Open APIs for Open Minds

IoT Trends in Smart Cities

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FIWARE

Which effects will Digitization have?

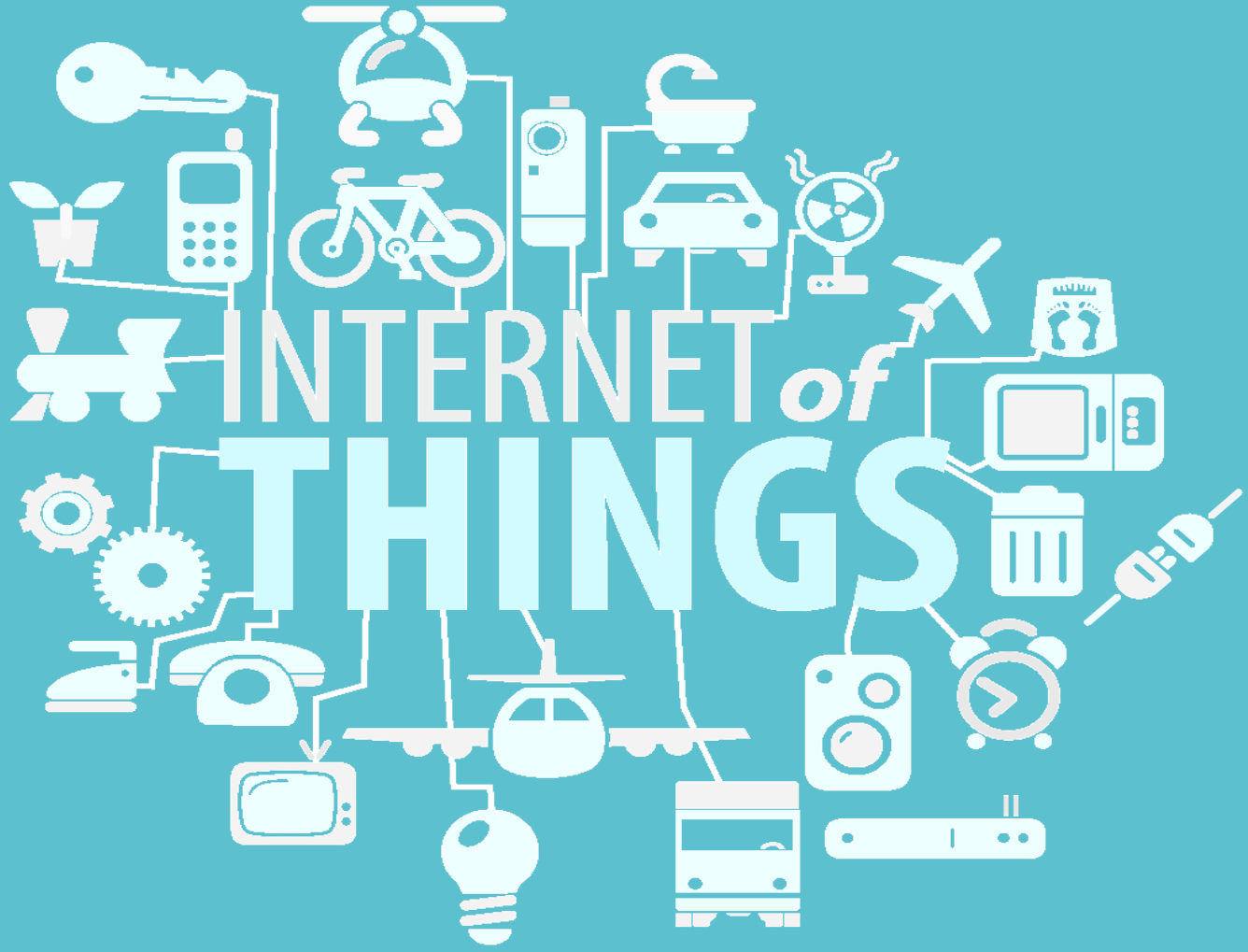
„Everything that could be digitized and transformed into data sets will be digitized and transformed into data sets!“

