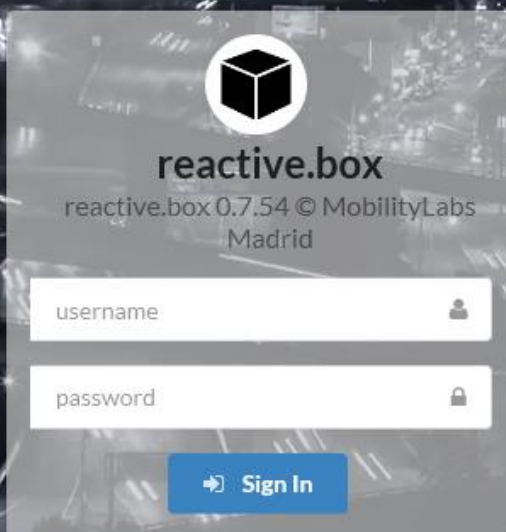






# DATA AS AN ASSET: IMPROVED INTEGRATION, MANAGEMENT AND DISSEMINATION



  
**reactive.box**  
reactive.box 0.7.54 © MobilityLabs  
Madrid

username 

password 

 **Sign In**

## AN OPEN PLATFORM FOR TRANSPORT DATA IN MADRID

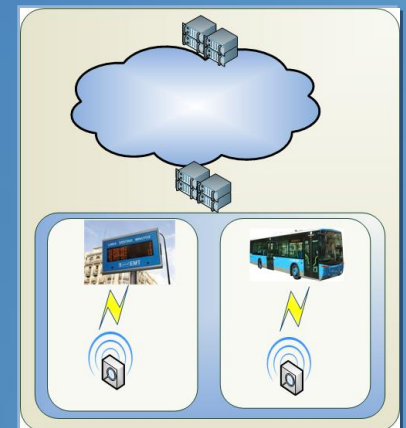
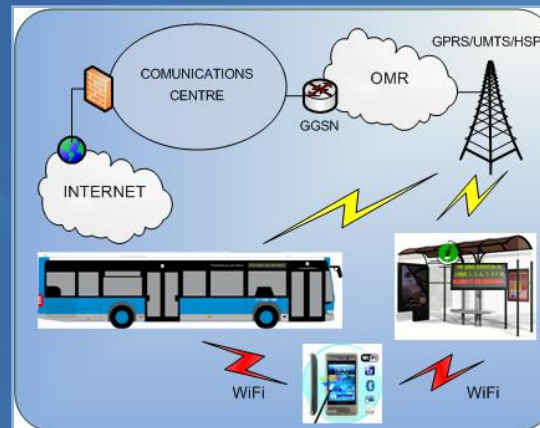
*Sergio Fernández Balaguer*  
*Empresa Municipal de Transportes de Madrid, S.A.*

AN OPEN PLATFORM  
FOR TRANSPORT DATA



# Some figures

- 1.904 buses
- 203 bus routes (176 daytime/27 night service),
- 4,629 bus shelters
- 800 electronic information panels (PMV)
- 404 million passengers / year
- 91 million km / year
- Open data policy
- On board wifi
- ICT/ITS



## OPEN PLATFORM FOR OPEN DATA SERVICES

- Geographic infrastructure of the transport network
- Bus service and incidences information
- Multimedia information systems

Open data portal



<http://opendata.emtmadrid.es>

AN OPEN PLATFORM  
FOR TRANSPORT DATA



Cultivate resilient smart Objects for  
Sustainable city applicatiOnS

<http://iot-cosmos.eu/>



ICT cloud-based platform and mobility  
services available,  
universal and safe for all users

