

Open APIs
for Open
Minds

How to join the FIWARE IoT Ready Programme

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AT4 wireless

Certification of IoT devices

IoTServices@at4wireless.com



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- **FIWARE IoT Ready Programme**
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About FIWARE (I)

The **FIWARE Community** is an independent open community whose members are committed to build an open ecosystem around public standards and free software

It will ease the development of new Smart Applications in the Internet of things

IoT



About FIWARE (II)

The FIWARE Community is not only formed by contributors to the technology (FIWARE platform), but also by those who contribute in building the **FIWARE ecosystem** and making it sustainable over time.

This group includes all those who collaborate in the promotion of FIWARE, with different initiatives such as: FIWARE_Lab, FIWARE Accelerate and FIWARE iHubs.

The last initiative is getting the IoT Ready Certification thanks to the **FIWARE IoT Ready Programme**.



About FIWARE (III)

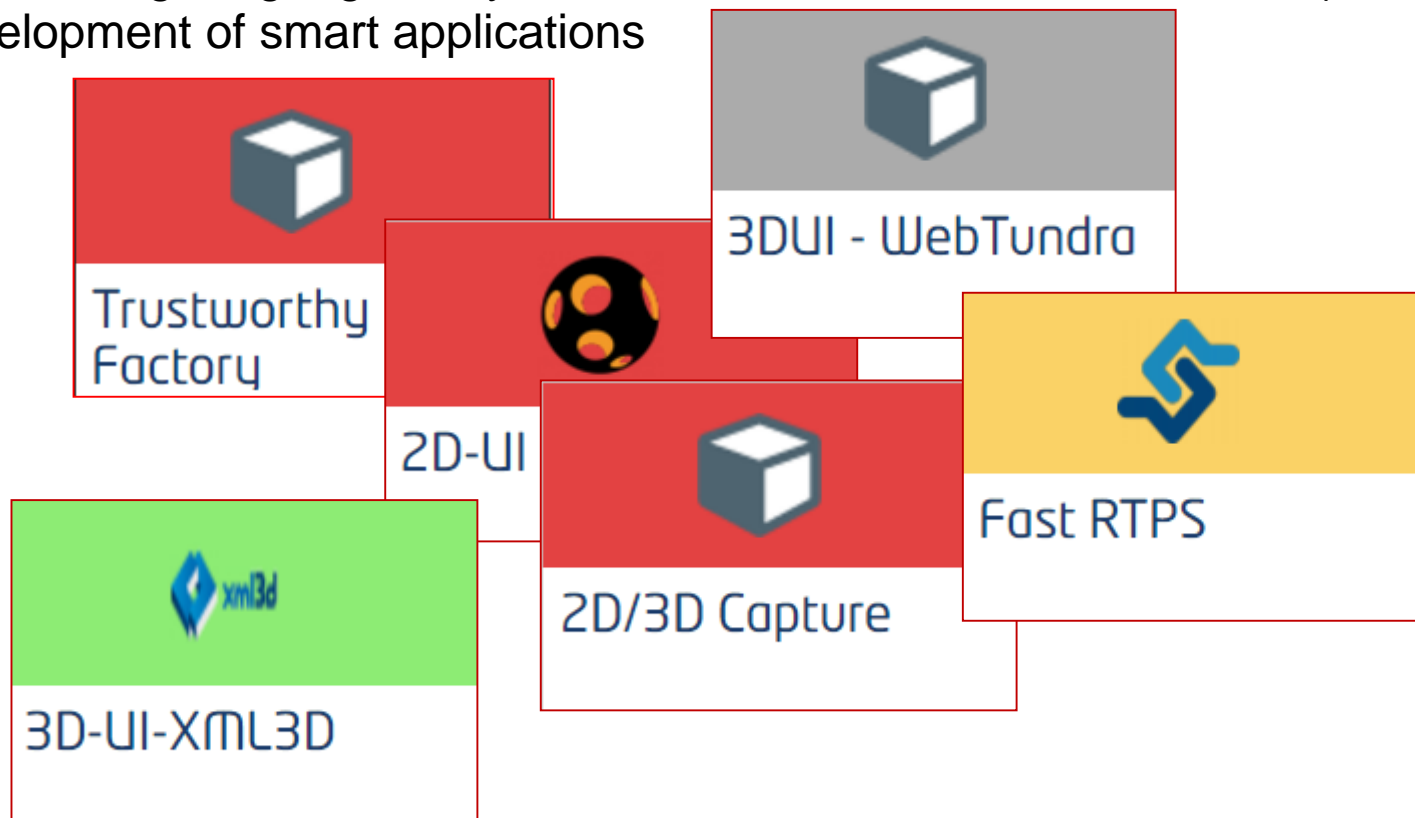
The **FIWARE platform** provides a collection of APIs (that provides simple, fast powerful programming language easy to learn and to feel comfortable with) that allows the development of smart applications

