

# Monitoring water-flooded areas for agriculture and environment



César Roda Neve (M3 Systems)



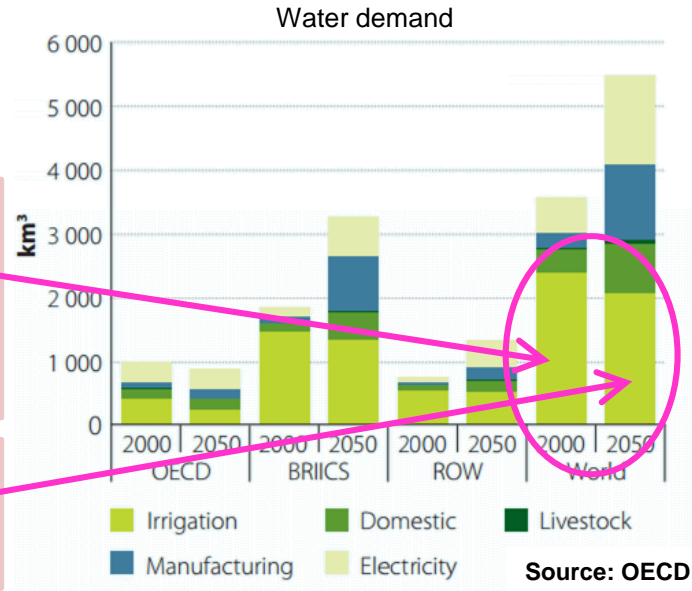
# Water is a limited resource



## Water demand will grow by 45% by 2030

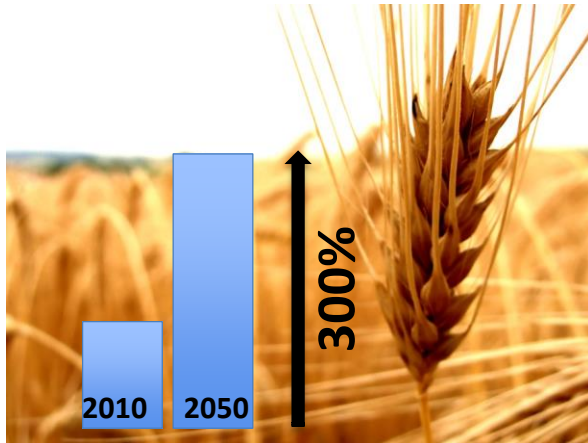
**Agriculture** is the biggest freshwater consumer (70% of all freshwater)

And **water shortage** will reduce its availability



## Irrigation doubles land productivity

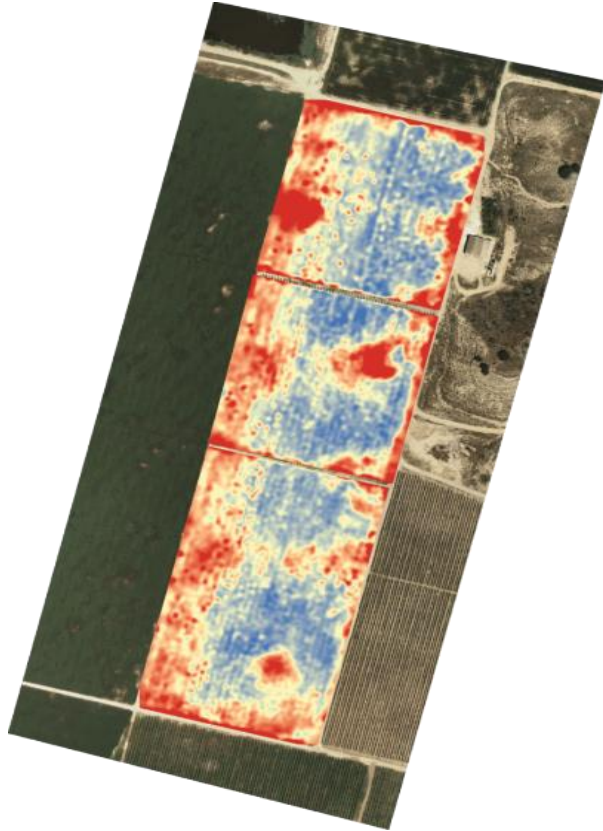
- 40% of the global harvest is produced using only the 20% of the world's croplands that are irrigated



