



Presentation on OSGi Alliance

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oneM2M Industry Day



What is the OSGi Alliance

Founded in 1999

Proven, Mature
Software Architecture

Transparent
Development
Process

Strategic
Partnerships/
Collaboration



Global
Ecosystem

Best Practices

Industry & End
User Adoption

The OSGi Alliance

- The OSGi Alliance is a global non-profit technology corporation and counts many leading software vendors, suppliers, service providers and other organizations among its membership.
- A wide range of open source projects and commercial products use OSGi technology for IoT, cloud and enterprise markets.
- OSGi Alliance members include:



Deliverables

- To foster a valuable cross-industry ecosystem, the OSGi Alliance delivers:
 - **Specifications**
 - **Reference Implementations**
 - **Test Suites**
 - **Certifications**
- OSGi is an Open Standards body
 - **Specifications are royalty free to implement**
 - **All APIs are published under the Apache 2 License**

OSGi is proud to be a **democratic**, **collaborative**, and **non-profit** organization that is operating in a **fully transparent** environment and **open to everyone** to join and contribute.

OSGi Users Forums

- 11 OSGi Users' Forums around the world
- Japan and UK are the two largest



Extract of the OSGi Ecosystem

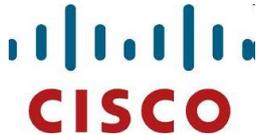


OSGi Adoption

Home & Building Automation



AT&T Digital LifeSM



Home Gateway



OSGi mBS powered
Touch Panel



Home Management & Control



Home Gateway



Home Area Network and Cloud
for monitoring home,
energy usage and devices



Building Automation and
Facility Management



Media Server



Smart grid enabled
domestic appliances



Home automation system
run from the ClareCloud

Source: ProSystem makewave & Internet

OSGi Adoption Telematics & Fleet Management



In Vehicle
Telematics



Public Transport
Telematics



Mobile Integration Platform
For
Onboard Train Systems



Public Transport
Telematics



30,000+ Truck
Fleet Management
System



In Vehicle
Telematics

Source:  ProSyst  makewave & Internet

OSGi Adoption

Enterprise

IBM
Websphere
Liberty Profile

aviarc

Cincom

FJA



U.S. DEPARTMENT OF DEFENSE



CME Group

Deutsche Bank



Source: Mailing lists, blogs, conferences and internet postings

Events in China in 2017

- Joint workshop between CCSA and OSGi in Guangdong on March 28th.

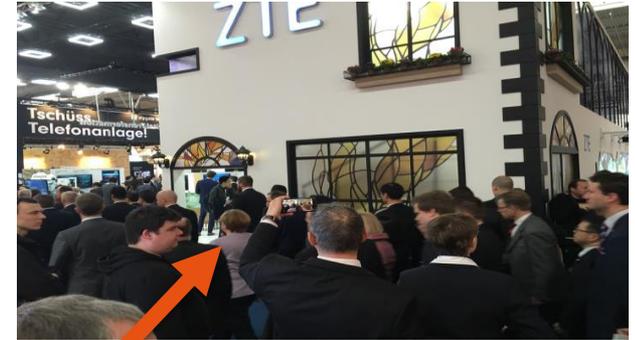


On the Breakfast News in Guangdong

- China OSGi Developer Outreach in Shenzhen on March 28th
Hosted by Huawei and in cooperation with Bosch, Liferay, China Users' Forum Chairman and Shenzhen JUG

