

ITU Arab Forum on Emerging Technologies
Algiers – Algeria, 14-15 Feb. 2018

**Sharing best practice approaches and experiences
from initiatives in the IoT domain**

Presented by:
Marco Carugi
ITU expert
marco.carugi@gmail.com



Outline

- The Alliance for IoT Innovation (AIOTI) and its support to pan-European IoT initiatives
- The FIWARE open platform and ecosystem



The Alliance for IoT Innovation (AIOTI) and its support to pan-European IoT initiatives

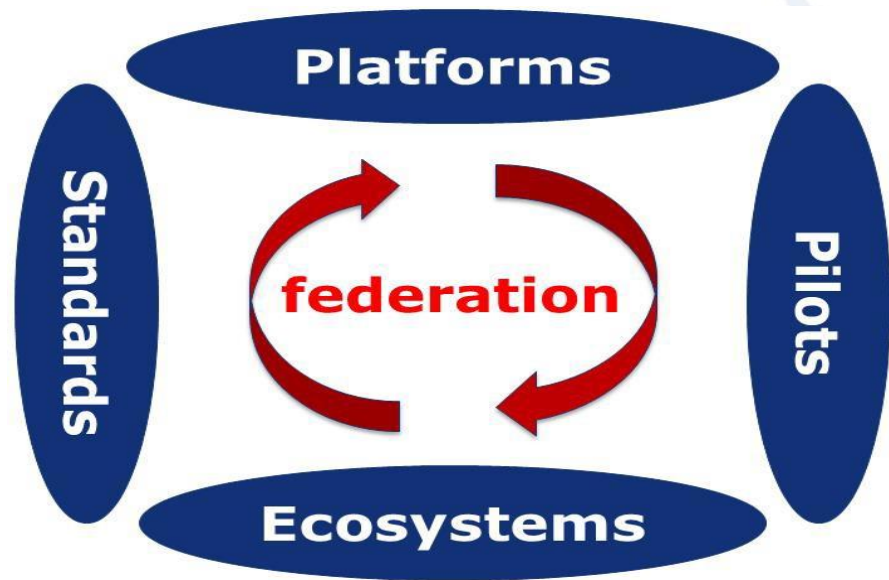
AIOTI strategic objectives

- **Create and master sustainable innovative European IoT ecosystems in the global context** to address the challenges of IoT technology, applications and deployment **including standardisation, interoperability and policy issues**, in order to accelerate sustainable economic development and growth in the new emerging European and global digital markets
- **Strengthen the integration across the digital value chain and foster coordination across different public funded industrial initiatives** and support the acceleration of IoT deployment in a Digital Single Market context
- Promote **global cooperation and collaboration** in the area of IoT
- **Mapping and bridging global, EU and Members States' IoT innovation activities**

