



Emerging IoT Technologies for Smart Cities

CERN, November 7, 2017

Contact
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Ongoing Research Activities



SYNCHRONICITY Large Scale Pilot on IoT for Smart Cities

CREATE-IoT Coordination of IoT Large Scale Pilots

U4IoT End-user Privacy for IoT LSPs

Privacy F-FLAG GDPR & Privacy Risk assessment

ANASTACIA IoT Cybersecurity Security & privacy seal

SAINT Systemic Analyzer in Network Threats


5G 5G-PAGODA EU-Japan 5G, IoT & Dynamic slicing (SDN / NFV)

EU-China IoT - 5G


Online testing tools for IoT

IoT Testbed as a service with crowdsourcing tools

European Testbed Federation



IoT-related International Engagement



ITU-T Member
Rapporteur on Research and Emerging Technologies for the Internet of Things and Smart Cities (SG20)

IoT-Forum President of the IoT Forum

IEEE Vice-Chair of the IEEE Subcommittee on IoT

IoT Lab President of the IoT Lab
Crowdsource the Future!

UNITED NATIONS Special Consultative Status to the UN


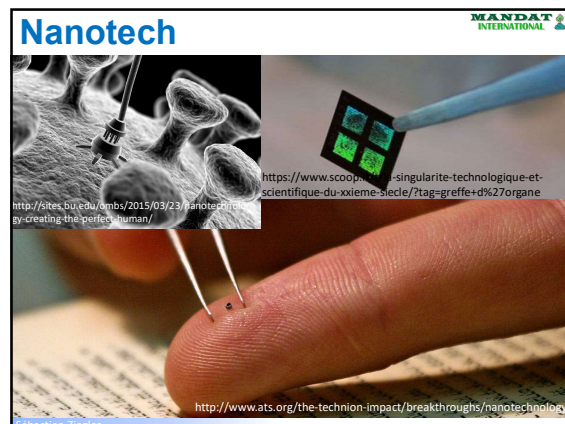
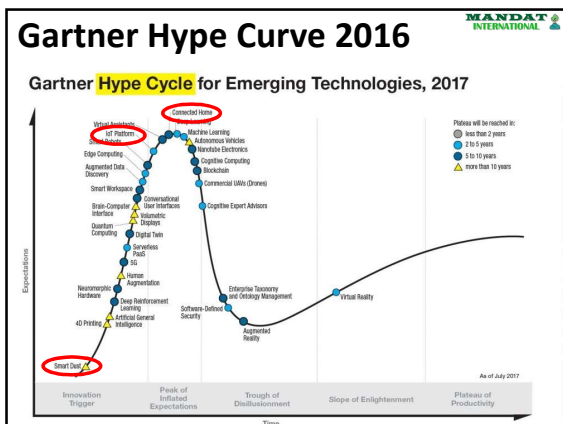
R6 FORUM

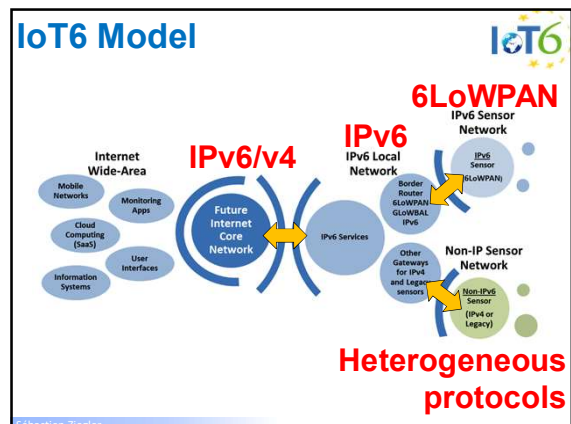
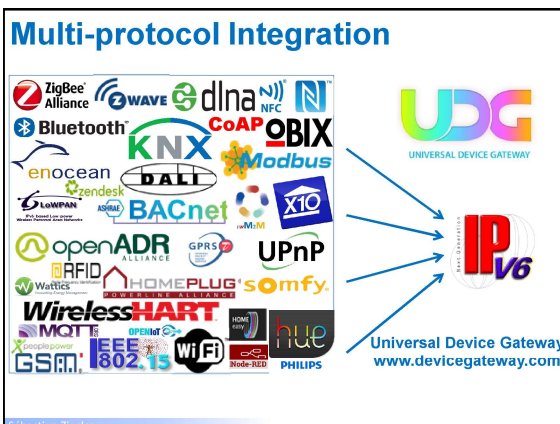
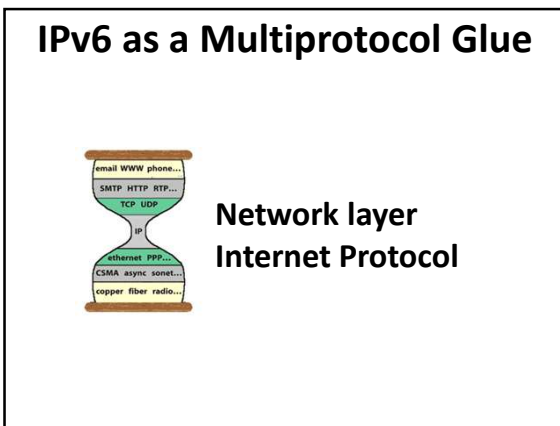
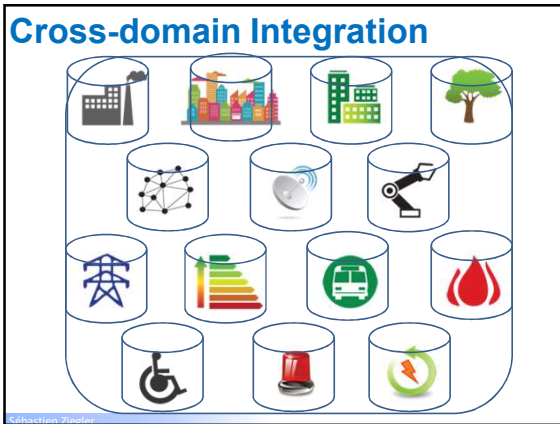
THE GLOBAL CONNECT