SmarCities

eHealth

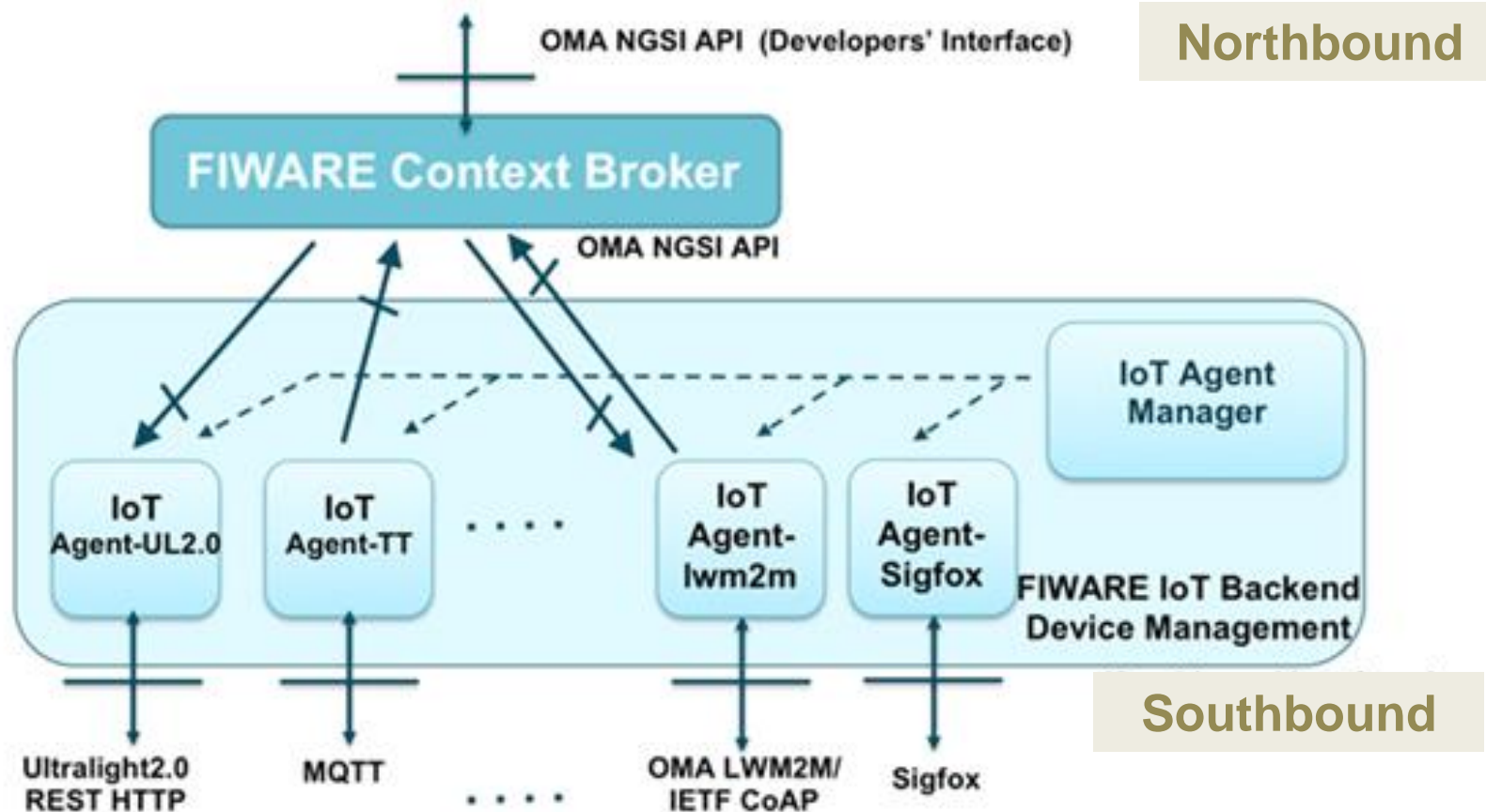
SmartFarming

...



About FIWARE (IV)

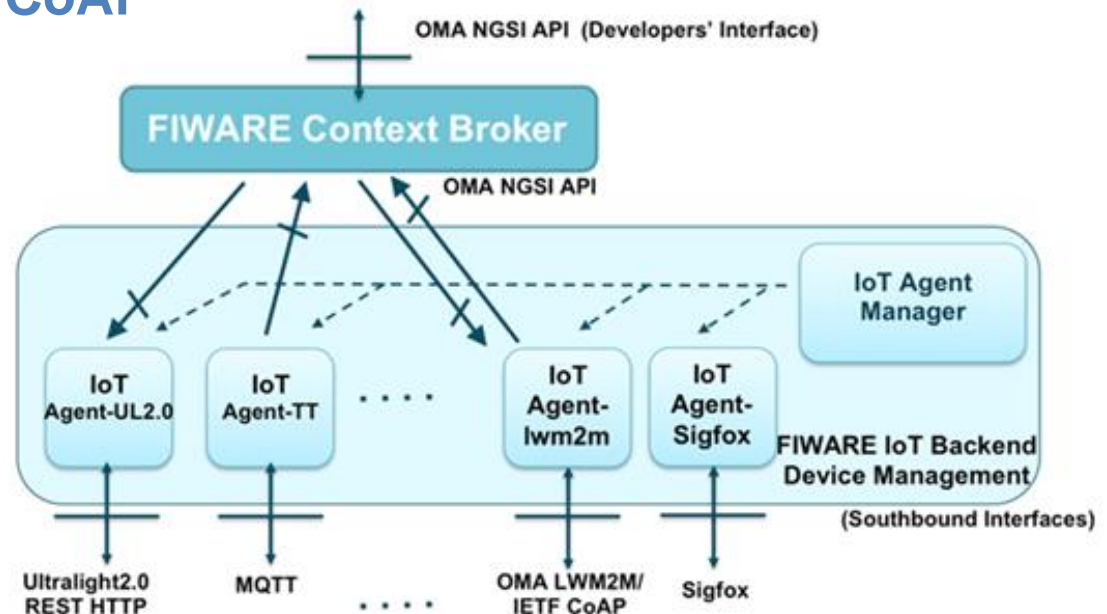
Any IoT standard or proprietary protocol can be connected to FIWARE via the IoT-Agent components.



About FIWARE (V)

Currently FIWARE IoT is providing IoT-Agents for:

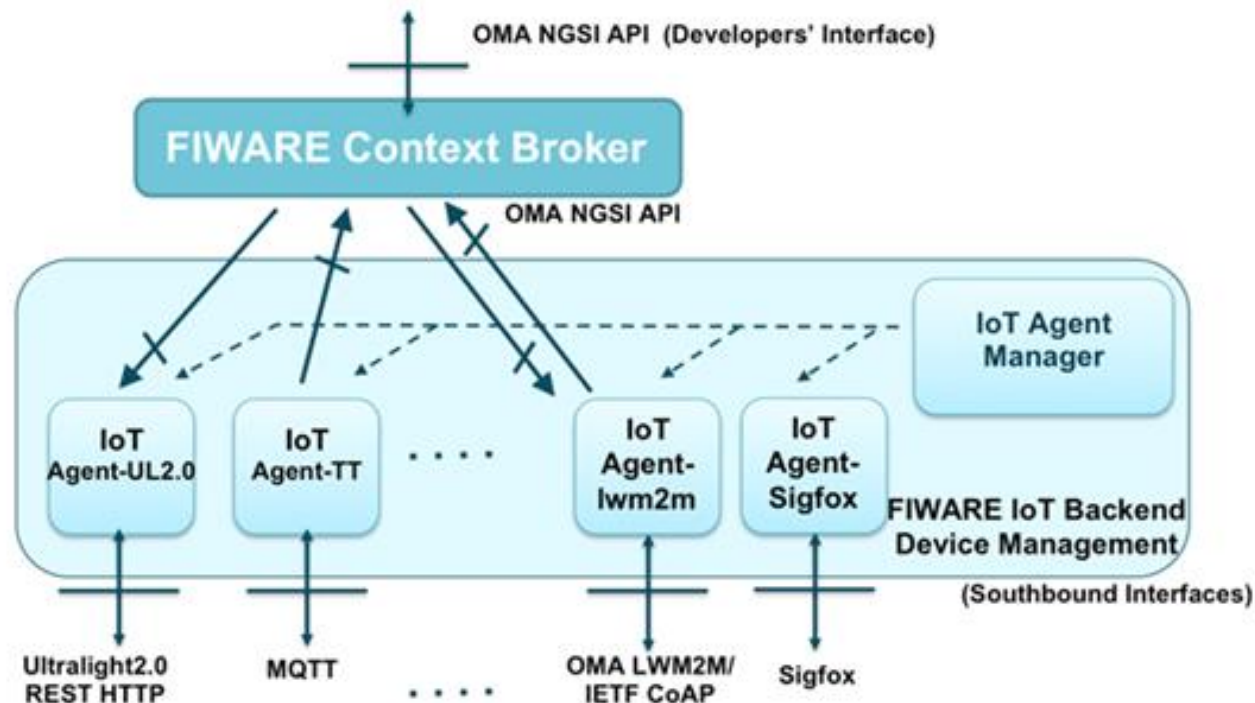
- Ultralight2.0 over HTTP or MQTT
- JSON over HTTP or MQTT
- OMA-LWM2M over CoAP
- Sigfox Cloud



About FIWARE (VI)

Additionally, any new standard or proprietary protocol might be implemented using a node.js IoT-Agent library

<https://github.com/telefonicaid/iotagent-node-lib>



About FIWARE (VII)



- At present, **89** cities from **19** countries in Europe, Latin America and Asia belong to the Open & Agile Smart Cities (OASC)
- The members of this Alliance have agreed to operate, share and publish their smart city data by means of the **FIWARE** interoperability model.
- Thousands of companies, including large corporations, startups, SMEs and individual developers worldwide are willing to provide their Internet of Things (IoT) solutions to these cities, basing their solutions on FIWARE open source platform components.
- The FIWARE ecosystem represents a great business opportunity for IoT products.

FIWARE IoT Ready Programme (I)

- FIWARE IoT Ready Programme aims to enlarge the FIWARE ecosystem, connecting relevant IoT sensors/actuators between different companies.
- FIWARE IoT Ready Programme provides the answer, as it is designed to demonstrate the ability of IoT solutions to seamless interoperate with FIWARE platforms covering the needs of thousands of developers.
- The goal of the FIWARE IoT Ready Programme is the **certification of IoT** devices, providing users a list of vendors distributing IoT devices and systems which can be easily connected to FIWARE ecosystems.
- The programme logo can be attached to the product once validated.



FIWARE IoT Ready Programme (II)

FIWARE IoT Ready Programme is a program designed to validate the following types of implementations:

- Proprietary devices with a **complete hardware and software solution**.
- **Software implementations** working on a general purpose hardware (such as Arduino, Raspberry PI, Mini-PC, Mote sensor, etc.). This kind of products may use real or virtual sensors.
- **Libraries** to be used by different types of devices. This kind of product may use real or virtual sensors.



FIWARE auto-testing

The validation process is an auto-evaluation process.

