ABENGOA

SAID Monitoring network

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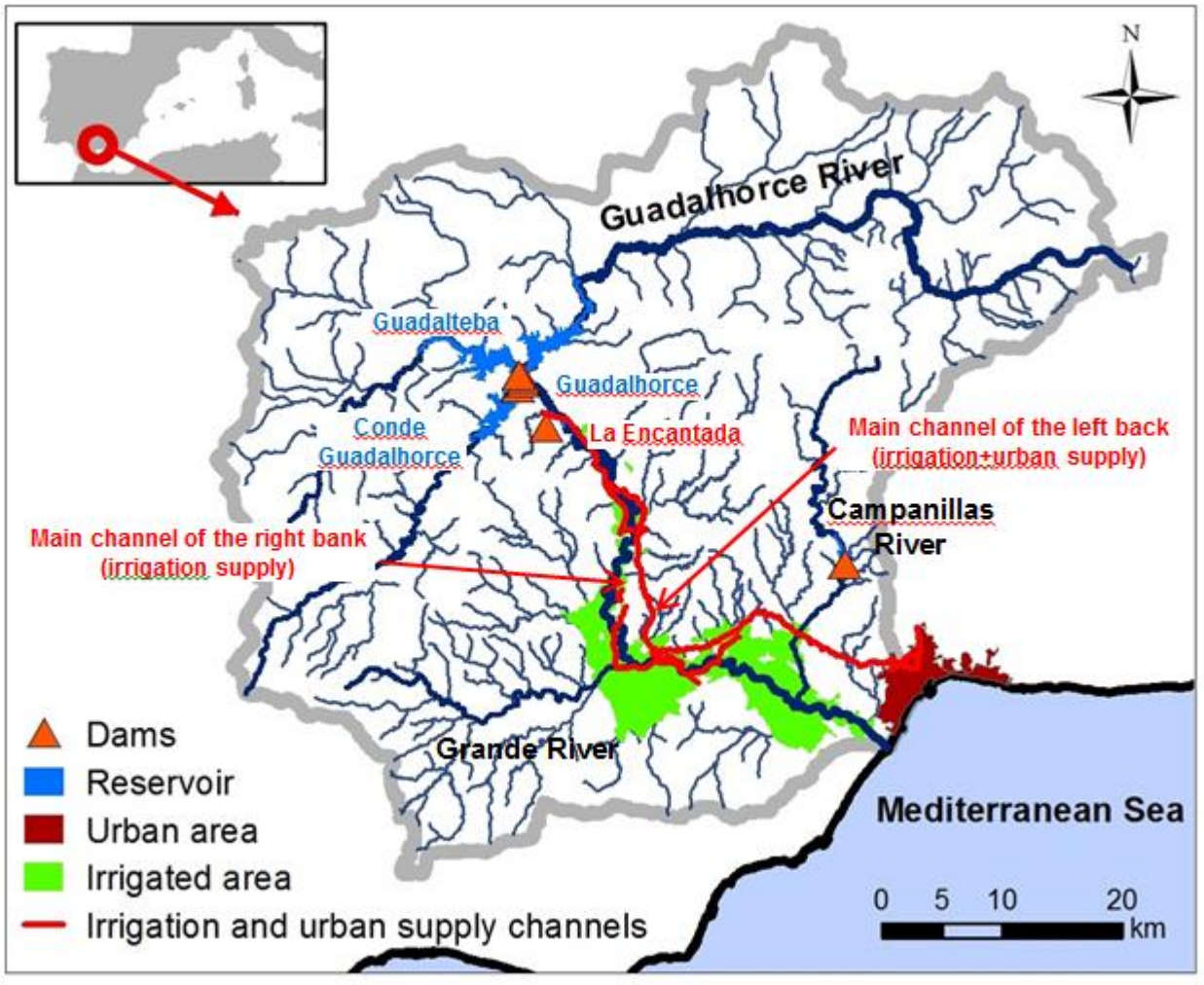
Abengoa Water

Lourdes, 19th October 2016

Co-funded by the seventh framework programme (FP7), under grant agreement no. 619132, within the Water Inno & Demo-1

