



OM2M an **opensource middleware** for **IoT**
compliant to **ETSI-M2M** & **oneM2M** standards

eclipse.org/om2m

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What is 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 2M** Standard, and to the **oneM2M** Standard
- › Features:
App/Dev discovery, App/Dev registration, AR mgmt., Group mgmt., subscription mgmt., etc.

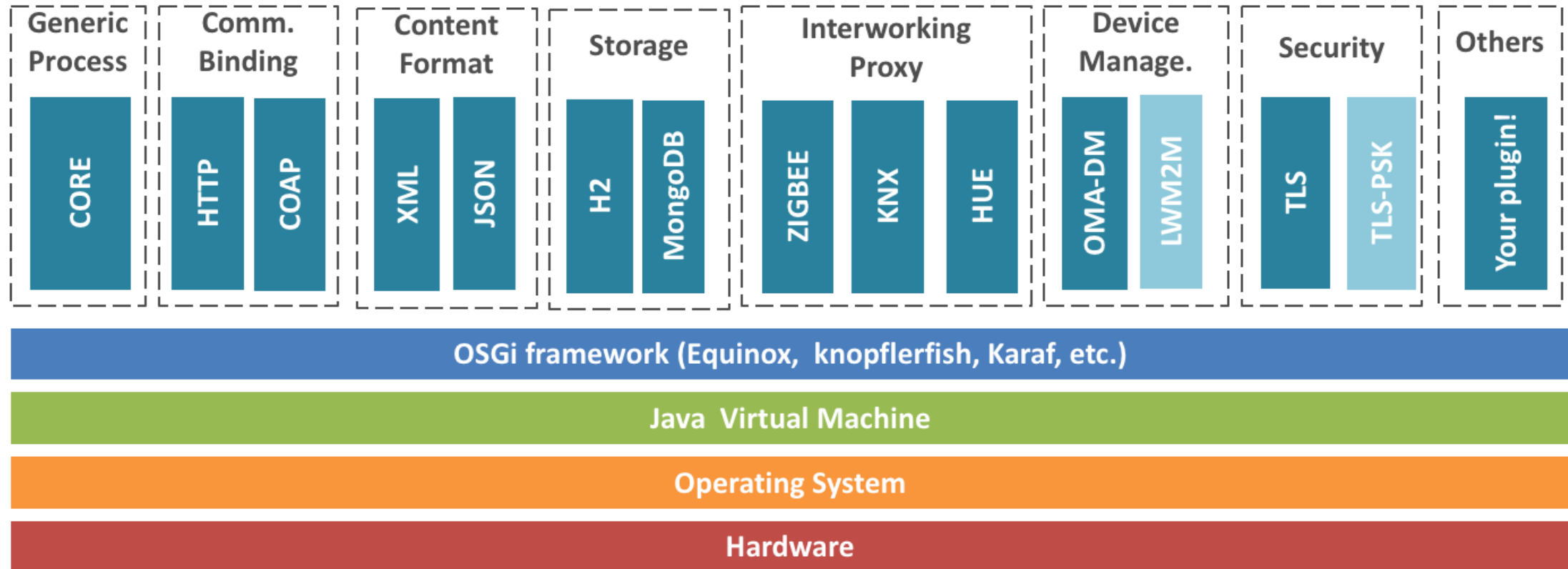


Dev / Code