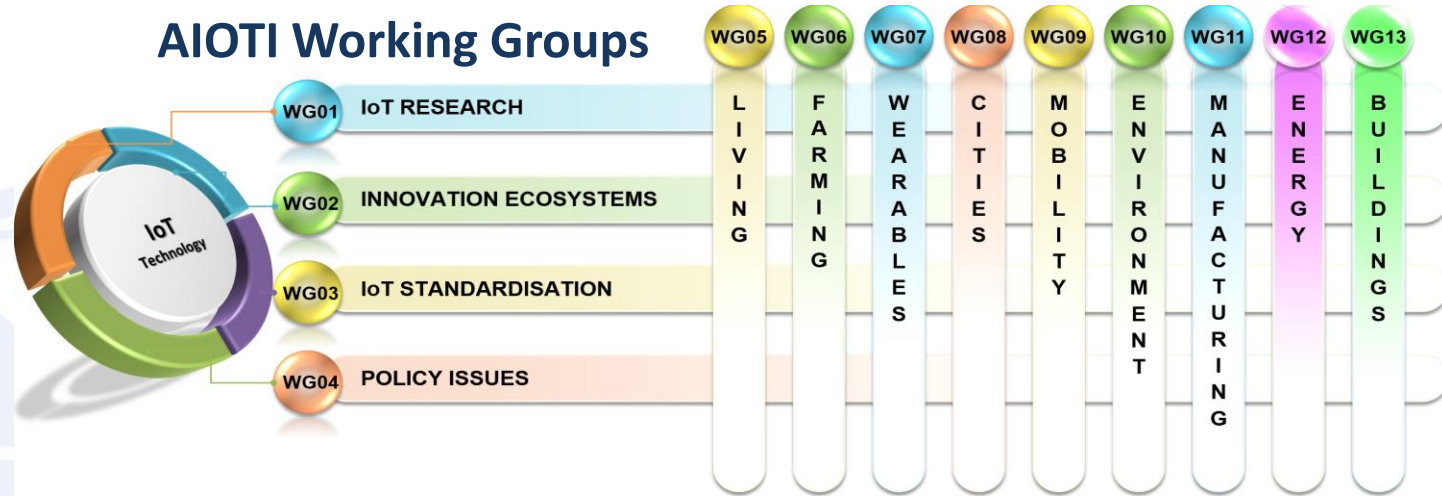
AIOTI website: <https://www.aioti.eu/>

Pan-European platforms and the supporting role of AIOTI

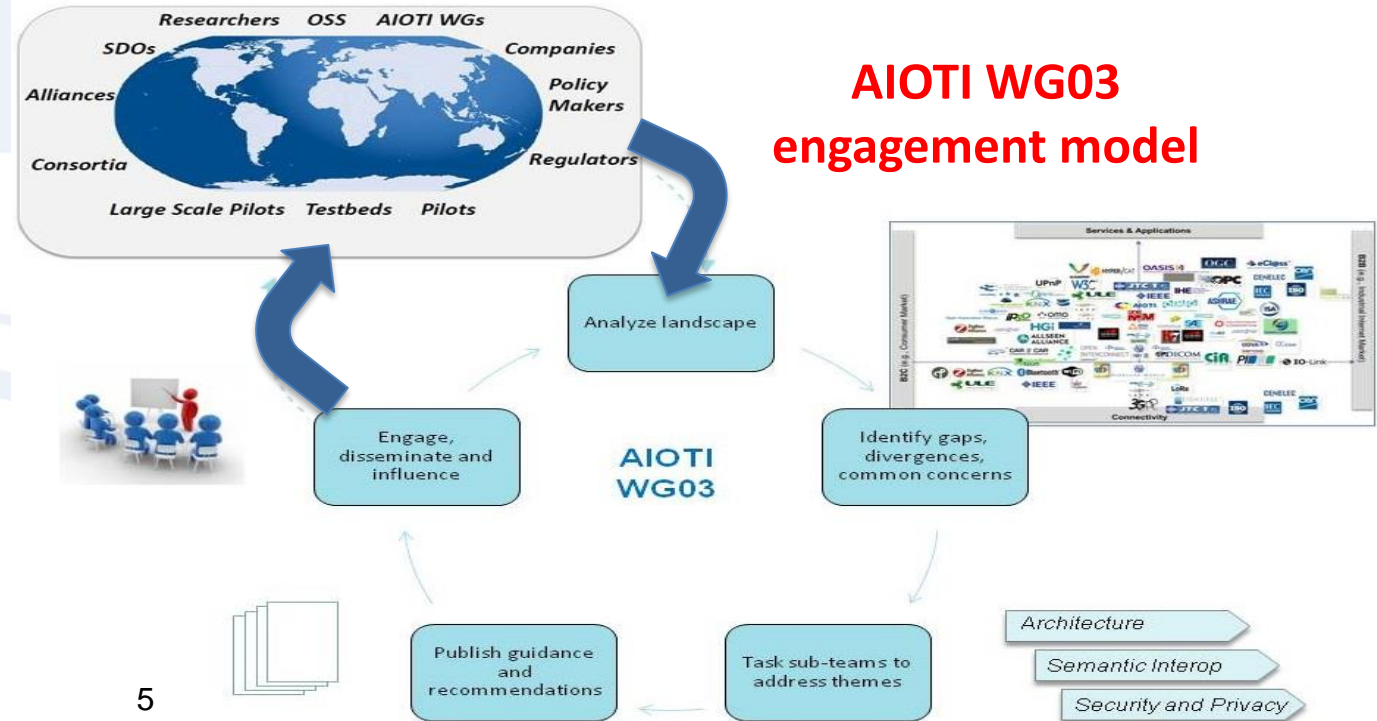
Platform building and piloting



AIOTI Working Groups



AIOTI WG03 engagement model



- Integration of key digital technologies
- Platforms, reference architectures, ...
- Reference implementations, large-scale pilots, experimentation environments
- Ecosystem building
- Standardisation

EC H2020 IoT Large Scale Pilots (started in 2017) and facilitated by AIOTI

- **ACTIVAGE** (Activating Innovative IoT *Smart living* environments for ageing well)
- **IoF2020** (*Internet of Food and Farm* 2020)
- **MONICA** (Management of Networked IoT *Wearables* – Very Large Scale Demonstration of Cultural and Security Applications)
- **SynchroniCity** (Delivering an IoT enabled Digital Single Market for Europe and Beyond) -> **IoT-enabled Smart City solutions**
- **AUTOPILOT** (*Automated driving* progressed by Internet Of Things)