SAID demonstrator area



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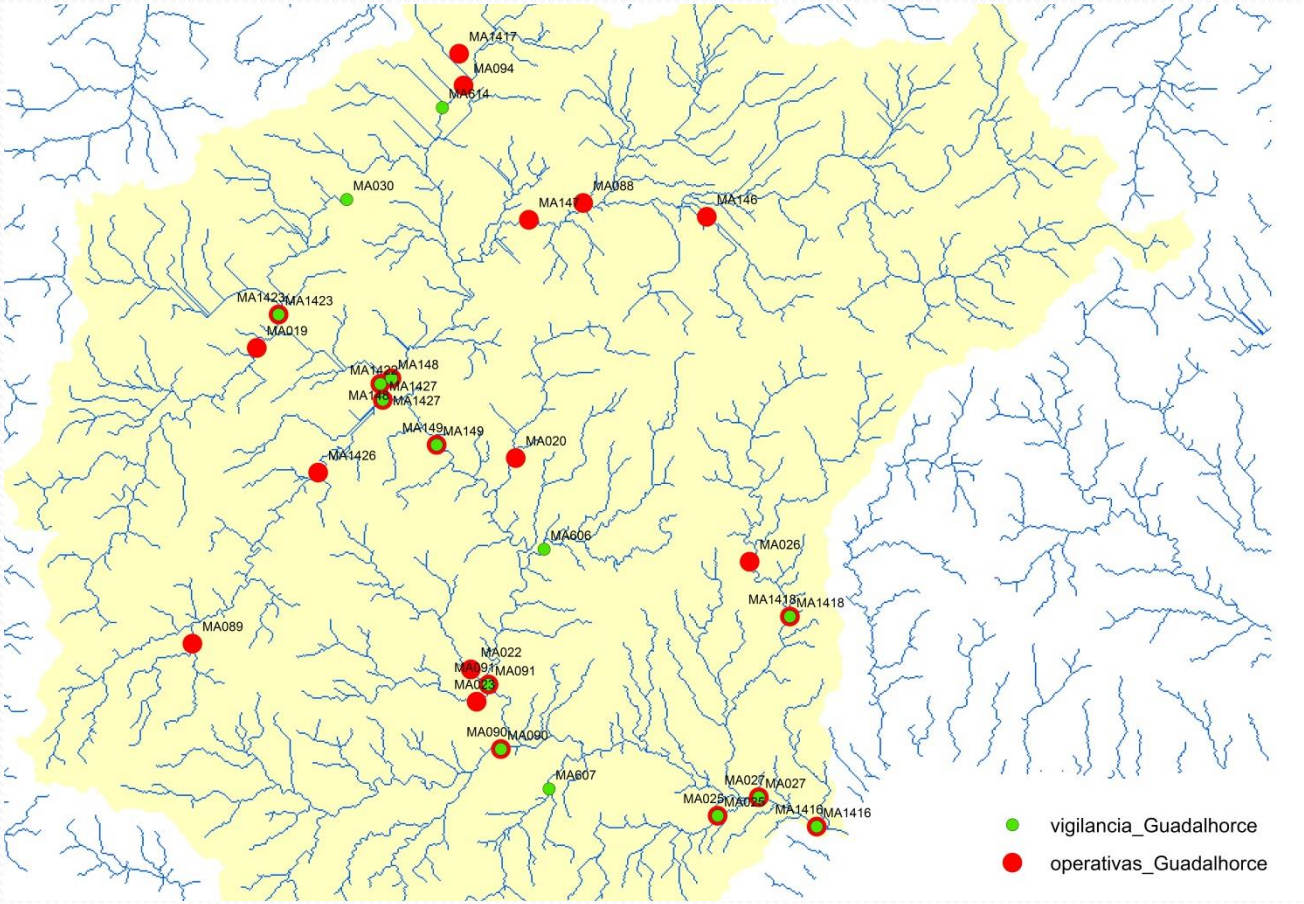
Previous monitoring networks