Some Other Events in 2017

- CeBIT – Hannover, Germany March 20 -24



Angela Merkel, German Chancellor

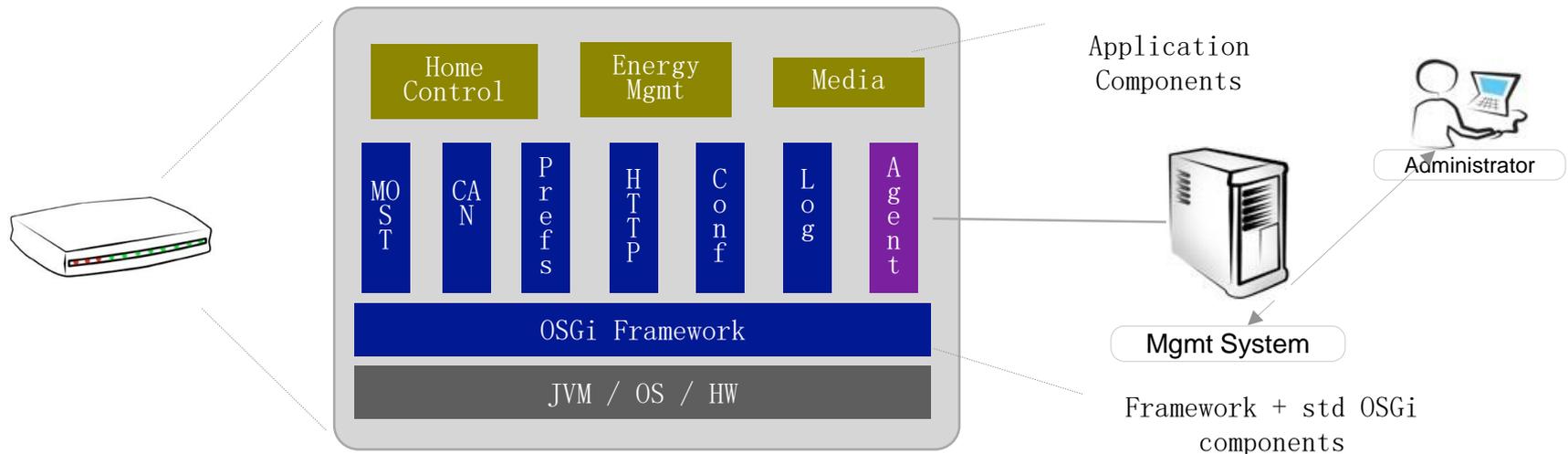
- Joint workshop between oneM2M and OSGi IoT EG in Stockholm, Sweden on June 28th.
- The [OSGi Community Event 2017](#) is October 24-26 in Ludwigsburg, Germany, and co-located with [EclipseCon Europe](#). As always there will be plenty of talks, BOFs, social events, beer, wine and food.

What Does OSGi Alliance Do?

- A modular runtime for the Java Virtual Machine
 - **Modules can be added to or removed from a running framework**
 - **Module dependencies are enforced at runtime**
 - **Remote management and monitoring capabilities**

The OSGi Service Platform

- OSGi is a Standardized Software Execution Environment
 - Component based module system defined in Java
 - Service oriented & remotely managed (OMA & TR-69)
 - Works like an operating system for small applications called Bundles
 - Ideal for a home gateway, m2m gateway, or similar equipment