NOTE – There are also two EC H2020 IoT CSA (Coordination Support Action) aiming to stimulate cooperation between IoT Large Scale Pilots

- **Create-IoT** (Cross Fertilisation Through Alignment, Synchronisation and Exchanges for IoT)
- **U4IoT** (User Engagement for Large Scale Pilots in the Internet of Things)

The FIWARE open platform and ecosystem

The basis of FIWARE is an open platform with open specifications and open source software (OSS)

③ Promotion

FIWARE Labs: users can experiment with the technology

FIWARE iHubs: support development of the community at local level, bringing support, training, certification

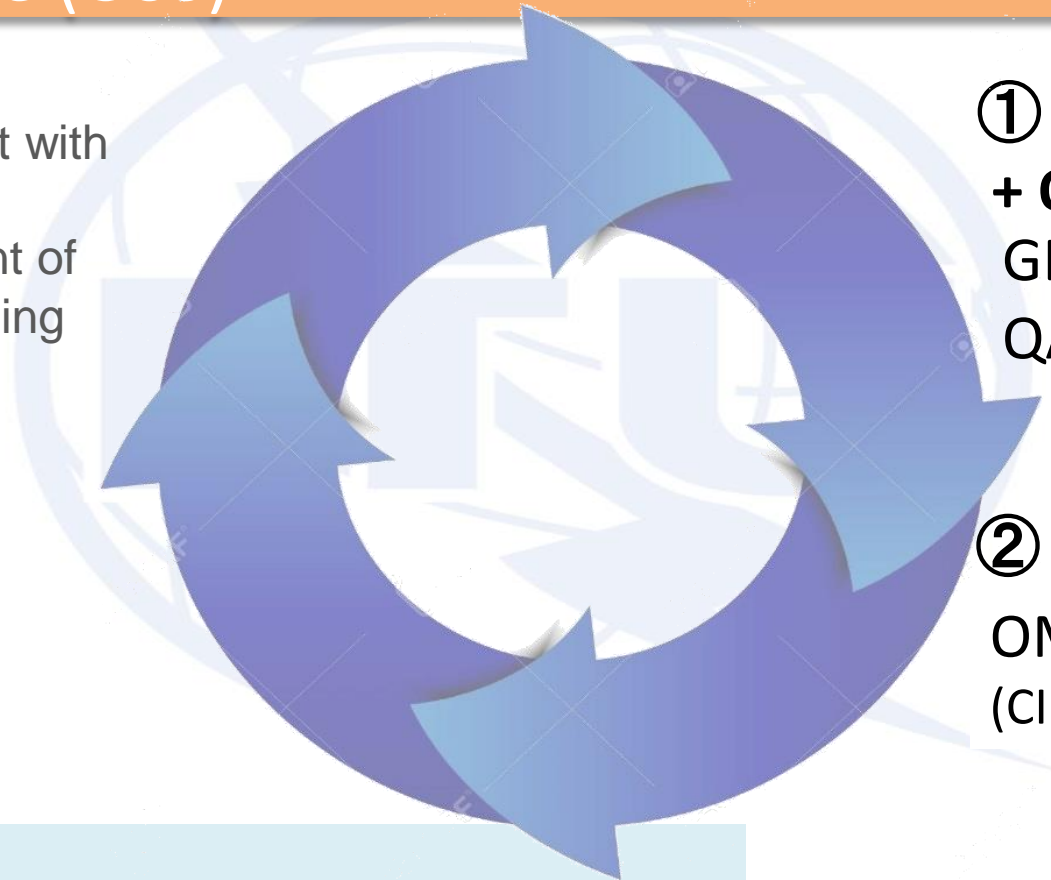
FIWARE Accelerators

FIWARE Mundus: reach a global footprint, opening to regions

④ Partner Ecosystem

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”.