Java platform running on top of an **OSGi** runtime

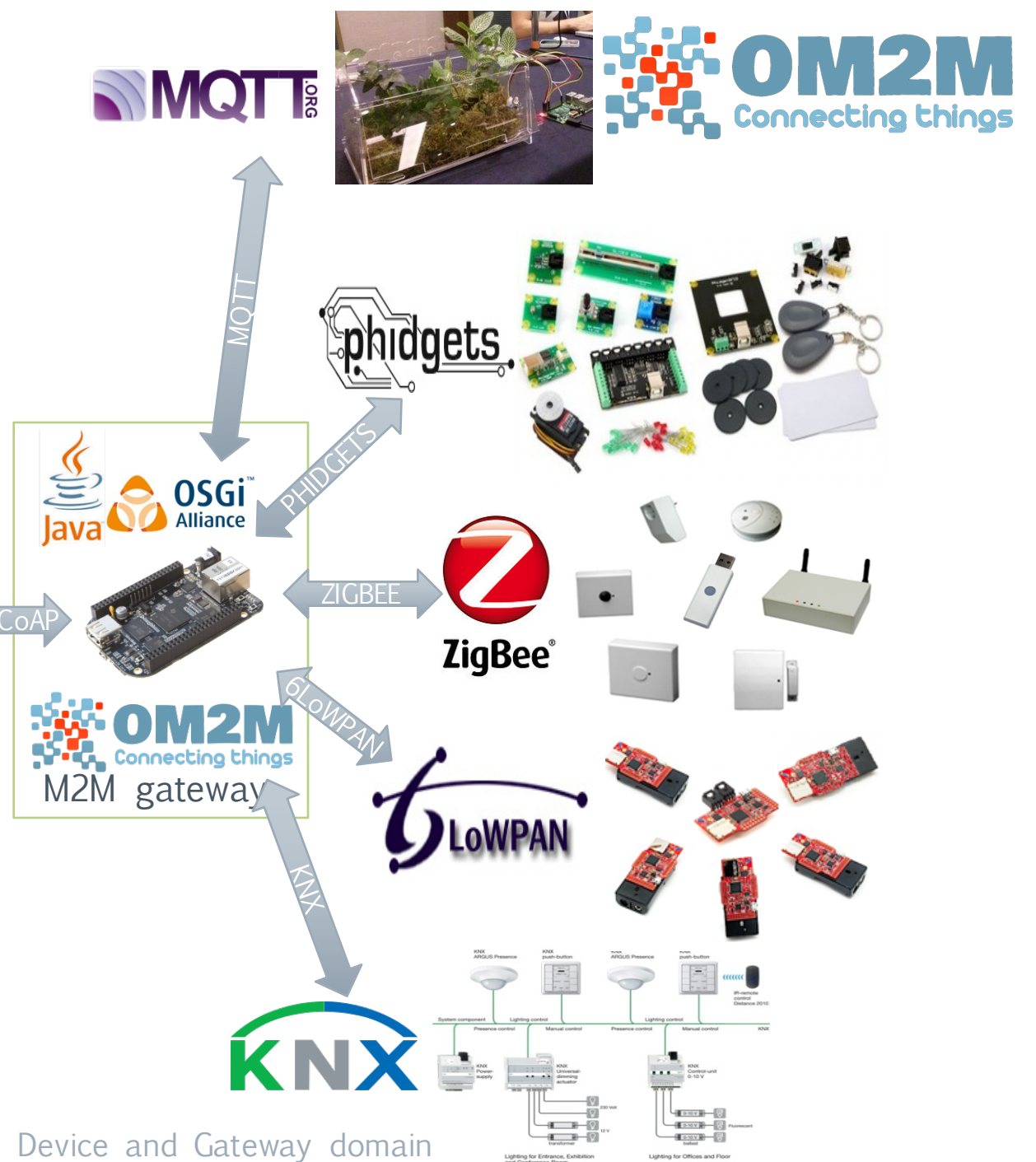
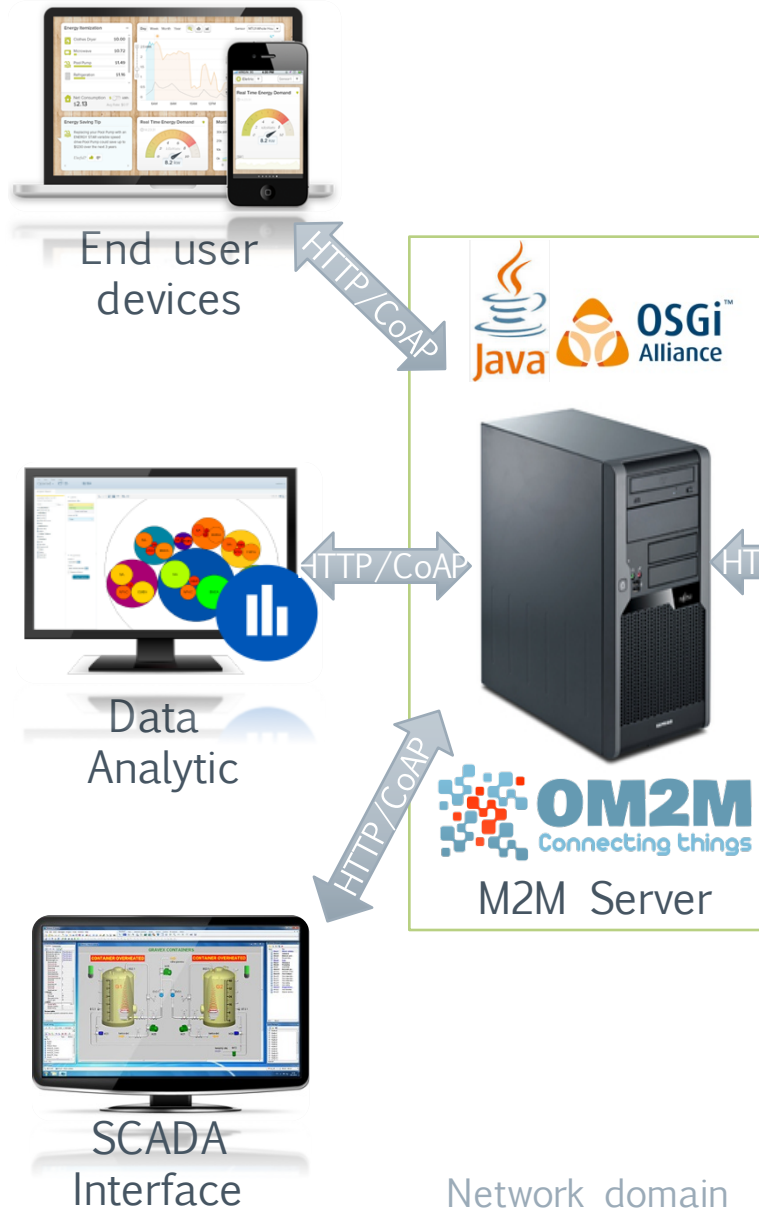
- Highly extensible via **plugins**
- **Flexible** OSGi container: Equinox, Concierge...