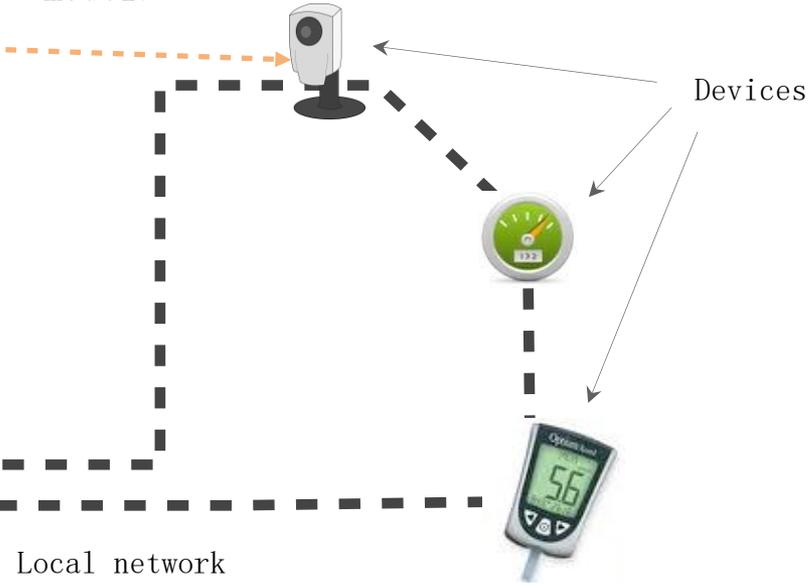
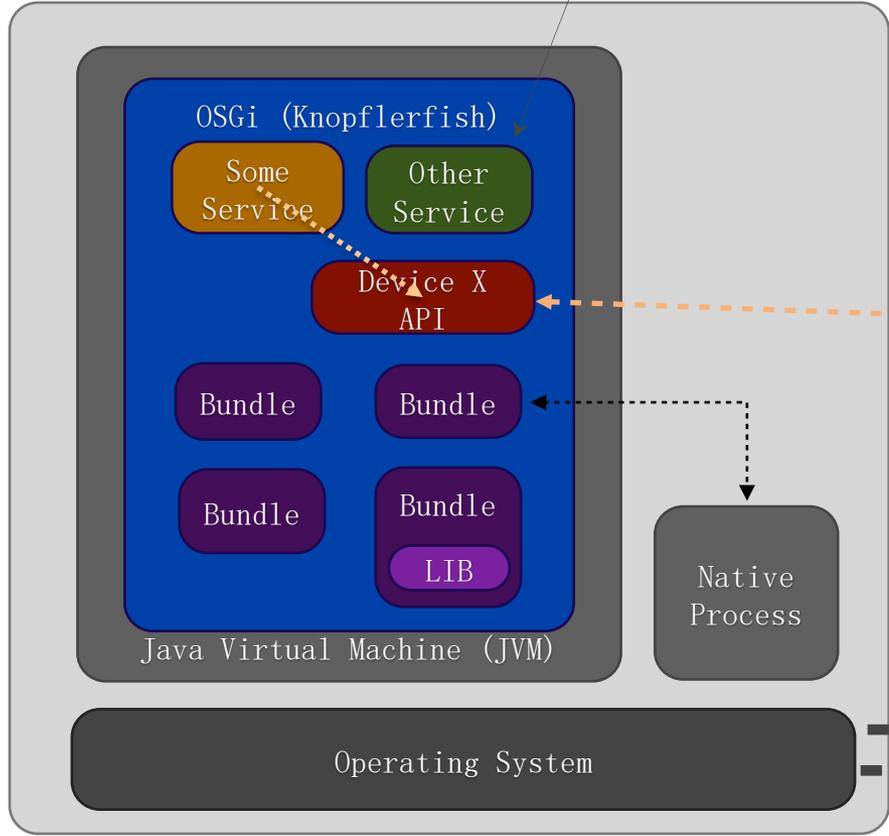