It is assisted by FIWARE IoT Ready Programme reviewers

The reviewers can be contacted at IoTservices@at4wireless.com

During the evaluation process FIWARE IoT Ready Programme Reviewers will analyze the test logs and evaluate whether the device is connecting correctly with the public instance provided for testing.

Steps to validate your FIWARE implementation (I)

STEPS

1. Apply for validation
2. Setup the implementation.
3. Run tests.
4. Fill in the template provided.
5. Send information.
6. Reviewers perform evaluation.
7. Device is published in the FIWARE catalogue

Steps to validate your FIWARE implementation (II)

STEPS

1. Apply for validation of the implementation to IoTservices@at4wireless.com.

After that, the user will received a document including the procedure to follow.

2. Setup the implementation to start to work with the FIWARE platform.
3. Develop the tests according to the supplied guide, using the available public instances and recording all logs files generated during the tests. Optionally you may use your own instance running the tests.
4. Fill in the template provided.

Steps to validate your FIWARE implementation (III)

5. Send to IoT Ready Program reviewers (IoTServices@at4wireless.com) the following information:
 - Company and hardware/software/virtual device information.
 - Template filled with the hardware/software/virtual device under test information.
 - Files or screenshots of the responses obtained during the testing against the IoT Stack public instances provided, for all tests.

I.e., all communication between the hardware/software/virtual device under test and the public instance APIs.
 - Company Logo.
 - Product (or product line) name.
 - Product webpage.

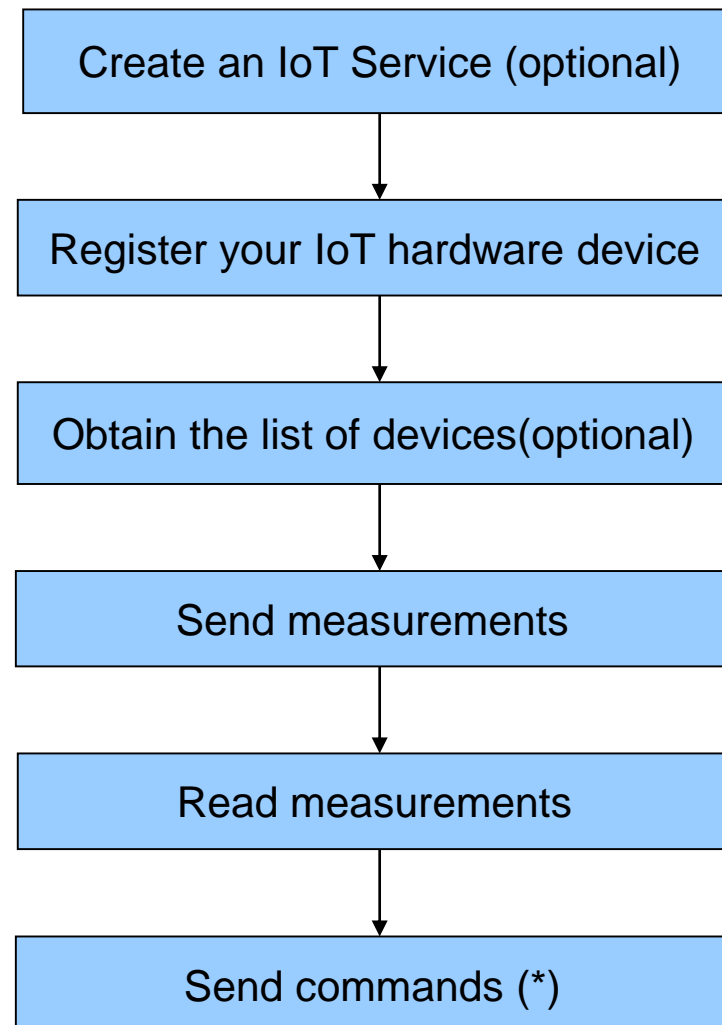
Steps to validate your FIWARE implementation (IV)

6. IoT Ready Program reviewers will evaluate the documentation provided and will contact the applicant in case any clarification is required.
7. Once the evaluation is finished the device will be published on the list of FIWARE IoT Ready commercial devices available at:
<http://catalogue.fiware.org/devices>.