Water quality data from Consejería



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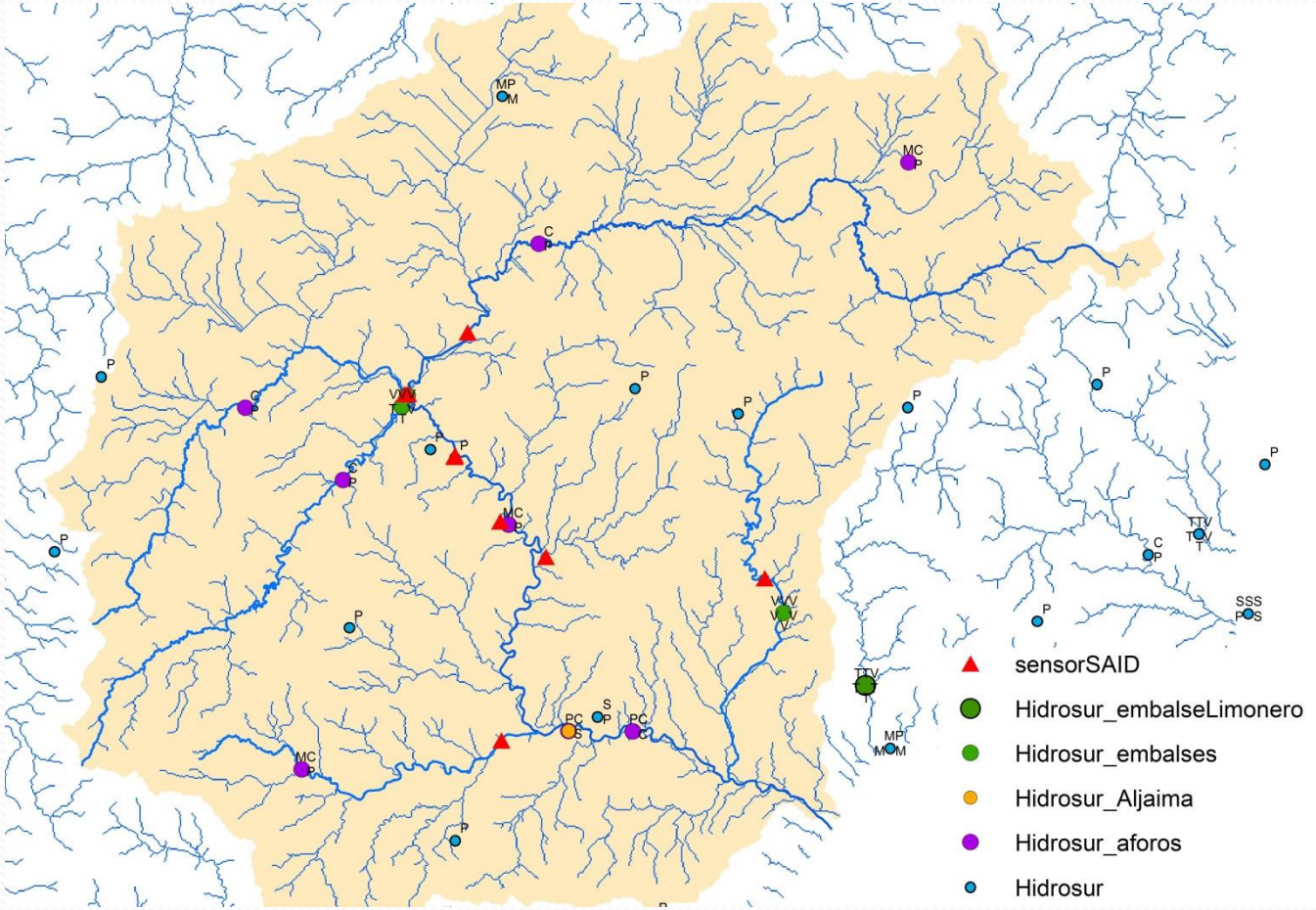
Previous monitoring networks

Rainfall and water flow data from Hidrosur



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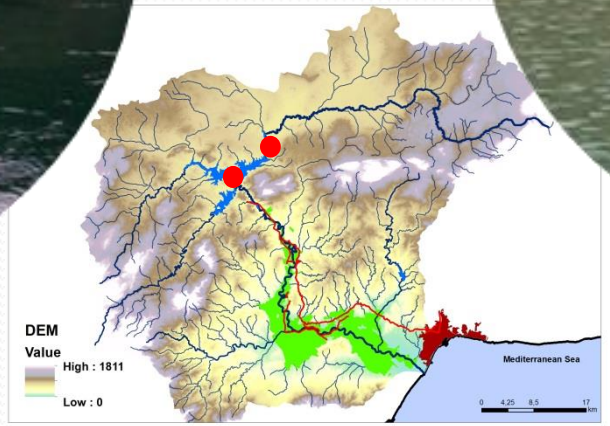
SAID sensors: Control in reservoirs