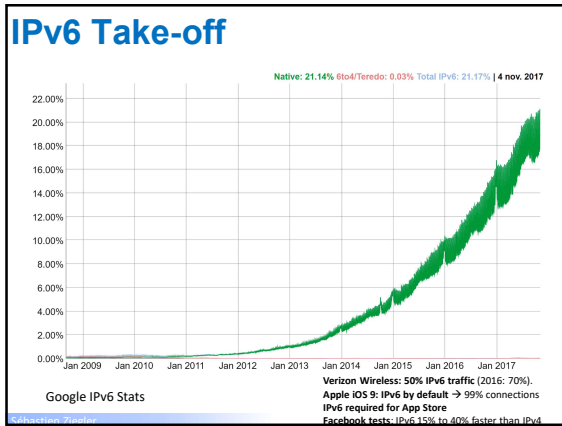
WE SUPPORT

FIWARE

OPEN & AGILE SMART CITIES





SYNCHRONICITY

OPEN & AGILE SMART CITIES

FIWARE

EUROPEAN RESEARCH INFRASTRUCTURE FOR SMART CITIES AND COMMUNITIES

SYNCHRONICITY

Smart Cities Frameworks for IoT Integration

Building and demonstrating an interoperable European framework for IoT management in smart cities

Synchronicity - Sébastien Ziegler

SYNCHRONICITY

Enduser Engagement & Cocreation

SYNCHRONICITY

End-user driven research

CROWD: SUGGEST, ASSESS

TEST


RESEARCHERS: DEVELOP, SELECT

SYNCHRONICITY 

Cocreation workshops

- Citizens
- Municipalities
 - Citizen's app
 - Online Data Platform




SYNCHRONICITY  U4IoT

IoT Lab App



SYNCHRONICITY 

Pervasive Lab

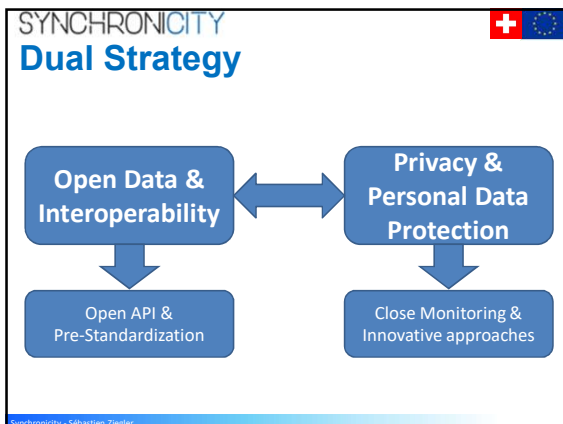


Anywhere

IoT Lab - Sébastien Ziegler 

SYNCHRONICITY


Privacy, Security & Data Protection

SYNCHRONICITY 


General Data Protection Regulation (GDPR)

Art 83, al 5
 "Infringements of the following provisions shall (...) be subject to administrative fines
up to 20 000 000 EUR,
 or in the case of an undertaking,
up to 4 % of the total worldwide annual turnover of the preceding financial year, whichever is higher..."