OSGi as an Embedded Integration Platform

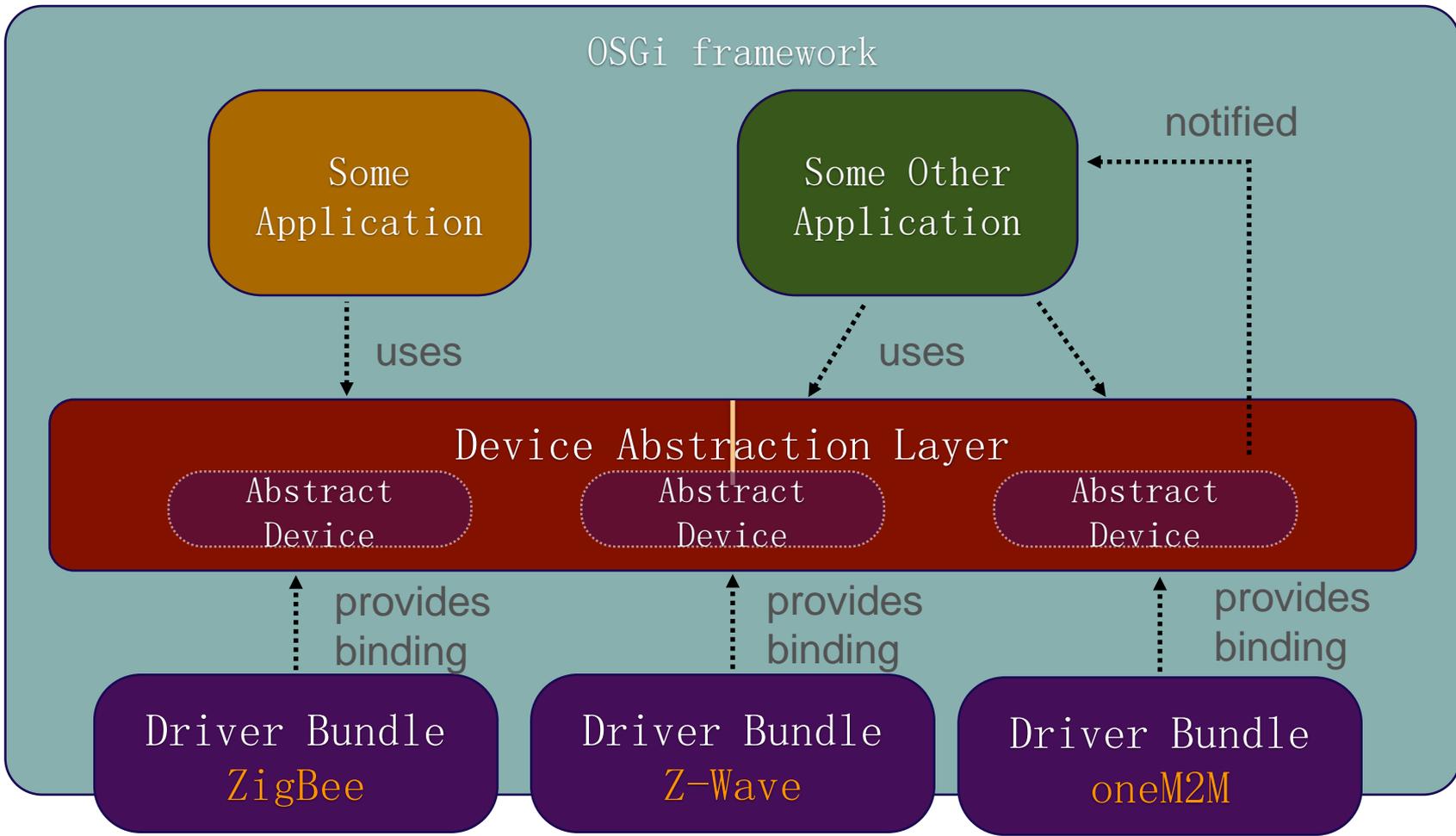
Service is logically using device, but physically abstracted

OSGi provides a sandbox in which bundles exist and exchange data.

The Device X API is an abstract model / API of devices (sensors / actuators). The Service would use this API to interact with the devices. They do not need to know anything about the actual device or network technology used, instead use this abstract model.