World Food Production Needs

**MORE CROP PER DROP**

# Soil moisture monitoring

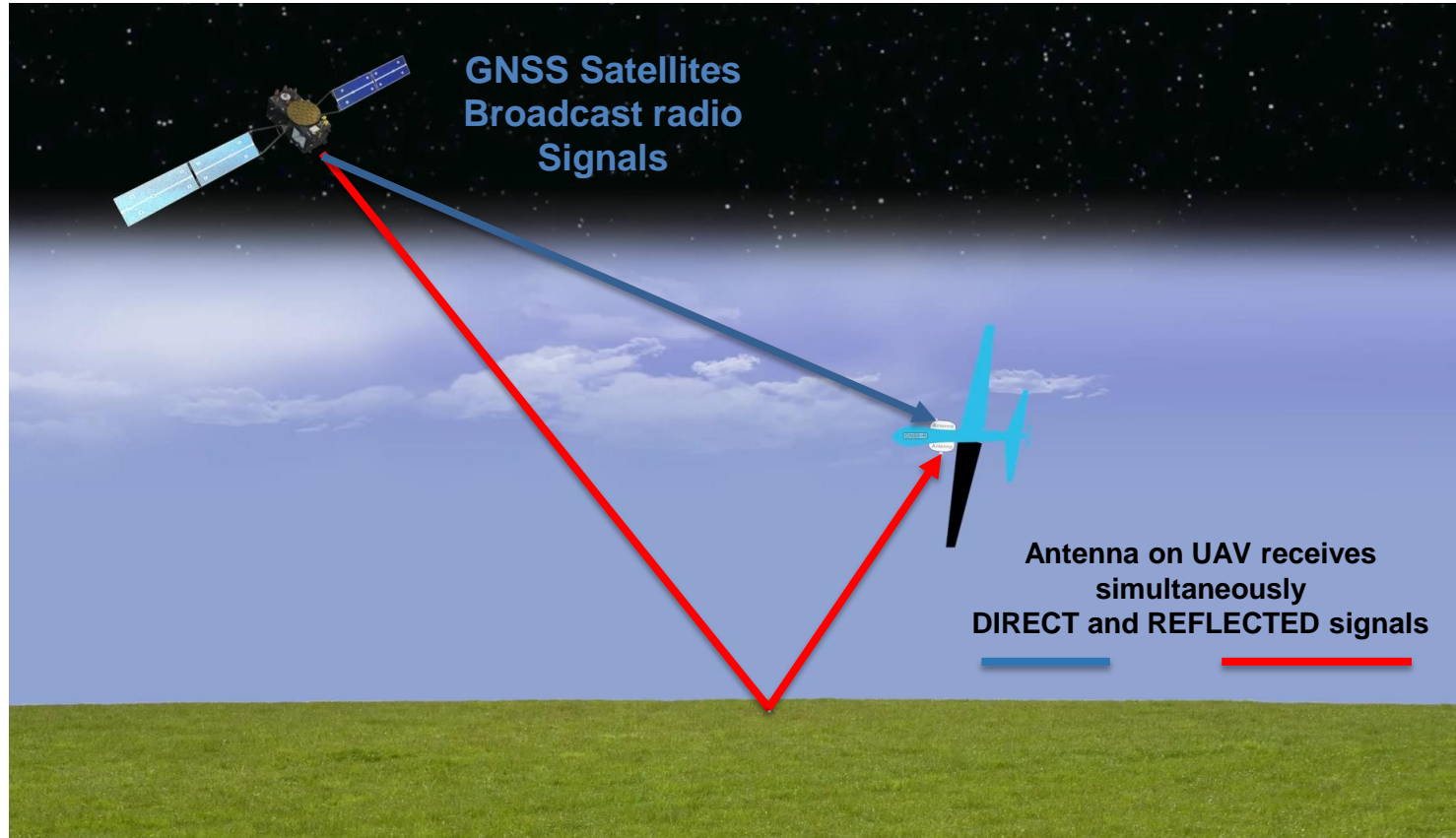


## Soil moisture map service

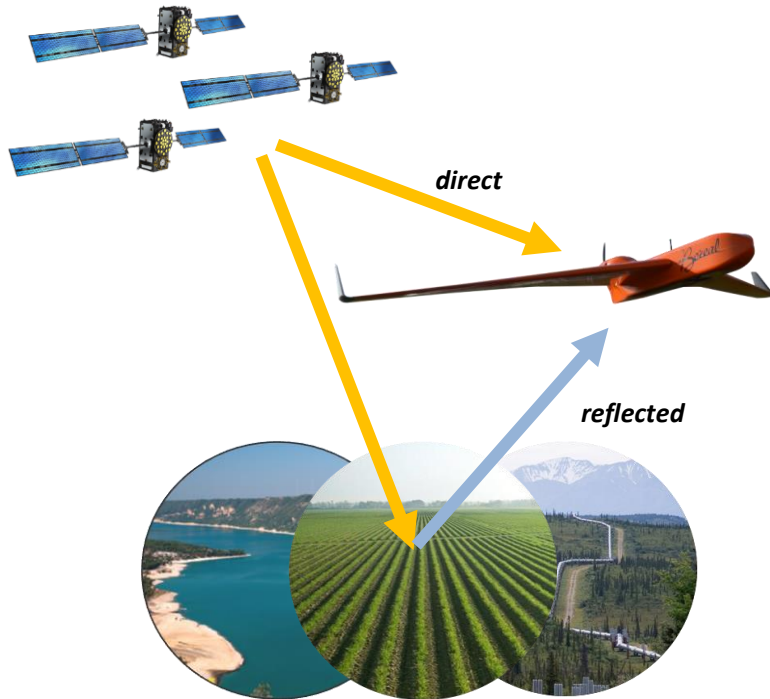


Helping farmers to make better decisions  
on irrigation by providing them  
soil moisture maps