The FIWARE IoT Ready Program has been successfully completed

Certification Tests (I)

The tests that need to be executed to validate your implementation are shown in the figure



(*) The “sending of commands” tests are mandatory in case the device implementation supports receiving commands

Certification Tests (II)

- **Create an IoT Service.** Objective: Verify that the implementation is capable of creating a new IoT service.
Note: Optional in case the testing public instance is used.
- **Register your IoT device implementation.** Objective: Verify that the IoT device implementation has been registered in the context broker.
- **Obtain the list of devices.** Objective: Verify that it is possible to retrieve the list of existing devices.
- **Send measurements.** Objective: Verify that the device implementation is able to send measurements.
- **Read measurements.** Objective: Verify that the device implementation is able to read measurements from the Context Broker.
Note. If the device does not have the option to read measurements, it will be possible to use other method (i.e., Postman SW)
- **Send commands.** Objective: Verify that device implementation is able to receive commands sent from the Context Broker.

Benefits of FIWARE certification (I)

- FIWARE certification is expected to be a requirement by operators and service providers when choosing IoT products for IoT verticals such as SmartCities, eHealth, SmartFarming, etc.
- The certification demonstrates compliance with the technical requirements established by FIWARE.
- It brings visibility to the certified products, as the device is displayed at the FIWARE website. <http://catalogue.fiware.org/devices>
- At this moment, the participation in the FIWARE IoT Ready Program is free, i.e., the certification has no cost for the vendor.



Home Enablers Bundles Tools IoT Ready

Available Commercial Devices

About Available Commercial Devices Open Hardware Platforms FIWARE IoT Stack

Benefits of FIWARE certification (II)

Benefits for the consumer

- ✓ **Confidence** to consumers, who purchase products certified and evaluated by an impartial and recognized certification body.
- ✓ **Added value** when selecting products from different providers.
- ✓ **Protection** from purchasing substandard products.



Benefits for the supplier

- ✓ Facilitates the commercialization of the products, by a **known and recognizable identification** (FIWARE).
- ✓ **Competitiveness** through the quality of the FIWARE products.
- ✓ Certification strengthens the **credibility** of the product.
- ✓ Facilitates entry into **new markets**.

AT4 wireless activities in FI-Core

- Consultancy: Guide vendors through the certification process.
- Testing: Support vendors on testing execution.
- Certification Body: AT4 wireless, acting as IoT Ready reviewer, evaluates the documentation provided by vendors (Logs, Template, Manuals).
- Administrative: Update FIWARE catalogue of commercially available products.
- Technical support: Creation and maintenance of the Program documentation including the creation of the 'How to validate your Implementation in FIWARE' guide. This guide identifies the procedures and requirements needed to obtain the validation, including the test cases definition.
- Technical support: Maintenance of the available public instances required to perform the certification testing.

Join to FIWARE IoT Ready Programme

Please send an e-mail to:

IoTServices@at4wireless.com

requesting your participation in the IoT Ready Programme.