„Everything that could be connected will be connected!“

„Everything that could be automated will be automated!“

FIWARE

The Internet of Things is becoming the driver of a new era of Smart Solutions



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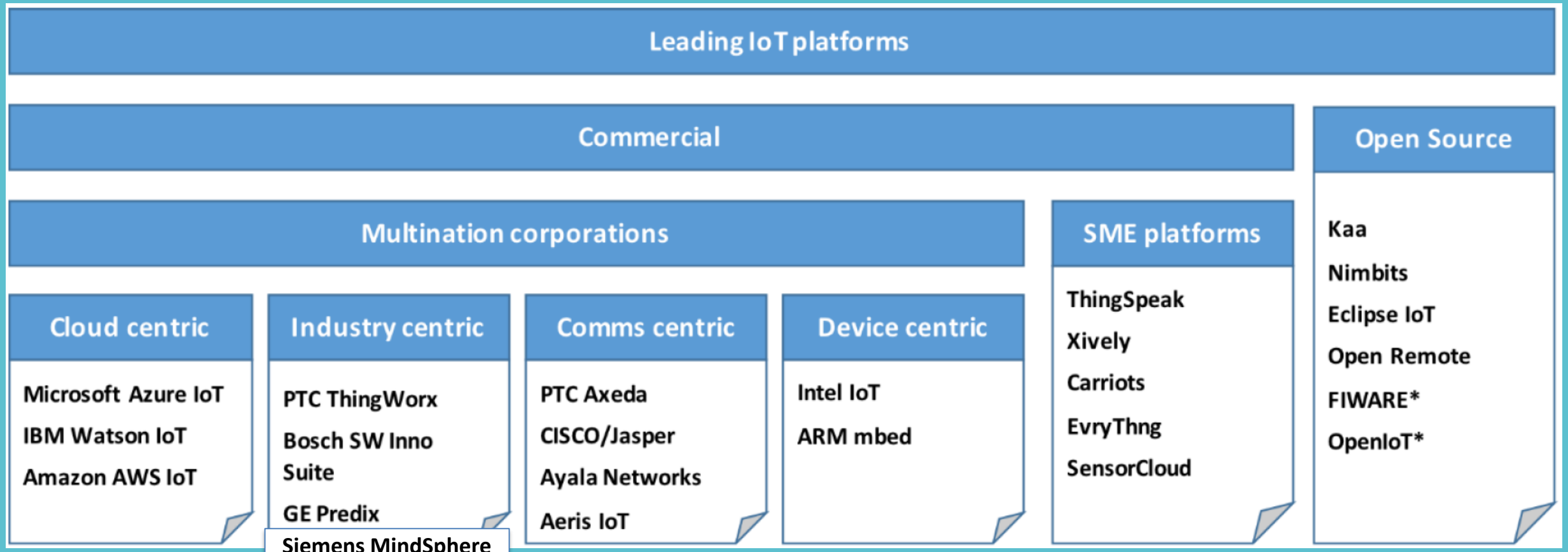
But … what makes an application really be “smart”?

Does this guy look really smart?

FIWARE

Leading IoT Platforms out of actually more than 360 world wide



Soruce: European Commission, published 10/2016

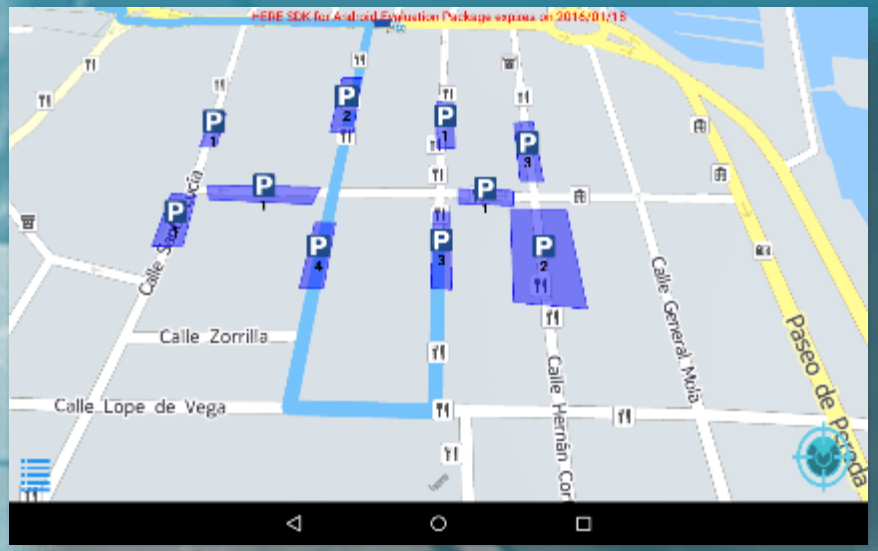
What if …

there were a standard API for accessing context information?

