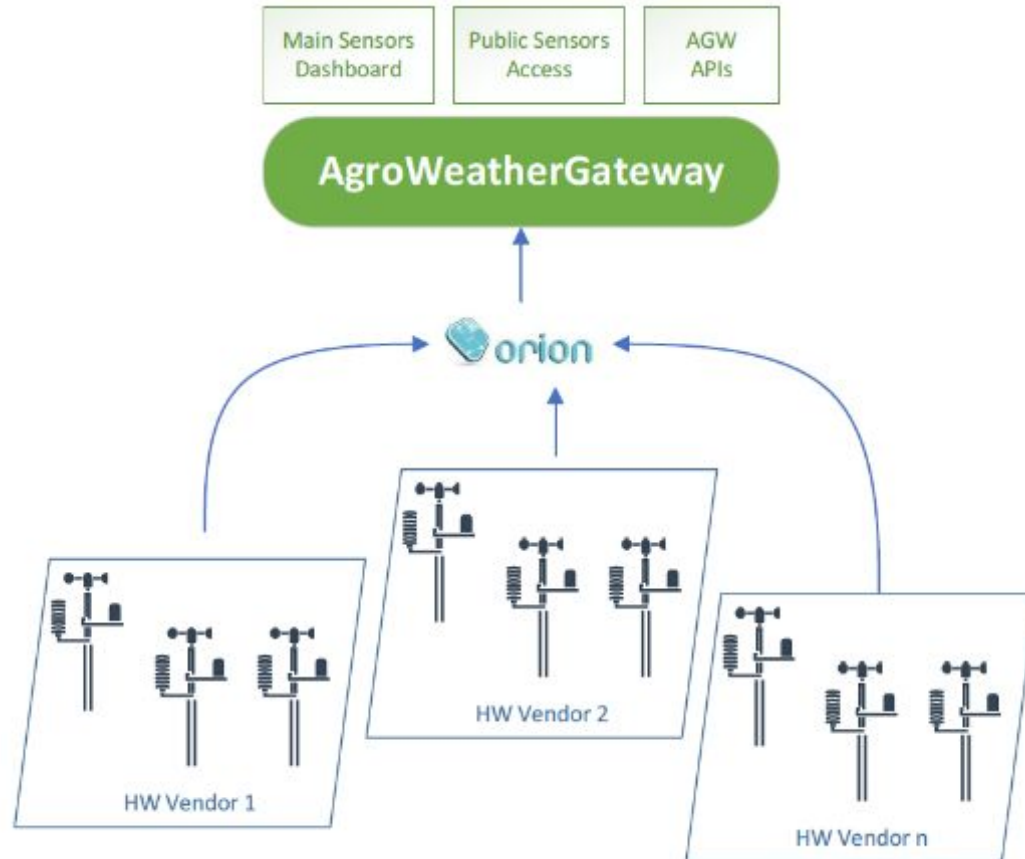
**It's a common need among PA and agricultural ecosystems**

**Solution values:**

- Data harmonization done with NGSI-LD Data Models (updating Observed Data Model)
- Context Providers for at least 3 main sensors producers, service definition
- Authentication/Authorization for sensors with group policies
- APIs for data access
- Admin frontend with overall sensors dashboard, superAdmin for hw setup
- End user portal that will have access to data
- VM bundle with the entire solution ready for government implementation



# AGRO Weather Gateway





# AGRI weather Gateway layers

1

## Main web application

Weather Stations  
Web map

Stations Charts and data  
visualization

Weather Sensors management

Government and farmers  
associations

2

## APIs

Historical weather data

Nearest data geo-search

Weather Station data updates

Users management

Platforms and  
applications

3

## Public web application

Public SignUp (moderated?)

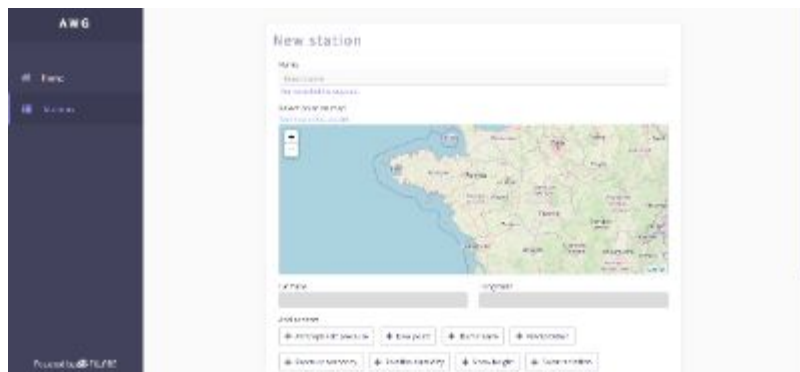
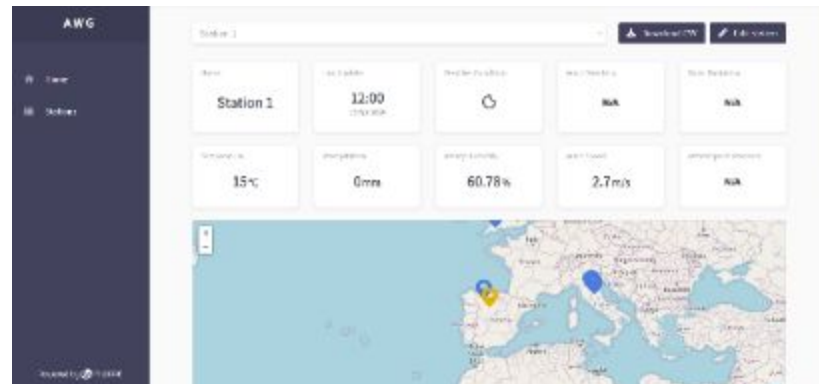
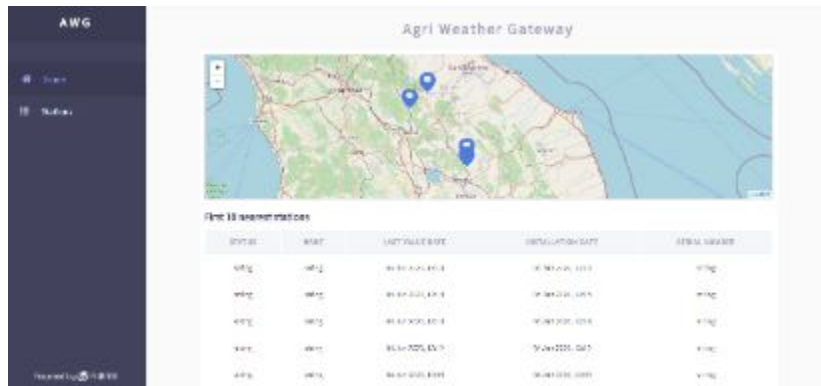
Sensors search and favorites

Users management

Farmers and other  
agricultural stakeholders



# AGRI Weather Gateway





## Implemented Data Models

- dataModel.Weather : used for describe entities useful for dealing with weather data.
  - WeatherObserved
  - WeatherForecast



# Proposal for Extended Data Models in agricultural domain

- **AgriWeather Measures:**
  - LeafWetness
  - WatermarkSoilMoisture
  - Ground temperature and moisture at different depths
- **Improving details on domain-specific Entities:**
  - AgriCrop
  - AgriParcel
  - AgriParcelOperation
  - AgriSoil





Thank You!

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**Thanks!**

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