

# UPGRID project

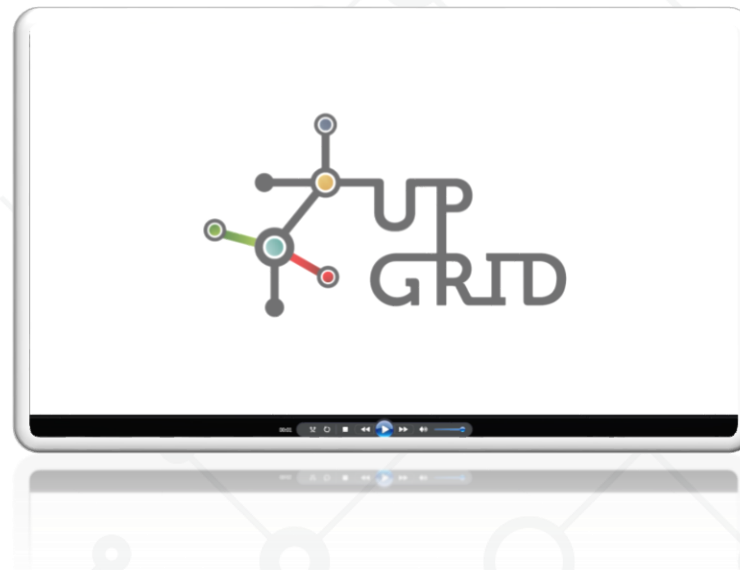
**Roberto González Sainz-Maza**  
UPGRID Project Coordinator,  
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# Project overview



motivation

key figures

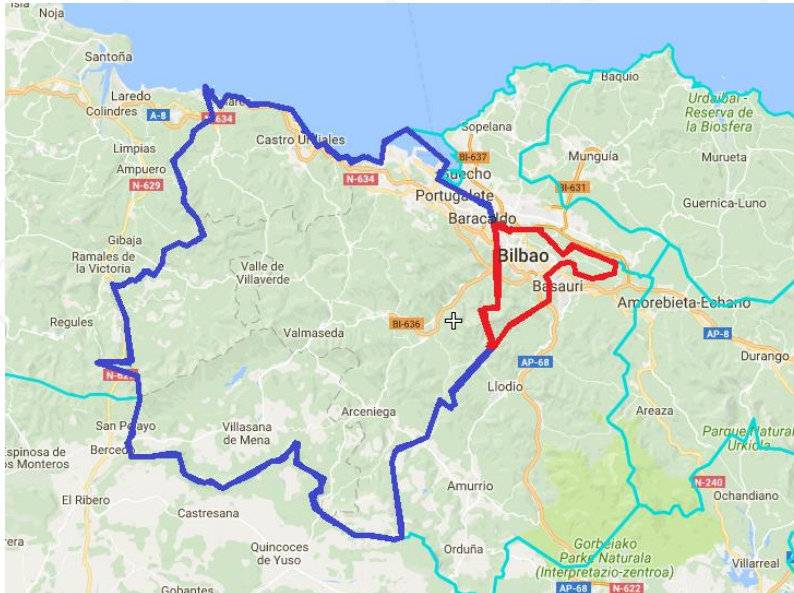


partners

objectives

demos

# Spanish demo: base & location



## Network Characteristics:

- 2.150 secondary substations
- More than 6.500 LV lines supervised
- More than 300.000 consumers
- Urban area and semi-urban