Build with **Maven** and **Tycho** for fast plugin development



OM2M main building blocks

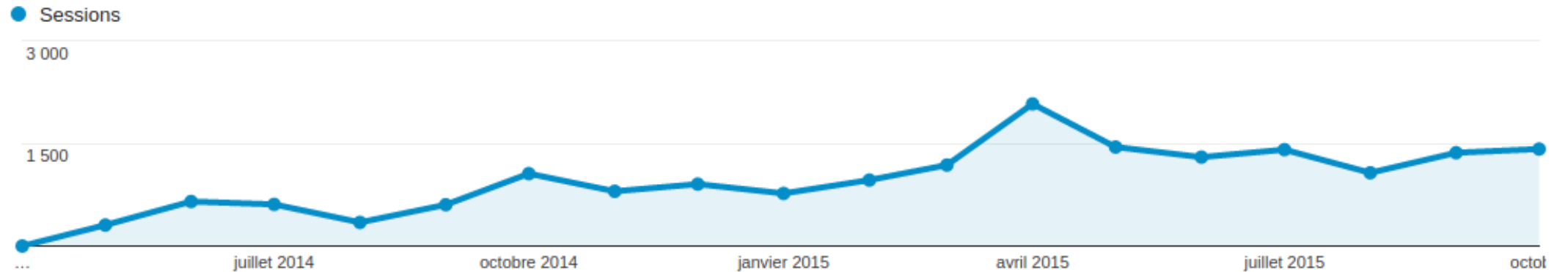
Architecture



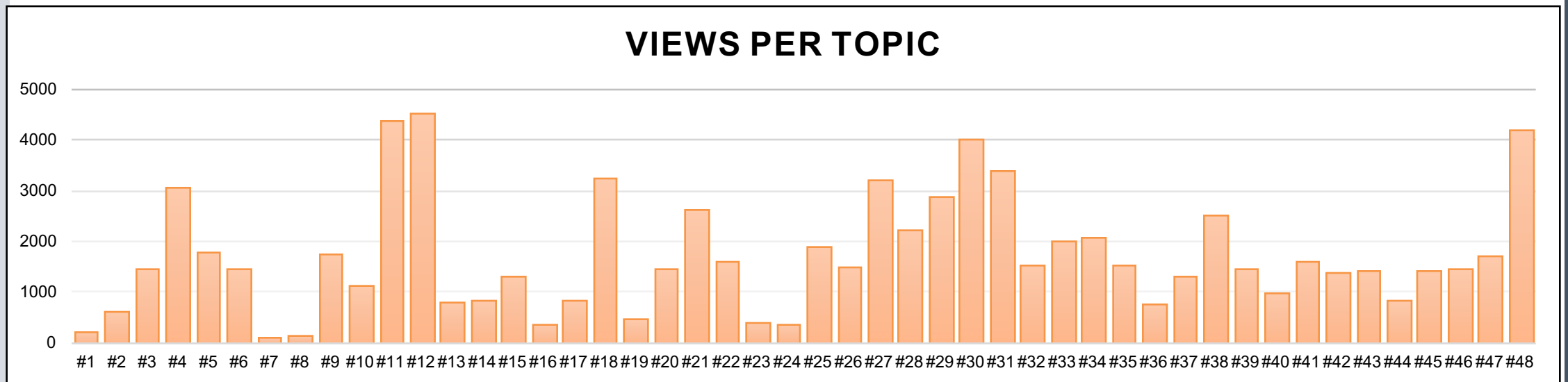


Project Stats

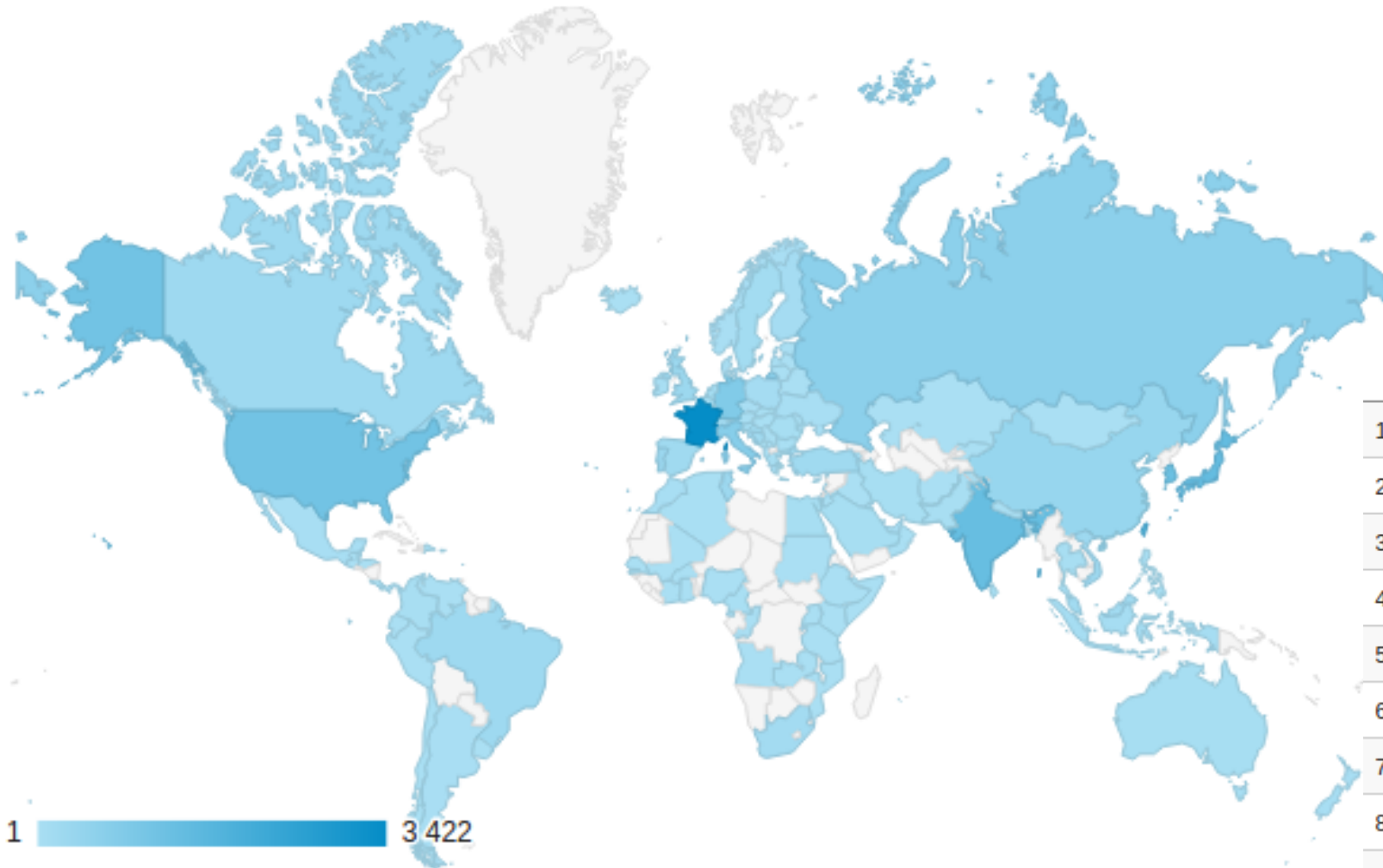
›Web site frequentation



›Topics on the dev forum



Project Stats



	Pays	Sessions	% Sessions
1.	 France	3 422	 18,74 %
2.	 Taiwan	1 930	 10,57 %
3.	 Japan	1 445	 7,91 %
4.	 India	1 398	 7,66 %
5.	 South Korea	1 308	 7,16 %
6.	 United States	1 152	 6,31 %
7.	 Germany	848	 4,64 %
8.	 Italy	723	 3,96 %
9.	 Russia	617	 3,38 %
10.	 China	387	 2,12 %



Project stats



›New Contributors and Committers

–New Direct **committers**:

- François Aissaoui (Phd. Student, Engineer, LAAS-CNRS)
- Guillaume Garzone (Phd. Student, Engineer, LAAS-CNRS)

Worked on **publication** of v0.8, and **design & development** of v.1.0

–Upcoming **Contributors**



›**Orange & SierraWireless**

- contribution with OSGi expertise (*knoplerfish*)
- Improvements of the platform
- Interworking proxy entities





Project plan



›Releases

–April 2015: [OM2M v.0.8](#)

›Key features:

- Persistence policy** DAO layer JPA EclipseLink + H2 db
- SmartM2M** standard implementation
- HTTP/CoAP** binding
- Performance** improvements

–Short term: v.1.0

›Date: December 2015

›Key features:

- oneM2M**: implements the oneM2M standard