① Implementation as OSS

+ Quality improvement

GE (generic enabler)

QA (quality assurance)

② API

OMA NGSI → ETSI ISG CIM
(CIM has liaised with ITU-T FG-DPM)

**Open Standard
Platform**



**Open Innovation
Ecosystem**



- **FIWARE publishes:**

- **Technical specifications** of Future Internet Generic Enablers (**GE**)
- **API specifications** for interactions with the GEs and between the GEs
- A Modular **Reference Architecture** explaining how the GEs are combined

- Technical content of FIWARE is divided into **seven chapters**

- **FIWARE provides:**

- **Open-Source reference implementations of Generic Enablers**
→ available in **FIWARE Catalogue**
- Publicly accessible running instances of GE implementations (**FIWARE LAB**)
- A **cloud environment** where users can deploy their own instances of GEs (**FIWARE LAB**)
- **FIWARE OPS:** A software suite allowing infrastructure providers to setup own (public, private, or commercial) instances of the FIWARE Cloud environment

Cloud



- Federation of infrastructures (private/public regions)
- Automated GE deployment

Data/Media Context Mgmt



- Complete Context Management Platform
- Integration of Data and Media Content

IoT Services Enablement



- Easy plug&play of devices using multiple protocols
- Automated Measurements/Action \leftrightarrow Context updates

Data/Services Delivery



- Visualization of data (operation dashboards)
- Publication of data sets/services

Advanced Web UI



- Easy incorporation of advanced 3D and AR features
- Visual representation of context information

Security



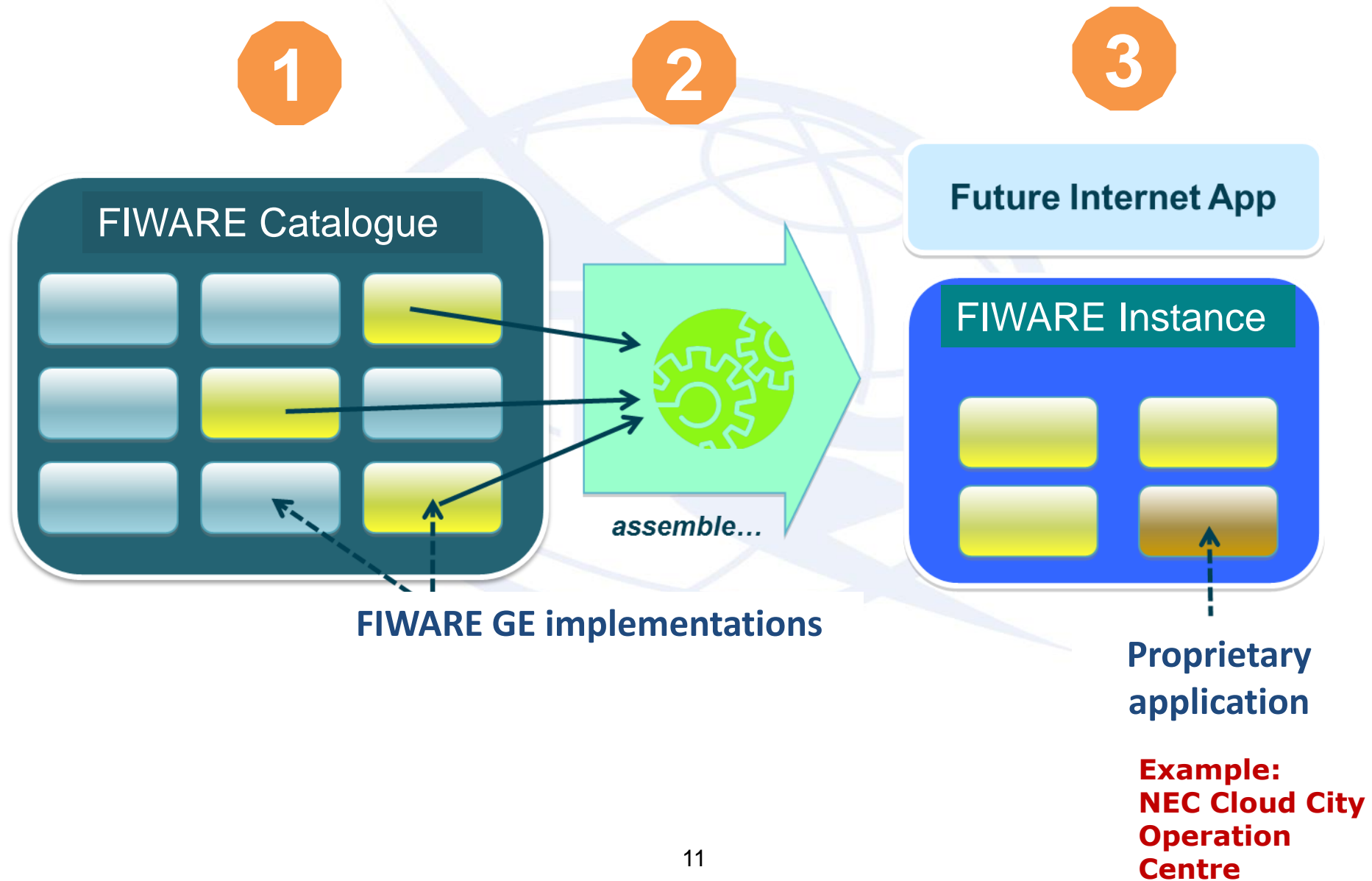
- Security Monitoring
- Built-in Identity/Access/Privacy Management

