OM2M an opensource middleware for IoT compliant to ETSI-M2M

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OM2M ?

› **Connecting** M2M/IoT devices

› **Horizontal** service **platform**

› **Restful** architecture with a **generic** set of **capabilities** for M2M services

› Allow developing services **independently** of the underlying network

› Facilitate **deployment** of **vertical** applications.

› **Compliant** to **ETSI M2M** Standard, and soon, to the **OneM2M** Standard

› Features:
   App/Dev discovery, App/Dev registration, AR mgmt., Group mgmt., subscription mgmt., etc.

Dev / Code

- OM2M is a java platform running on top of an OSGi Equinox runtime which make it highly extensible via plugins.

- Each SCL includes required plugins.
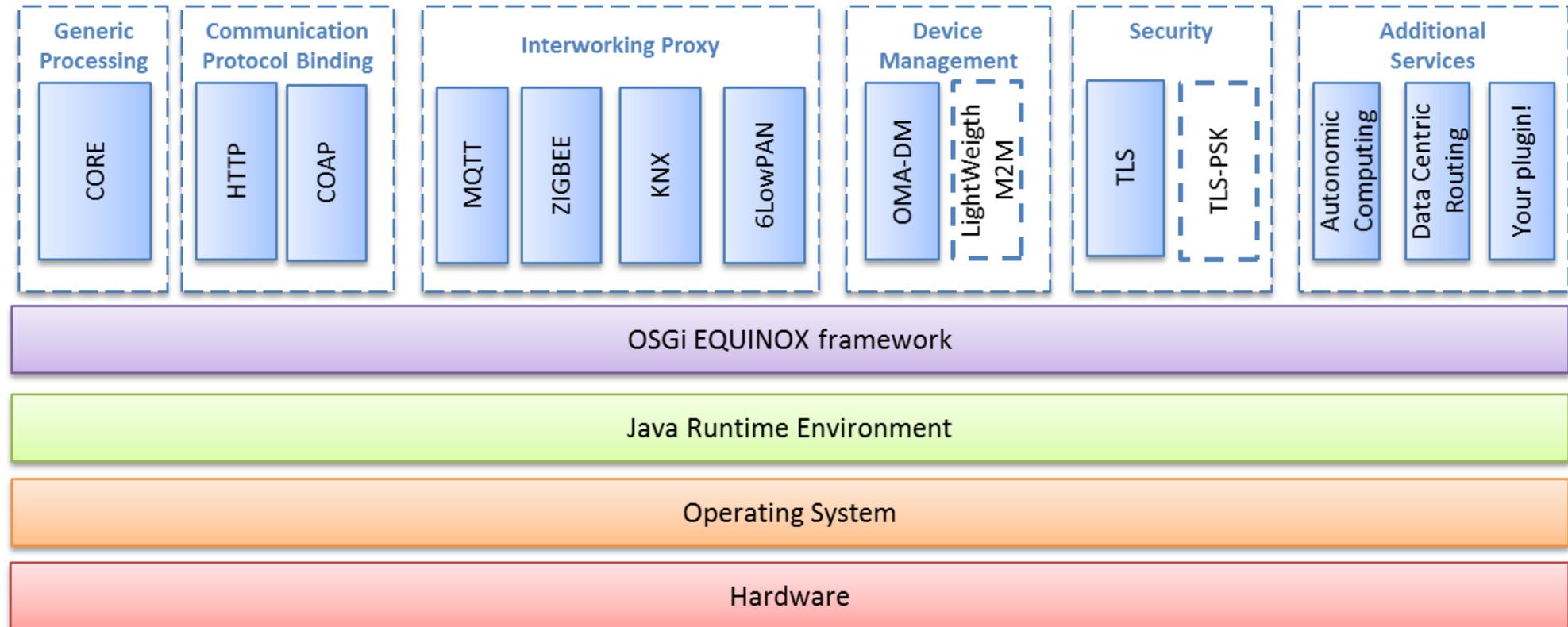

OM2M main building blocks

Architecture

End user devices

HTTP/CoAP

Data Analytic

HTTP/CoAP

SCADA Interface

HTTP/CoAP

M2M Server

HTTP/CoAP

M2M gateway

MQTT

PHIDGETS

ZIGBEE

6LoWPAN

KNX

Network domain

Device and Gateway domain
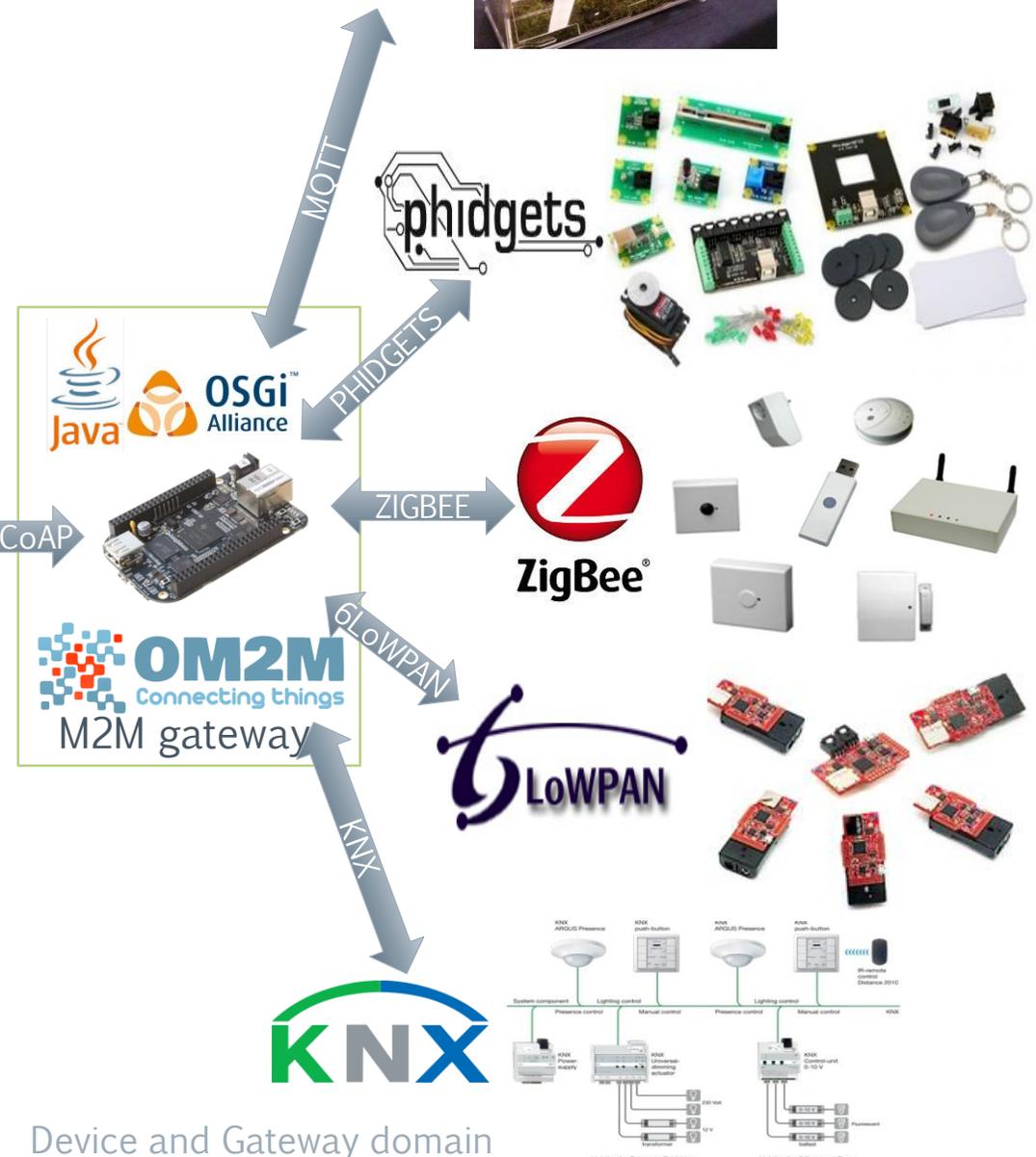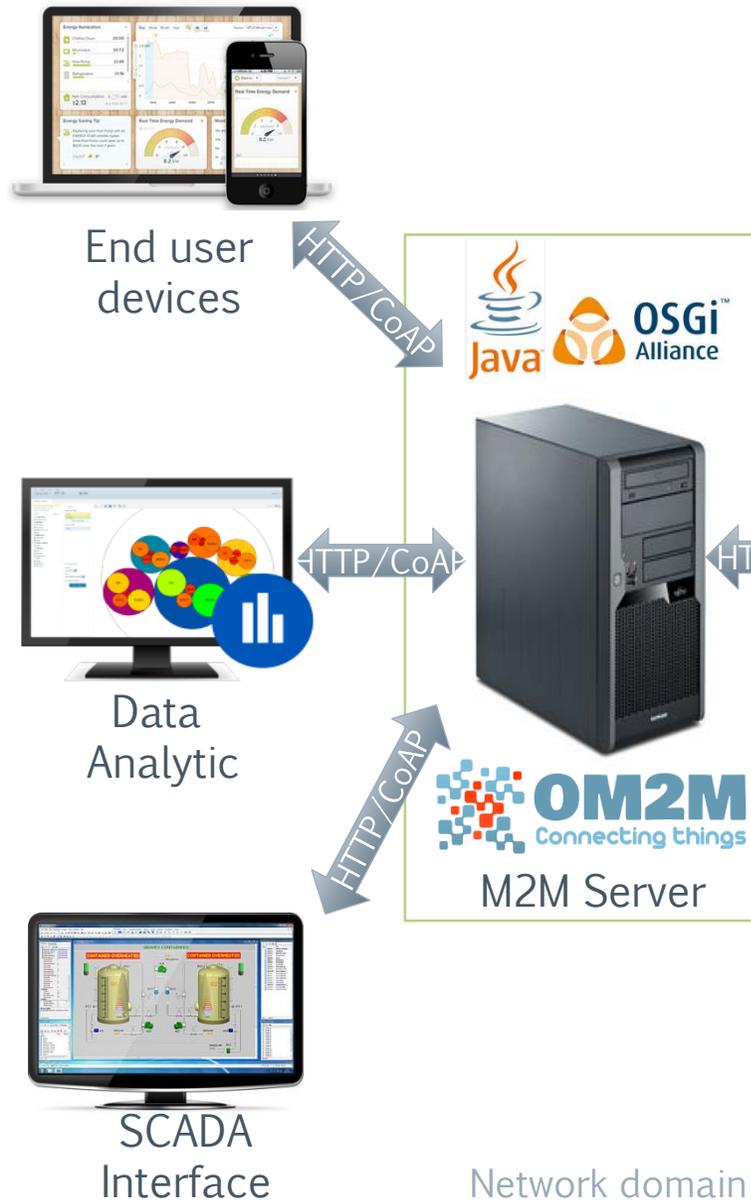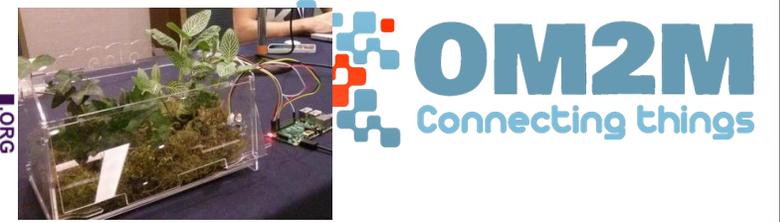
Project Stats