<http://www.moveus-project.eu/>



An EU / Japan collaboration to  
deliver Intelligent Knowledge-as-a-  
Service

<http://ikaas.com/>



DATA  
OBSERVERS/  
CONSUMERS

INTERNET

METEOR

iMADRID! EMT

ENVIRONMENT

SENSORS

PUBLIC TRANSPORT

TRAFFIC

TRAFFIC LIGHTS

CITIZENS &  
COMPANIES

mongoDB

RabbitMQ™

BIG DATA  
ANALYTICS  
TECHNOLOGIES  
STORAGE

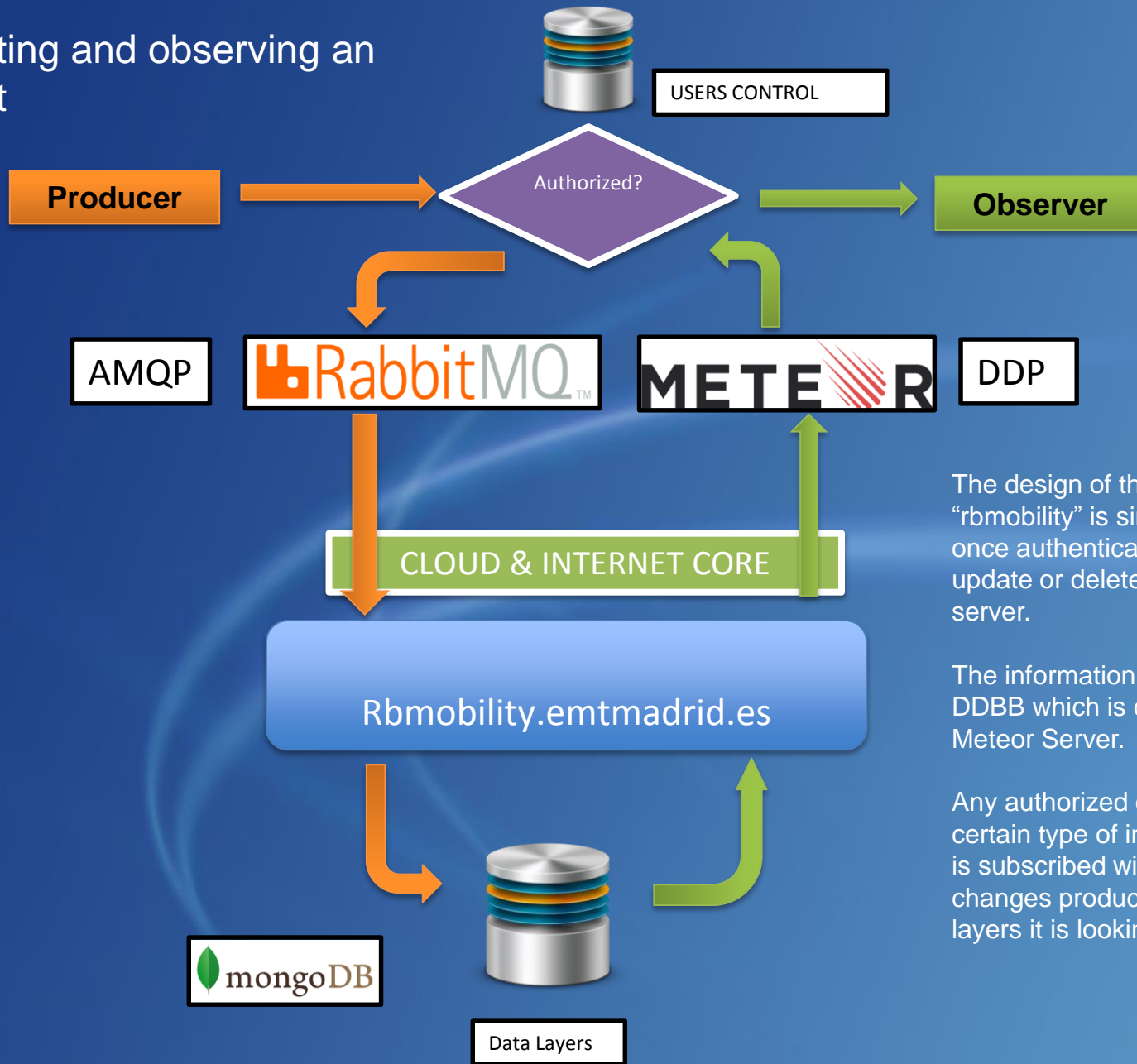
An open and event oriented platform has been developed with the aim of providing to the mobility environment of the city of Madrid an exchange system of information in real time.

The platform allows the entry of data from multiple stakeholders (institutions, citizens...), making multiple and unlimited exchanges

mObility  
LABS MADRID

iMADRID! EMT

# Creating and observing an event



The design of the platform, called “rbmobility” is simple. The client, once authenticated, can insert, update or delete data using a queue server.

The information gets to a NOSQL DDBB which is controlled by a Meteor Server.