# MISTRALE Concept

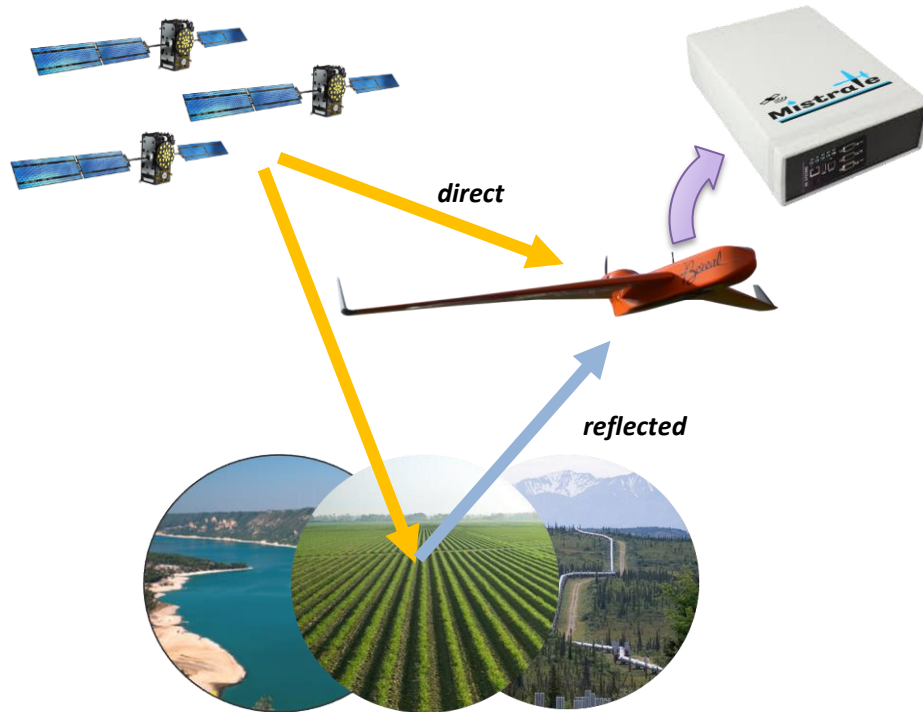


# What is MISTRALE?



**MISTRALE** uses signals from GNSS satellites (GPS, GALILEO) to obtain soil-moisture maps

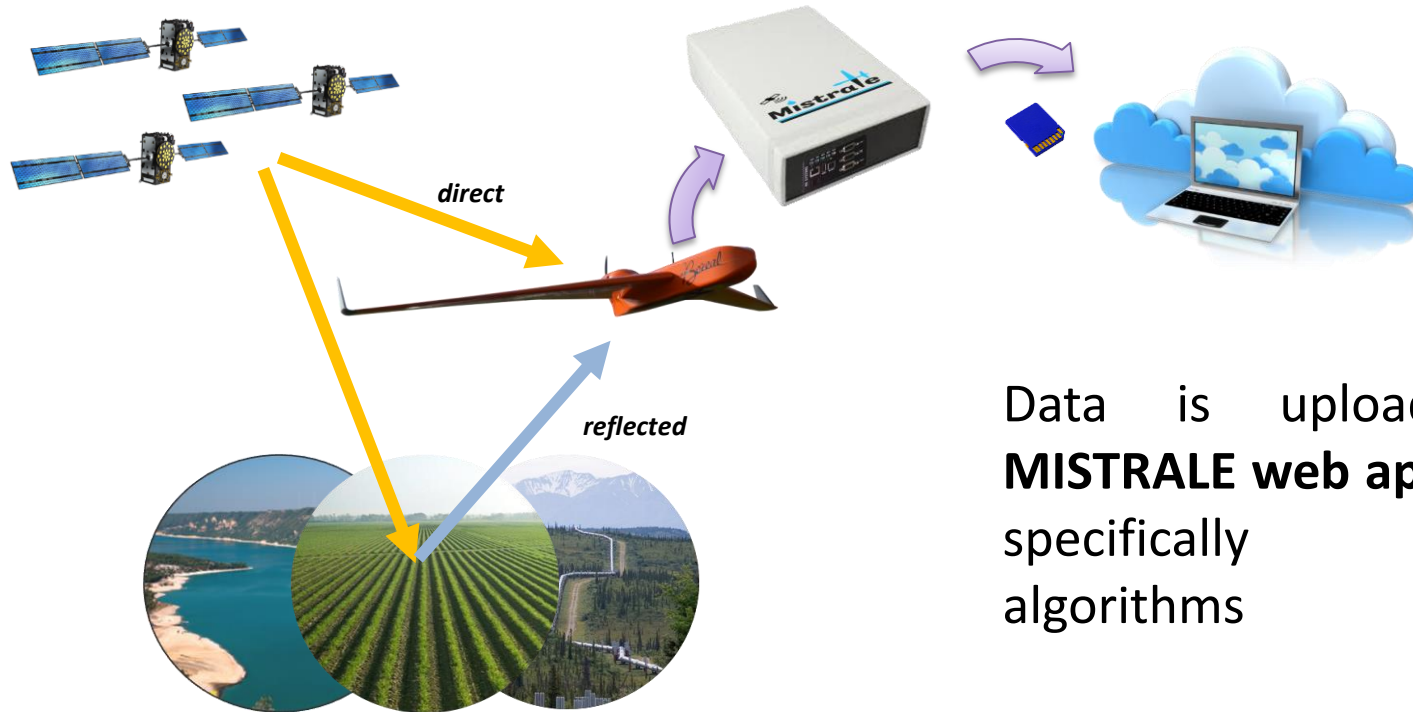
# What is MISTRALE?



**UAV** (drone) incorporating the **MISTRALE** sensor measures the area of interest (field, river, etc)



# What is MISTRALE?



Data is uploaded into **MISTRALE web app** to apply specifically developed algorithms