Guadalhorce reservoir (Water quantity and quality)

depth, conduct., temp., pH, Dis.Ox., redox



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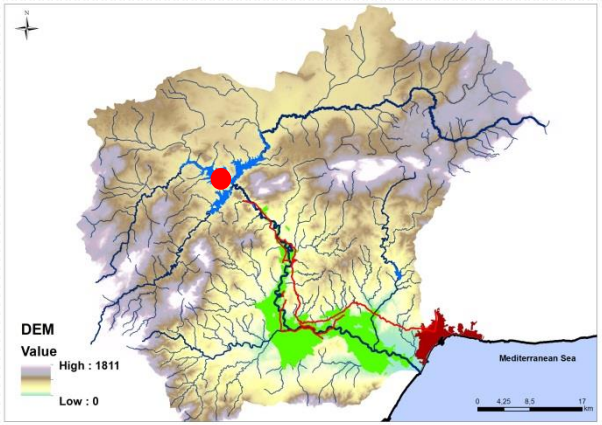
SAID sensors: Control in reservoirs

Guadalteba reservoir (Water quantity and quality)

depth, conduct., temp., pH, Dis.Ox., redox



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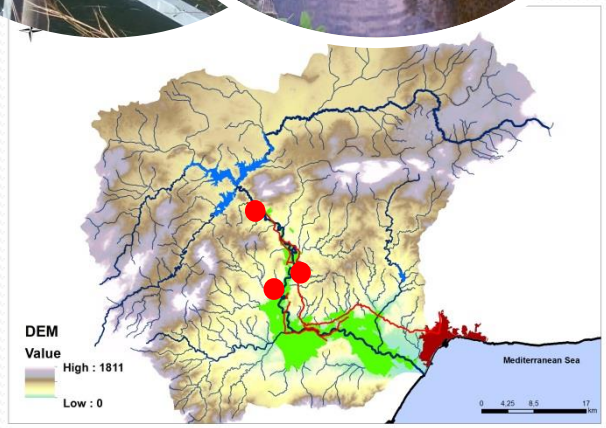
SAID sensors: Control in channels

Channel downstream La Encantada dam
(Water quantity and quality)

Channel for irrigation supply
(Water quality)



Channel for irrigation + urban supply
(Water quantity and quality)

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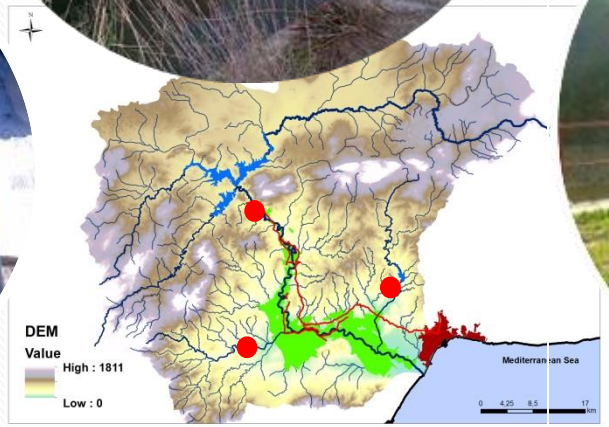
SAID sensors: Control in rivers

Guadalhorce River
(Environmental flow)

Grande River
(Flood)



Campanillas River
(Flood)

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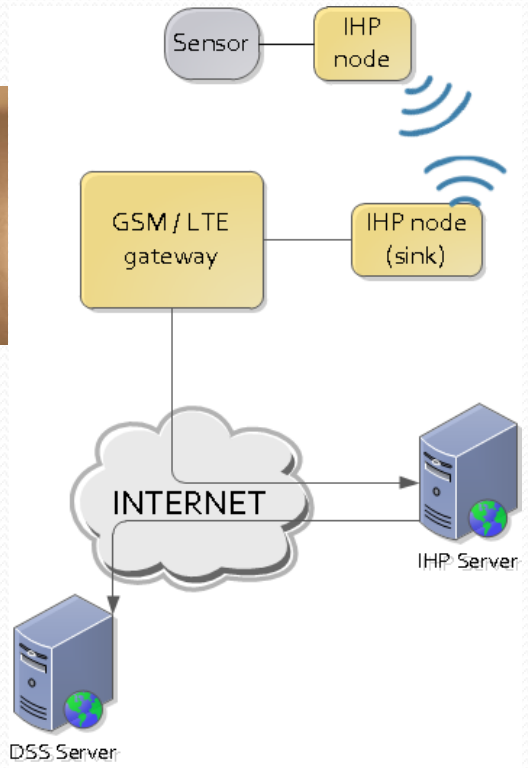
SAID Communication network