Any authorized client looking at a certain type of information to which is subscribed will get in real time all changes produced in the different layers it is looking at



## MADRID SENSORS SYSTEM INTEGRATOR

MADRIDOPENMOBILITYLAB

MYBUS

REACTIVE BOX SERVER



Local  
Cloud DB

RB layer  
collections

messagelayers  
(VEPROT)

buslayers

userlayers

sensorlayers

stoplayers

linelayers

trafficlayers

parkinglayers

Bigdata  
collections

busEvents

userEvents

alertEvents

pmvEvents

sensorEvents

trafficEvents

The model is supported by a NOSQL DDBB (Mongo DB)  
It contains the semantic definition of objects  
It has real time data and BigData collections



# Madrid data model design

To set it, a mobility lab for the city has been created  
([openlabmobility.emtmadrid.es](http://openlabmobility.emtmadrid.es))

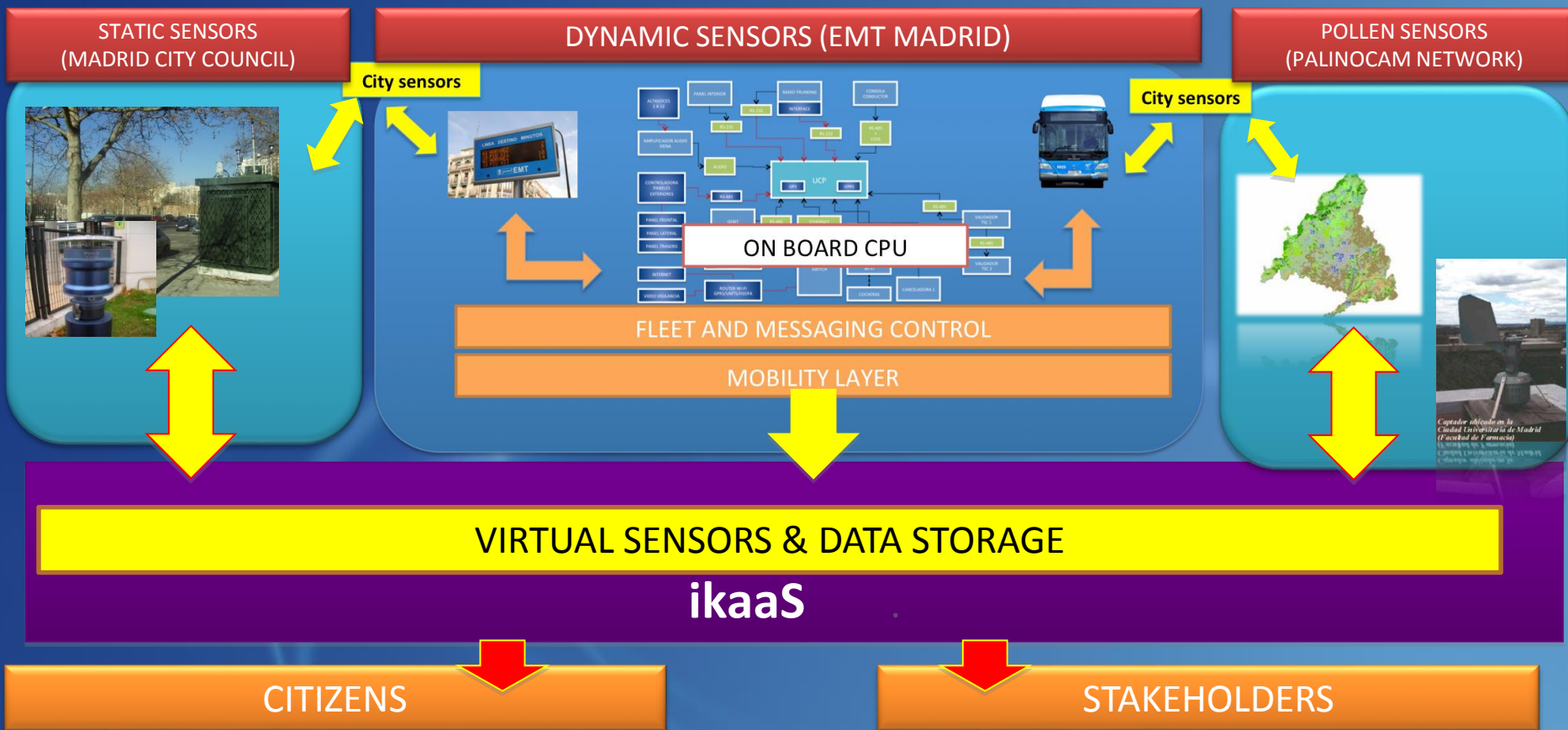


THE MADRID ENTITIES BASIC MODEL HAS BEEN  
DEFINED BASED ON THE FOLLOWING AIM:

1. SHARED AND OPEN
2. ADAPTABLE
3. SCALABLE
4. STANDARD

THE DATA MODEL IS PUBLIC AND OPEN, AND IT IS PUBLISHED IN

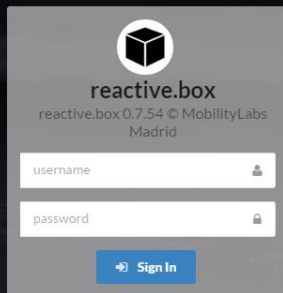
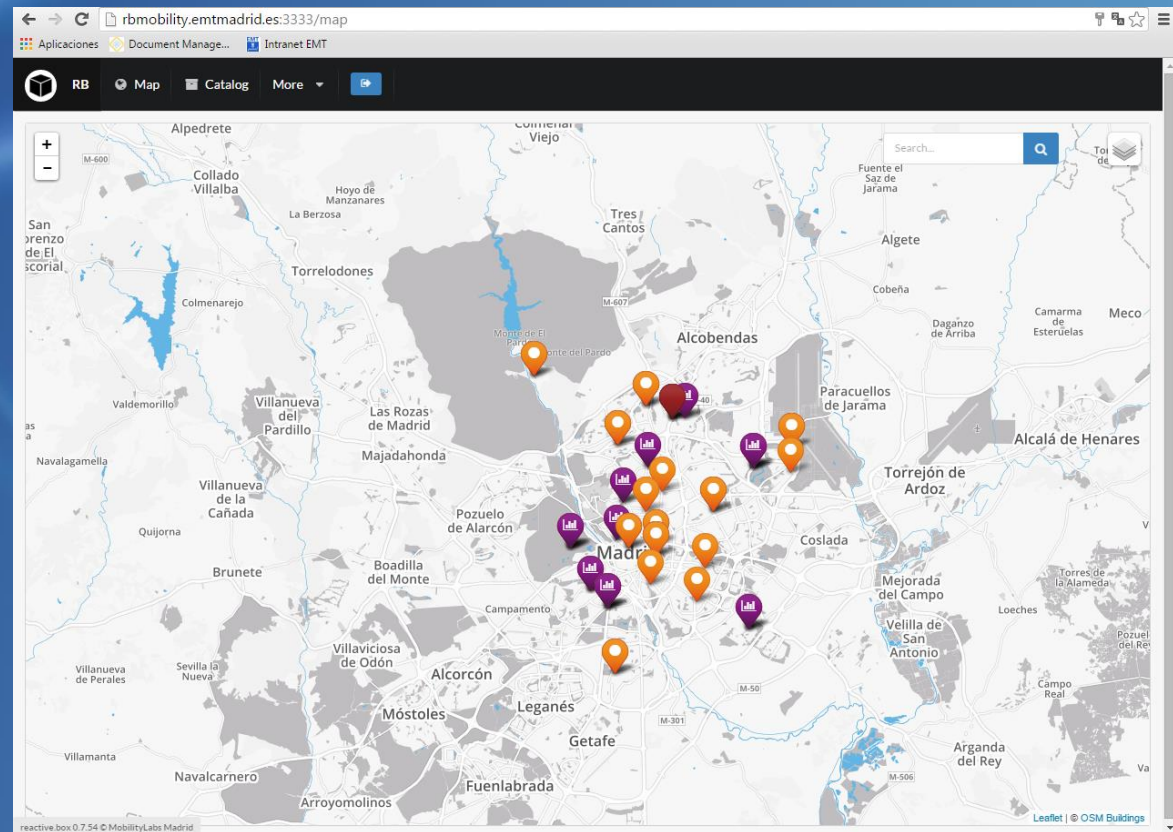
[HTTPS://GITHUB.COM/MADRIDOPENLABMOBILITY/MOBILITY-MADRID-VIRTUAL-ENTITIES](https://github.com/MADRIDOPENLABMOBILITY/MOBILITY-MADRID-VIRTUAL-ENTITIES)



The objective of MADRID is converting its 800 electronic panels and 1,900 buses in an extensive network of mobile and dynamic sensors in addition to current MADRID fixed sensors network. IKAAS provides an open and compatible architecture that will allow firstly to connect any type of sensors and secondly to integrate all of them into a service architecture through which any stakeholder can read values and perform actions using the virtual representation of these sensors. This service architecture must have safety rules and schemes of representation of abstract objects sufficient to ensure its safe use and reliability. Within this idea, IKAAS will help Madrid to step from an environmental data provider (local solution) to an environmental health service provider (global application)

# ...Madrid open platform for transport (mobility) data

- In real time
- <http://rbmobility.emtmadrid.es:3333/>



Thank you very  
much!



<http://showroom.emtmadrid.es>

<http://opendata.emtmadrid.es>

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 [@SergioFBalaguer](https://twitter.com/SergioFBalaguer)