**Execution period: 01/04/2015 – 30/09/2017**

Demo developed leveraging on



## Partner participants:



# Spanish demo: objectives



**LV Network  
Management  
System  
(LV NMS)**

**PRIME**

**PRIME based  
functionalities**



**Meter Events  
Analysis and  
Processing**

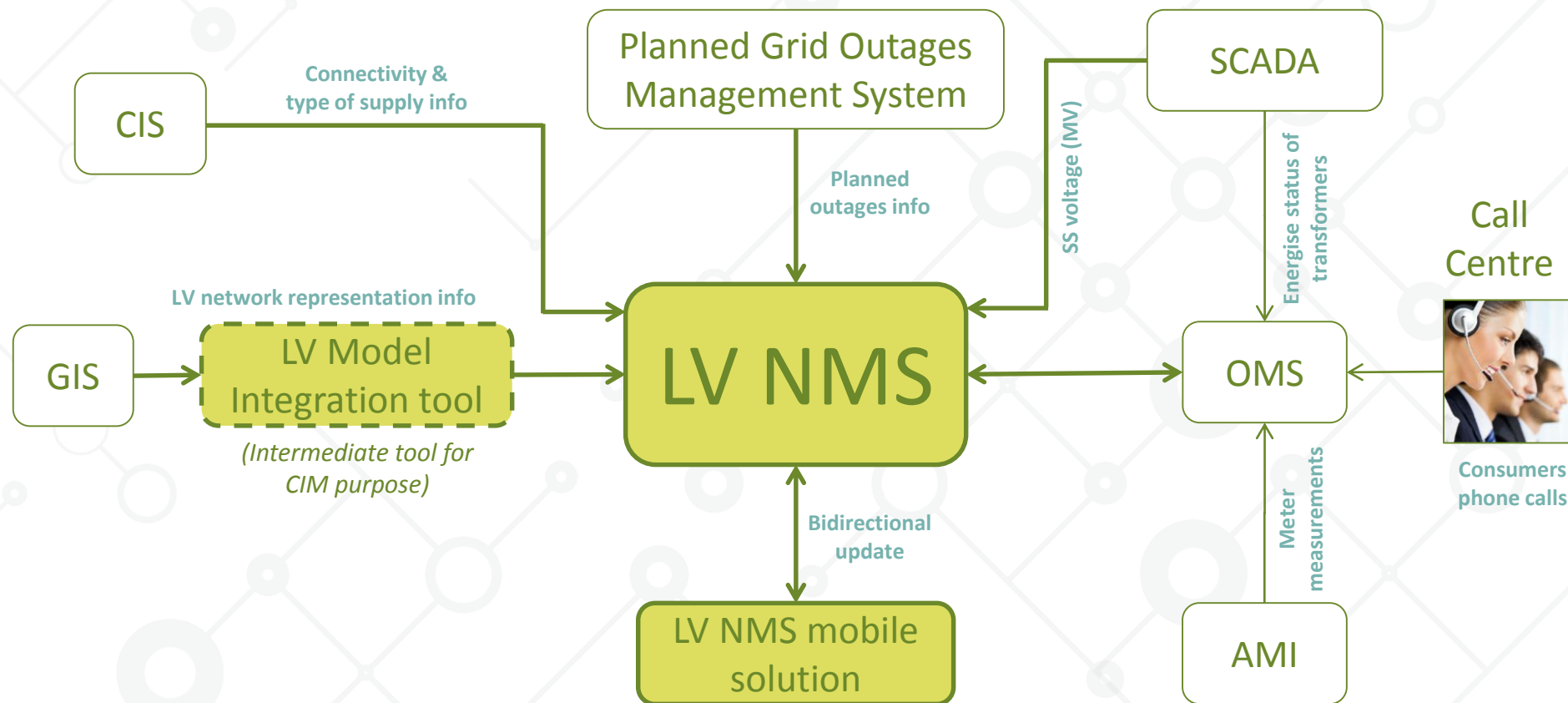


**Consumer  
empowering  
tool**

# Spanish demo: system integration



- ✓ The LV NMS is being **integrated** with present distribution network **systems** through existing and new **interfaces**.