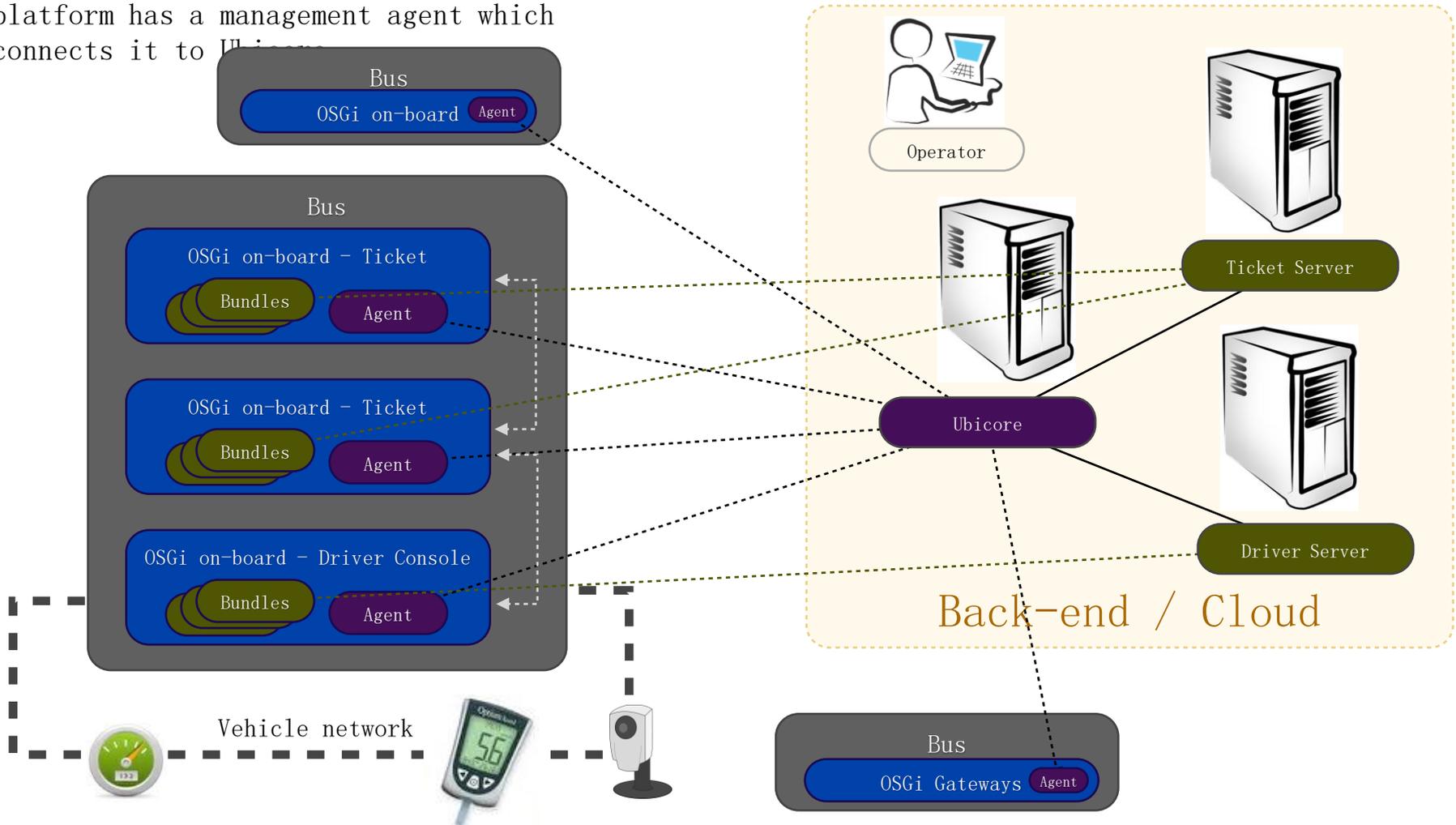


OSGi Defines a Device Abstraction Layer



Example of an OSGi IoT Use Case

All buses are equipped with one or more OSGi based on-board computers / devices. Each OSGi platform has a management agent which connects it to the Back-end / Cloud.



The OSGi Alliance IoT Expert Group

The OSGi Internet of Things Expert Group (IOT EG) is chartered to define the technical requirements and specifications to tailor and extend the set of OSGi Specifications to address information technology software infrastructure in Internet of Things scenarios.

OSGi and oneM2M

- To bring together the two ecosystems.
- Interworking Work Items created in both organizations.
- With the objective to enable mutual service discovery and exposure of both standards. Services and interfaces defined by OSGi can be mapped to oneM2M defined resources, and vice versa, oneM2M defined resources can be mapped to OSGi defined services and interfaces.
- Any OSGi compliant device can be connected seamlessly to oneM2M system and viewed as a oneM2M entity by oneM2M defined CSEs and AEs. And vice versa, oneM2M compliant entities can be connected with OSGi devices.

Take Away

- **OSGi Alliance is the only open industry standard for modularity**
- **Decreases development and maintenance costs**
- **Reduces Time to Market**
- **Enables agility and continuous release**



More Info

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