Users will enjoy portable solutions

City of Porto

City of Santander



Entrepreneurs will benefit the opportunities of a larger market

“We can invest on development of solutions we don’t have to adapt for each and every customer”

Shared context information would boost innovative services and the development of multi-side markets

FIWARE

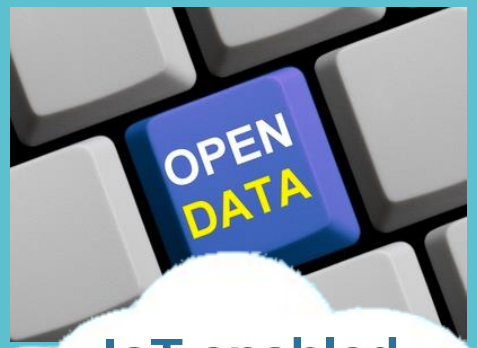
What is FIWARE?

- **An open source IoT platform to access context information**
- **A standard for exchange of context information:**
  NGSI (Next Generation Service Interface)
- **Generic Enablers and Solutions to provide Smart Services**

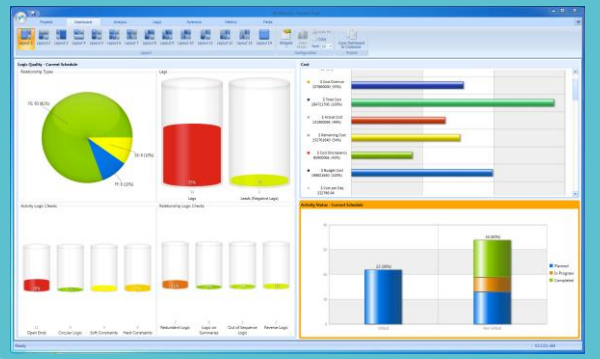
Once context information is gathered, a lot of useful complementary FIWARE enablers can be used

Advanced Web-based UI (AR, 3D)