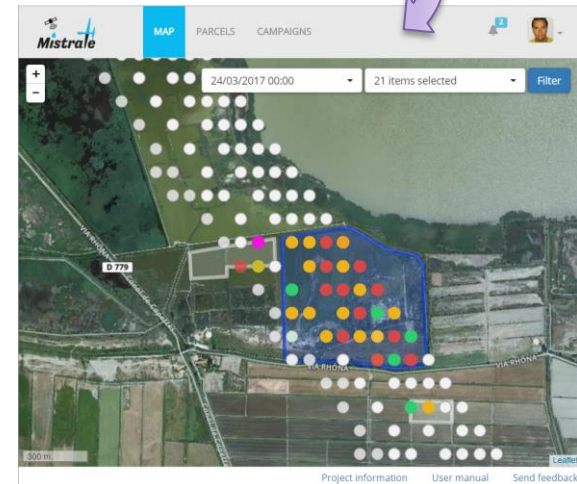
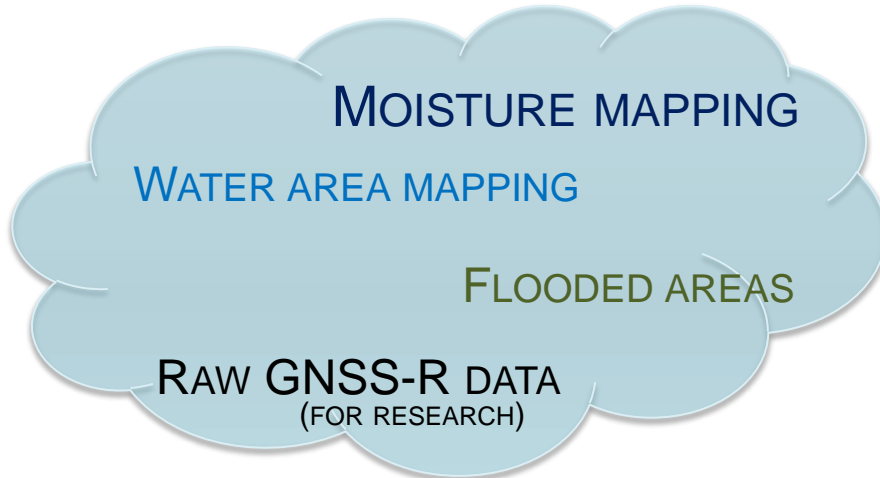
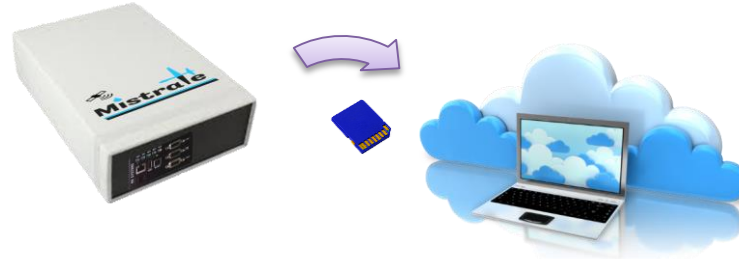


# What is MISTRALE?



**MISTRALE app** provides water content and soil-moisture (color coded) maps per parcels.

Sending **alerts for irrigation or user defined warnings.**



## Agriculture

- Moisture mapping for efficient and accurate irrigation/drainage
  - Use cases: Potato fields in the Netherlands & Vineyards in France

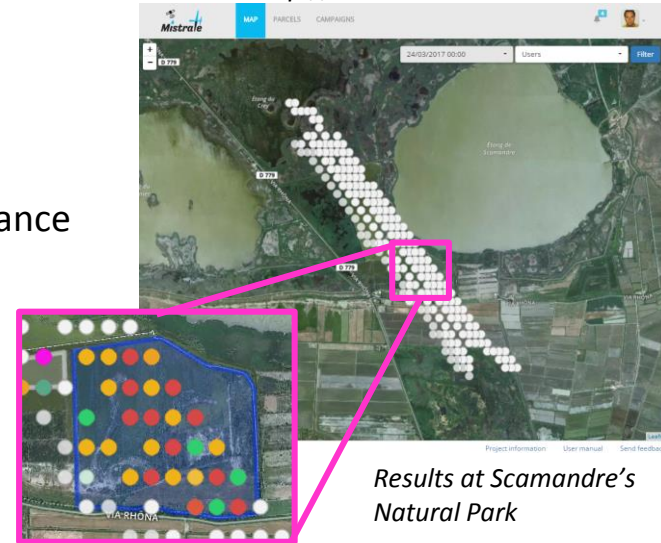
## Water area mapping

- Flooding area (hydro dam management)
- Water level (River and nature management)
  - Use case: Scamandre's Natural Park at Scamandre in France

## Engineering

- Soil contamination and mining prospection
  - Use case: Cartagena and Huelva open-pit mining and chemical storage site in Spain

<http://mistrale.starlab.es>



Lago Rojo at open-pit mine (Cartagena) with seasonal varying sulfuric acid concentration (from pH 2.5 to 7.0)

Couldn't  
see it ?



# Thank you for your attention.

For more information please check [www.Mistrale.eu](http://www.Mistrale.eu)

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