› Web site frequentation
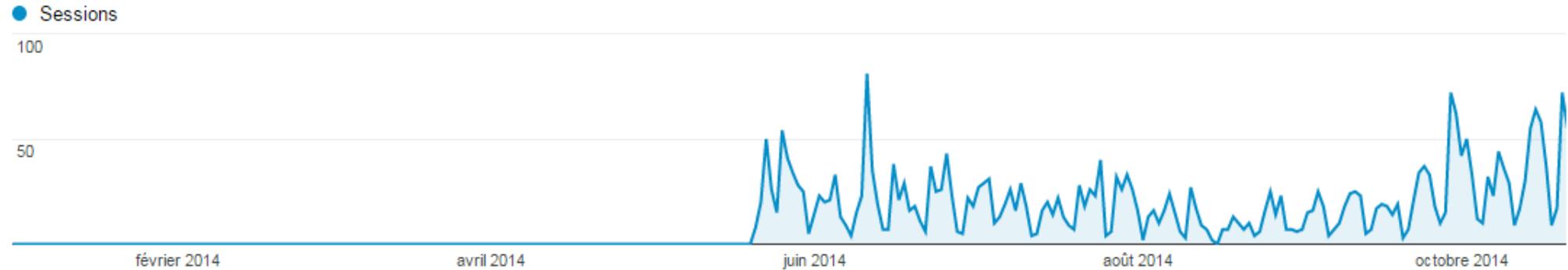

› Topics on the dev forum

Views per Topic

Project Stats
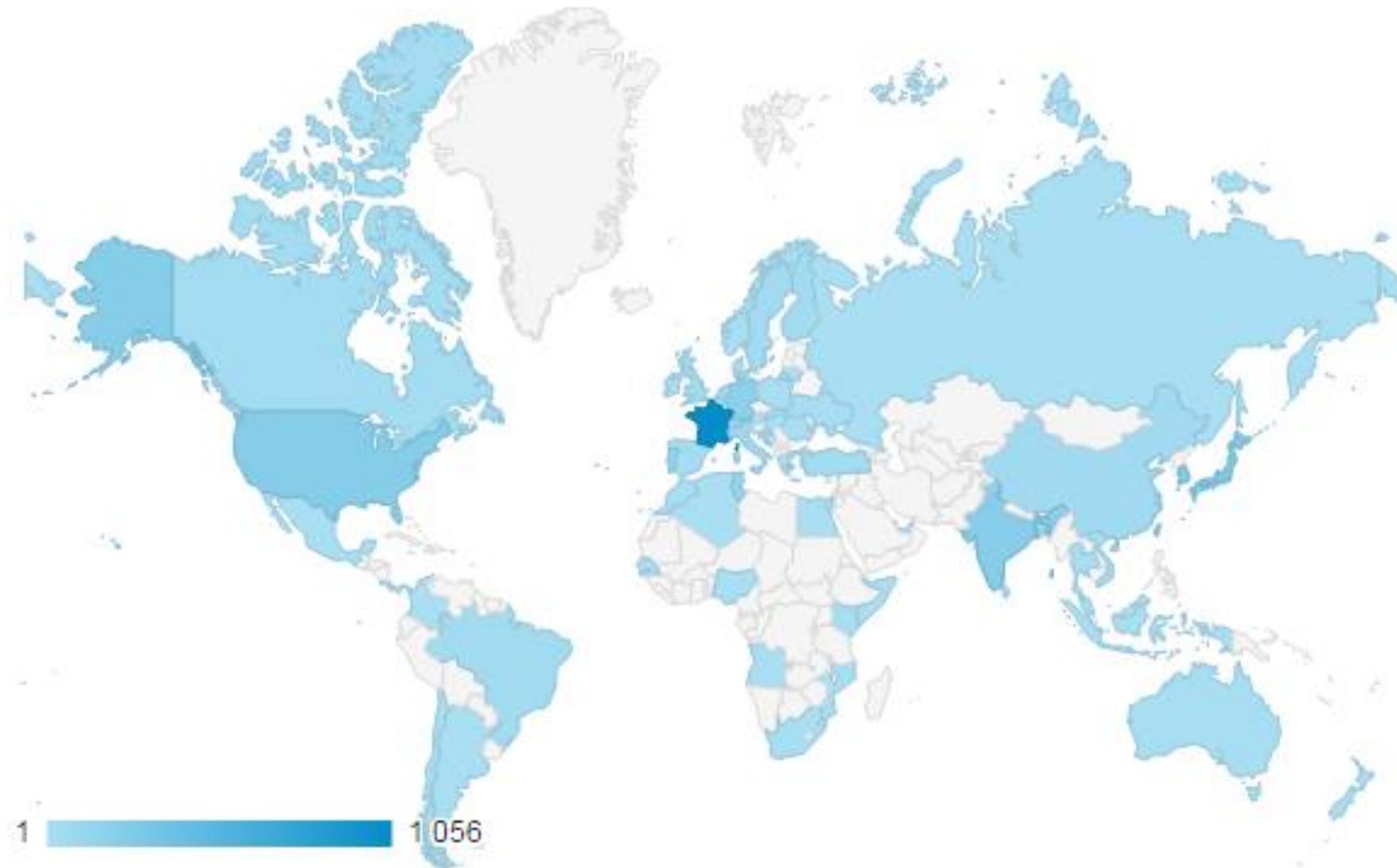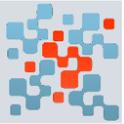
Project plan

› Next releases
  – Short term
    › Date : around December 2014 ??
    › Key features:
      – **MQTT** Client
      – **ZigBee** interworking proxy
      – **6lowpan** interworking proxy
  – Mid-Term
    › Date : 1st / 2nd quarter of 2015 ??
    › Key features :
      – A **DSCL entity** : extend om2m to "powerful" devices : smartphone, capable sensor/actuator
      – **JSON/BSON, CORE Link** formats
      – **Bluetooth** interworking proxy

Key challenges

› MQTT communications
– Seamless integration of client and broker

› ZigBee IP
– Configuration problems related to some devices

› 6lowpan IP
– Very short data frames (~50 bytes)
– New data format (JSON, Core Link)

› A Dashboard !
– OpenSCADA ? Birt ? Home made?

› Evolution towards the OneM2M standard
– Updating the data structures

Collaboration opportunities

› Already using:
- Californium for CoAP
- Paho for MQTT Client

› Planning to use
- Mosquito/Moquette for MQTT Broker
- Birt for data visualization
- OpenSCADA for dashboard
- OMA LWM2M for device management
- Concierge for mobile deployment

Thank you

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Project overview

Legacy Devices

Gateway Application (GA)

GSCL

dIa

AE

SEC   CS

IP   RF   GC

REM   RAR

mId

Device Application (DA)

DSCL

dIa

AE

SEC   CS

IP   RF   GC

REM   RAR

M2M Device

M2M Gateway

mId

Network Application (NA)

NSCL

mIa

Application Enablement (AE)

Communication Selection (CS)

SECurity (SEC)

Generic Communication (GC)

Routing Function (RF)

Remote Entity management (REM)

Interworking Proxy (IP)

Your SC!

Reachability, Addressing Repository (RAR)

M2M Network

Legacy Device

Device and Gateway domain

Network domain

6/17/2014

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