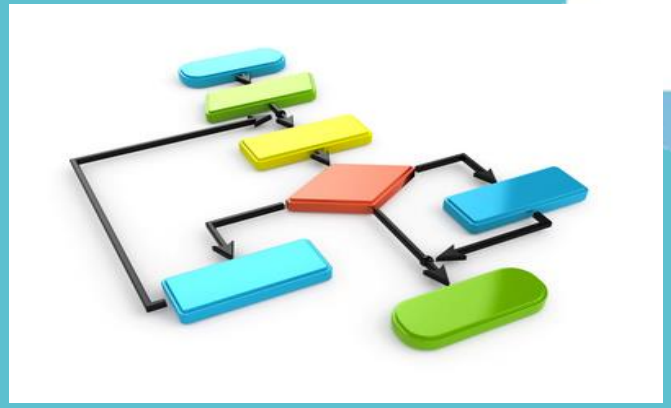
Open data publication



Data/Apps visualization



IoT-enabled Context Information Management



Complex Event Processing

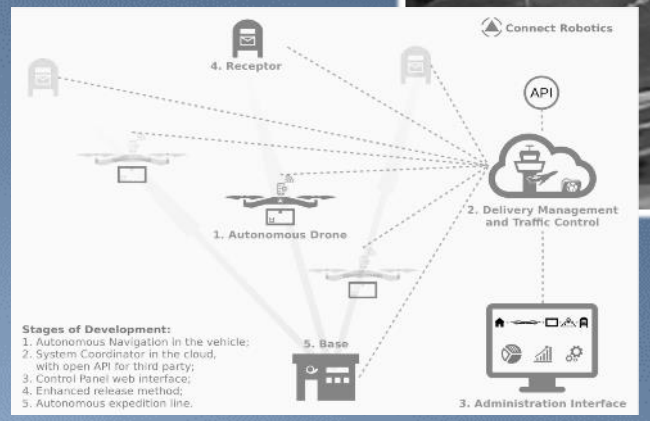
Multimedia processing

Big Data Analysis

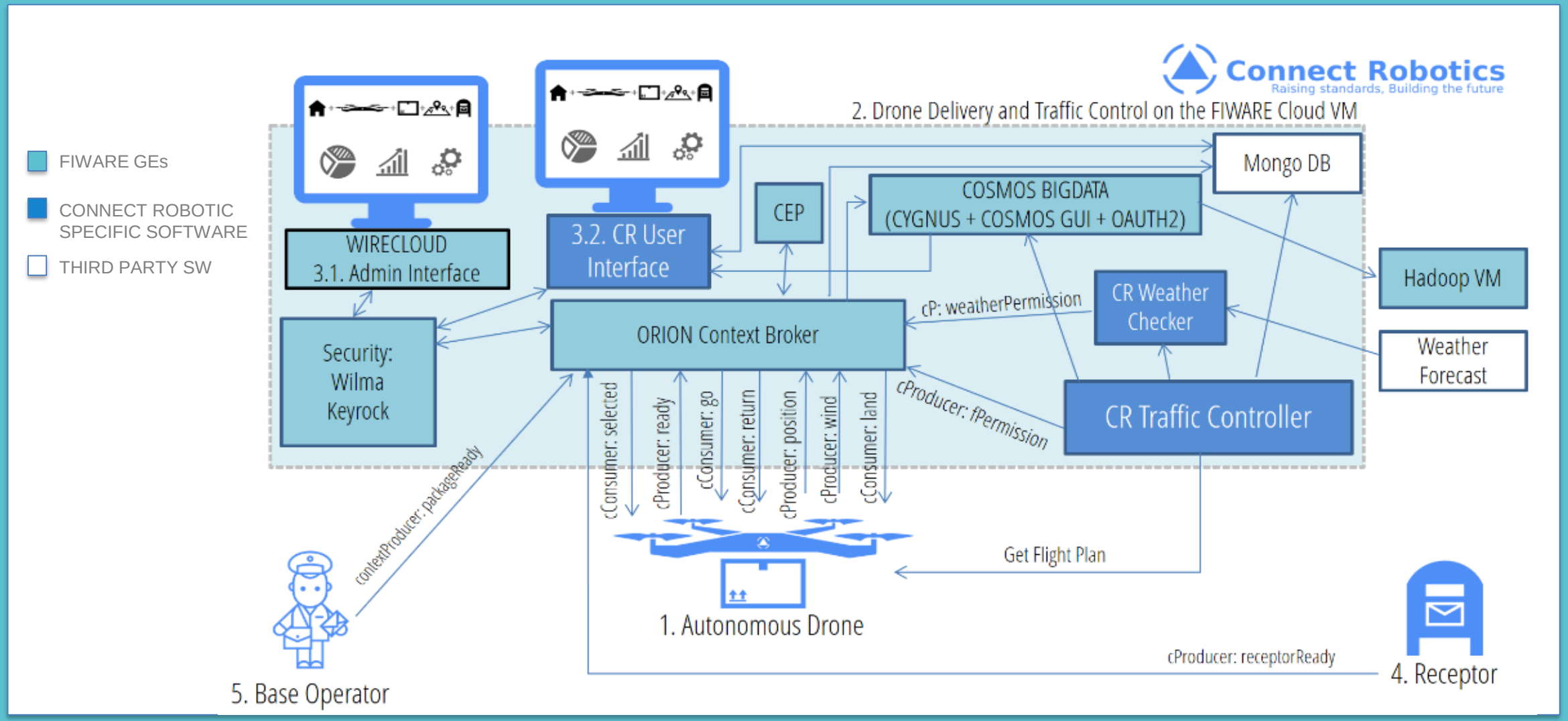
FIWARE

Connect Robotics

- Goal: Automate drones for delivery services
- Target customers: Logistic Operators, Medicine distributors
- Main features:
  - Automated flight planning
  - Context-aware Air Traffic Control
  - Control of aerial corridors
  - Focused to manage deliveries



CONNECT ROBOTICS - System Architecture



Adoption of FIWARE standards helps to build a connection between industry and cities …

OPEN & AGILE SMART CITIES

109 cities
22 countries

Common APIs:
- FIWARE NGSI to start with

Standard Data Models:
- CitySDK and more

Platform for Open Data/API publication

Driven by implementation approach

tmforum

TM Forum & FIWARE APIs are part of a Business Framework that serves the emerging economy of data.

NIST National Institute of Standards and Technology

FIWARE has been recognized as major contributor for a shared IoT-Enabled Smart City Framework. The initiative is led by NIST

FIWARE

FIWARE

- **Overall FIWARE Mission:** To build an open sustainable ecosystem around public, royalty-free and implementation-driven software platform standards that will ease the development of new Smart Applications in multiple sectors.
- The history of **FIWARE** started five years ago with the **Future Internet** Private Public Partnership initiated by the European Commission under Horizon 2020
- 300 million Euro public funding have been invested to create an open source IoT platform, data standards and Apps
- A large ecosystems with nearly 1,000 start ups has been created
- The **FIWARE Foundation** has been founded in October 2016 in Berlin by four founding companies: Atos, Engineering, Orange and Telefonica

FIWARE Foundation Mission

FIWARE Foundation

The FIWARE Foundation is a legal independent body providing shared resources to help to achieve the FIWARE Mission by Empowering, Promoting, Augmenting, Protecting, and Validating the FIWARE technologies and the whole Community around them.

Main Tasks

- Management and further development of the FIWARE ecosystem
- Industrialization of the technology
- Enhancement of the former focus vertical **Smart Cities** to **Smart AgriFood** and **Smart Industry** incl. Industrie 4.0
- Globalization of FIWARE

Thank you!

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