I2ND

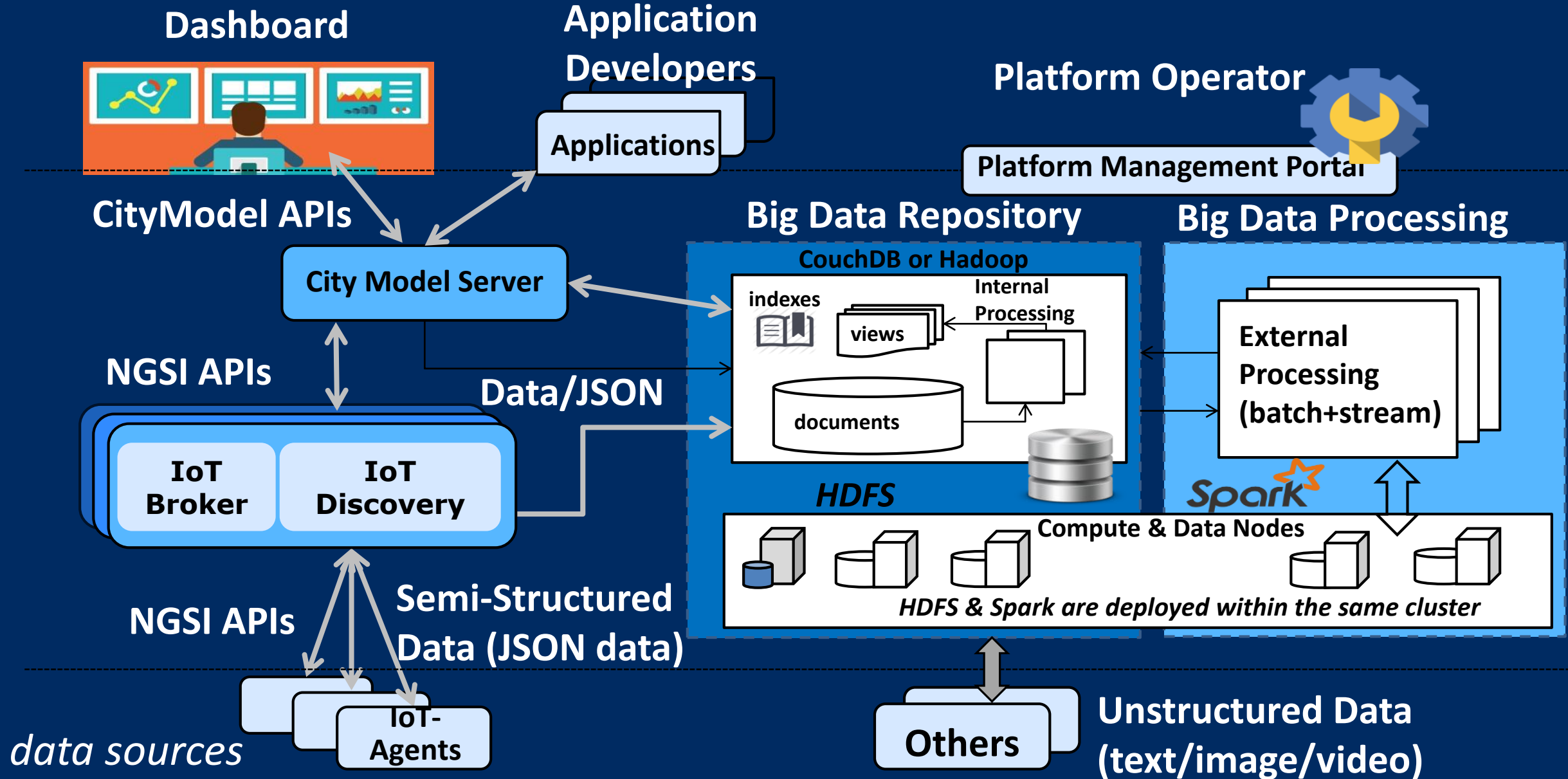


- Advanced networking (SDN) and middleware
- Interface to robots

How to create applications with FIWARE



NEC Cloud City Operation Center



Thank you very much for your attention