- Architecture**: improvement of the architecture for more flexibility, OSGi (Equinox, Concierge)
- Persistence flexibility** SQL/NoSQL databases
- ShowCase** oneM2M in **December**



Project plan



›Next releases

–Short term (v.0.8)

›Date : Beginning of 2016

›Key features:

–**improvement**: flexibility with other OSGi environments

–**Minor functionalities**, Bug fix, etc.

–Mid-Term (v.1.0)

›Date: mid 2016

›Key features:

–**Next steps**: integration of the oneM2M evolutions

–**Updates of IPE**: provide IPEs to interface technologies (ZigBee, MQTT, KNX, HUE)

–**LWM2M**: first steps to a communication with LWM2M

–**Dashboard** visualization interface

–**Security**: TLS-PSK, etc.



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)
- › **ZWave IP**
 - Low energy consumption
- › **EnOcean**
 - Energy Independent

- › **LWM2M**
 - Device management

- › **A Dashboard!**
 - OpenSCADA? Birt? Home made
- › **Constrained environments (BBB, openTheBox)**



Collaboration opportunities



›Already using:

- Californium** for CoAP
- Paho** for MQTT Client

›Planning to use / Points of interest

- Mosquito** for MQTT Broker
- Birt** for data visualization
- OpenSCADA** for dashboard
- OMA LWM2M** for device management
- Wakaama / Leshan** as a LWM2M client
- Concierge** for mobile deployment



Thank you

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