About AT4 wireless

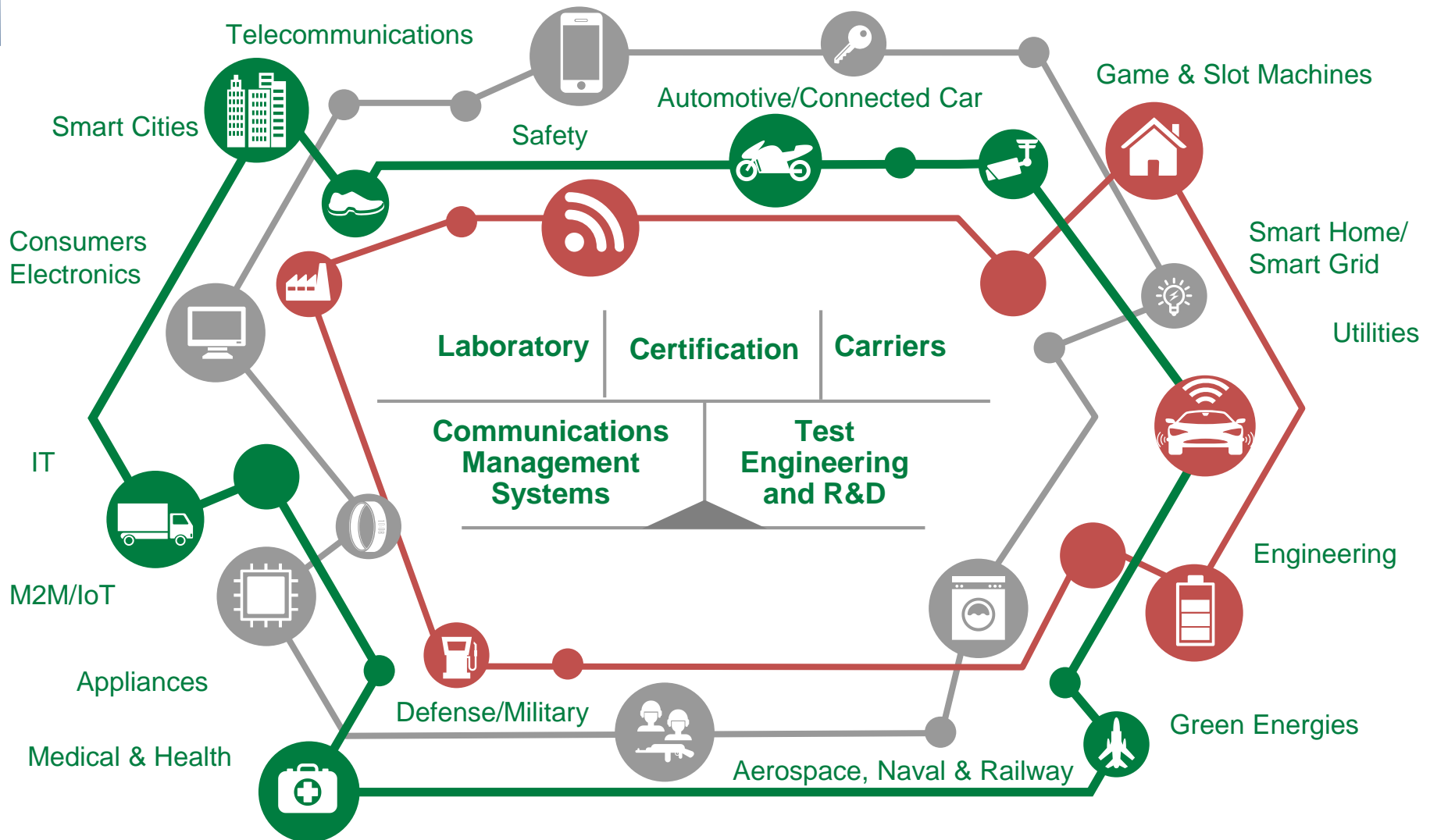
AT4 wireless' mission is to provide advanced technological services worldwide, to ensure the safety, compliance and reliability of products and services.

Testing and certification

Active in the IoT ecosystem



About AT4 wireless



About AT4 wireless

more than 100
Worldwide Partners
and over 6.500
**Compliance
Certificates** achieved



Herndon
Concord
Austin
North Wales
Princeton



Santiago, Chile



Arnhem, NL



Dresden, GER
Halle, GER
Milan, IT
Lyon, FR
Barcelona, SP
Malaga, SP
Istanbul, TR
Stuttgart, GER

Tel Aviv, IS



Dubai, UAE



Tokyo, JP
Taipei, TW
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Neihu, TW
Hsinchu, TW
Beijing, CN
Suzhou, CN
Shenzhen, CN
Shanghai, CN
Wenzhou, CN
Guangzhou, CN
Kunshan, CN
Hong Kong
Xiamen, CN
Ningbo, CN
Zongshan, CN
Seoul, KOR



About AT4 wireless

Automotive



IoT



Health



WLAN

Wireless Local Area Network



WRD

Wireless Short Range



Wireless Charging



WWAN

Wireless Wide Area Network



WPAN

Wireless Personal Area Network



Standards Certification



Industry Promotion



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| Thank you!

<http://fiware.org>

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