Example of IHP Node



- An IHP **node collects data from environmental sensors** and sends readings to a sink (another IHP node)
- **The sink node forwards data to a GSM/LTE** Gateway connected to Internet
- The **gateways send their data to the IHP server (via Internet)**
- **IHP server passes data to the DSS server** which supplies inputs to DSS in the expected formats and time rates

* IHP nodes draw only a few mA, leading to long lifetime (months, years)

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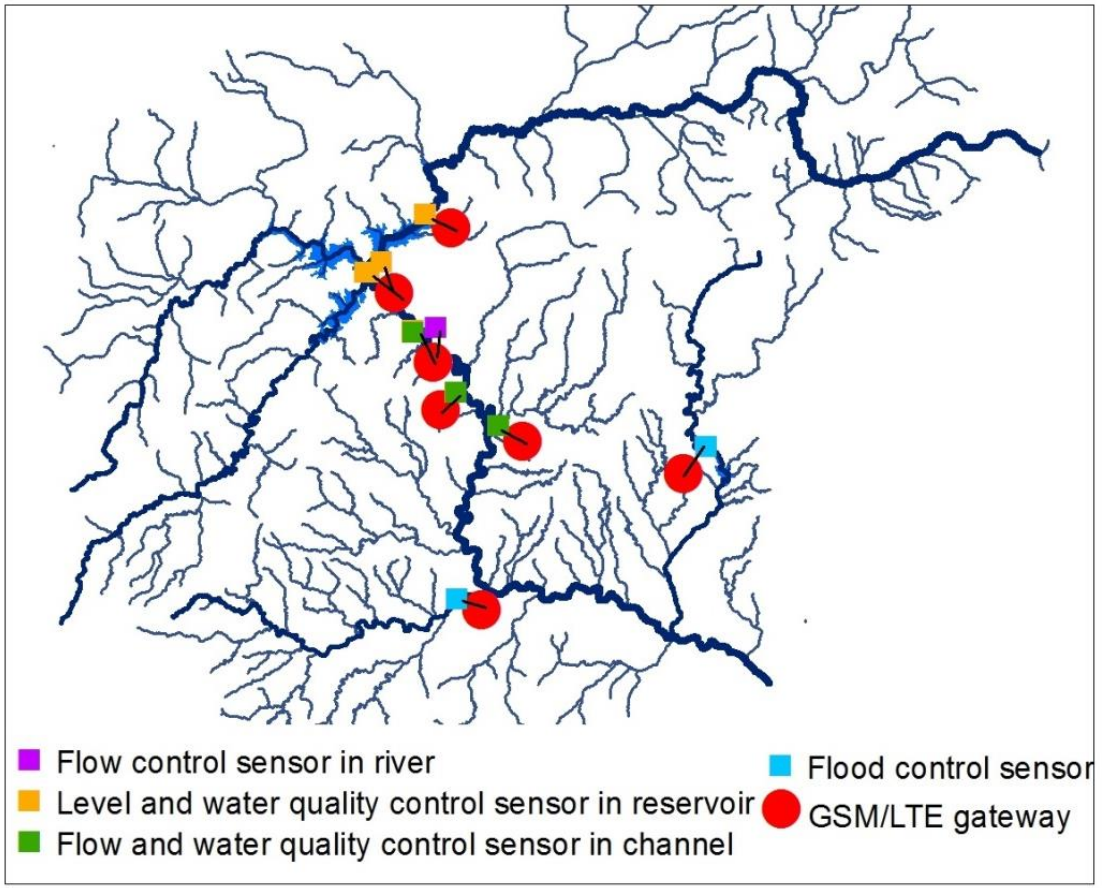
Final SAID network

- Sensor data gathered from seven locations.
- Sensor nodes collect data and forward to the GSM gateway, and to the internet.
- Selected 868 MHz frecuency band for wireless communication in each location:
  - ✓ License-free band
  - ✓ Huge TX power available (up to +27 dBm)
- 868 MHz transceiver available on IHP nodes



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Conclusions

- Autonomous sensing communication available
  - No infraestructure needed: wireless communication and battery-powered operation
- Easy to add new sensors
  - Based on SDI-12 interface
  - No configuration needed
- Long lifetime
  - Low-power operation

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Thank you for your attention

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