# Spanish demo: LV outage management



SCADA / DMS /  
OMS / LV NMS

Outage

- Calls
- Customers affected
- Events (informative)
- Measurements (informative)

Manual requests help to follow up outage restoration and confirmation

Customer Calls

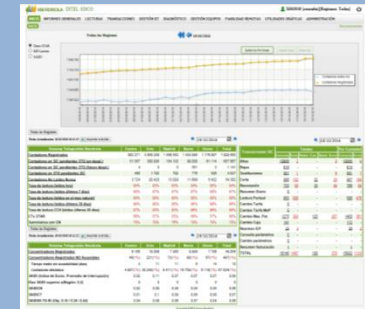
~~Outage customers affected!~~

SM Spontaneous Events

Automatic measurement requests to meters (to establish outage extent)

Manual measurement requests to meters by operator

Call  
Centre



AMI

# Spanish demo: LV-NMS results



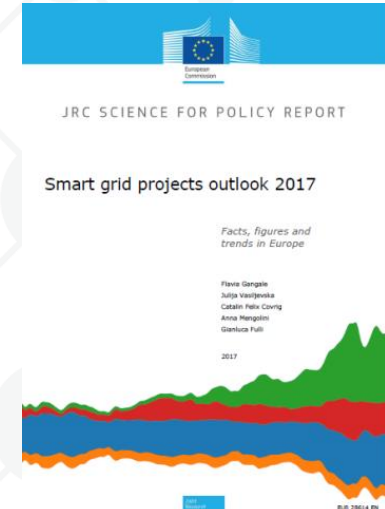
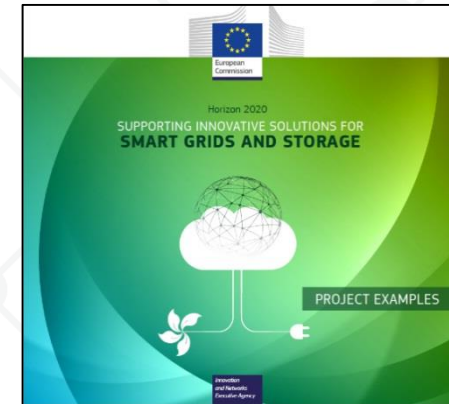
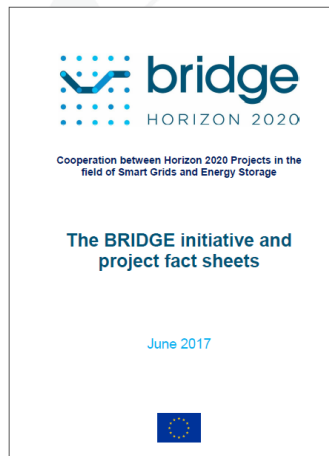
- ✓ Step forward into a more decentralised **LV O&M business process** where the staff involved has real time access to updated information:
  - Sound LV network diagram generation
  - LV diagram maintenance
  - LV NMS integration with others systems
  - Mobile solution
- ✓ **LV incident management efficiency** ( out of 583 LV incidents):
  - LV incident identification: **36' faster**
  - Efficiency on service restoration: **16' faster**
  - Incident reporting: **32% more accurate**
  - Grid crew displacement: **40% avoided**



# Iberdrola and UPGRID present at...



(2015, 2016 and 2017)



(Session 2016 and 2018)



(2016 and 2017)

<http://upgrid.eu/>



(2015, 2016 and 2017)



...and more.



# Conclusions: *benefits & opportunities*



**AMI infrastructure value showcase:** leveraging field data and **DSO value increase.**

Continue improvement in the different factors that impact on LV grid quality in the new electricity scenarios: **DSO processes efficiency & Consumer oriented.**

Being flexible to a more rational, automated structuring and **processing of smart meter events (offline), assisting LV grid maintenance.**

Identifying extensions of the **PLC PRIME-based communications** for advanced solutions: **remote control operation over LV grid.**

Advancing on the relation with **Consumers** towards a more **active** and **informed** actor in the smart grid.

**Data analytics** and **artificial intelligence-based techniques** to an effective integrated grid and **AMI data processing**

**CIM** as an opportunity to facilitate **scalability, replicability** and **interoperability**

# Questions?

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