SYNCHRONICITY 

Privacy & Data Protection

- **User / Market Acceptance**
- **Legal Risks**
- **Financial Risks**
- **Reputational Risks**




Sébastien Ziegler

SYNCHRONICITY 

Data Protection Impact Assessment

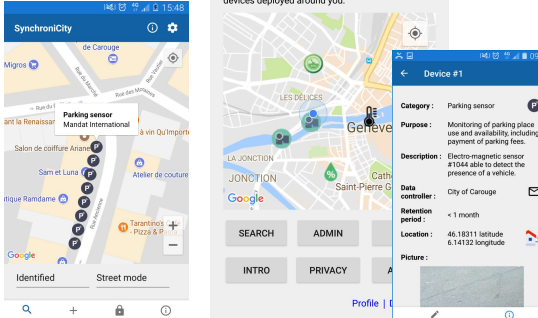



SYNCHRONICITY 

Privacy App

IoT PRIVACY CHECK

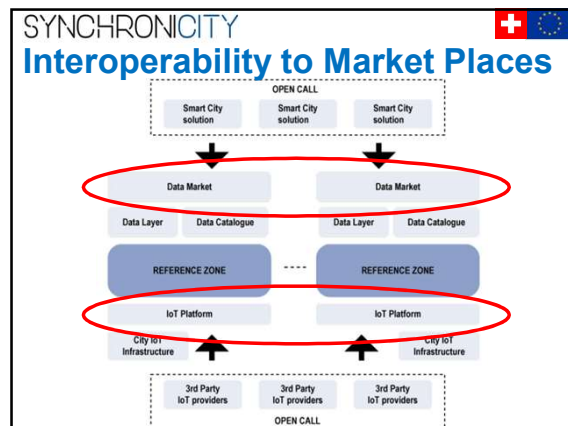
Welcome to the global IoT Privacy monitoring community and app, sharing information on IoT devices deployed around you.

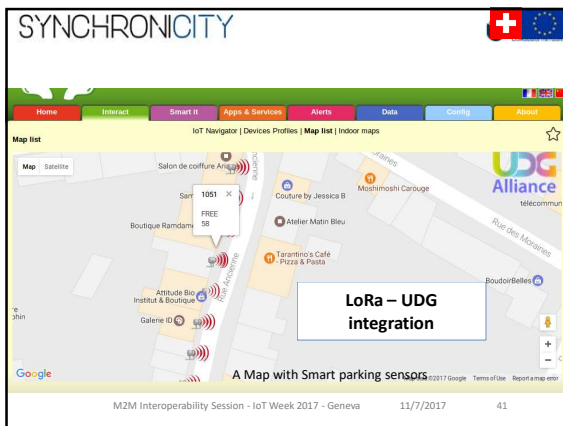
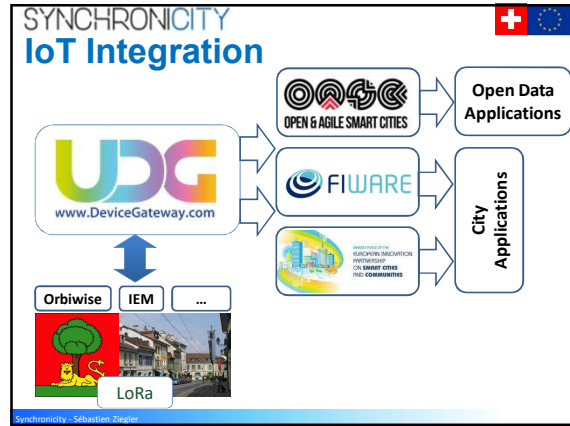
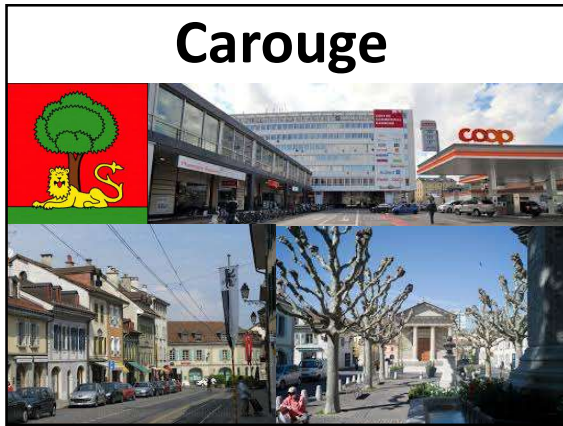


Category: Parking sensor
Purpose: Monitoring of parking place use and availability, including payment of parking fees.
Description: Electro-magnetic sensor #1044 able to detect the presence of a vehicle.
Data controller: City of Carouge
Retention period: < 1 month
Location: 46.18311 latitude 6.14023 longitude

SYNCHRONICITY

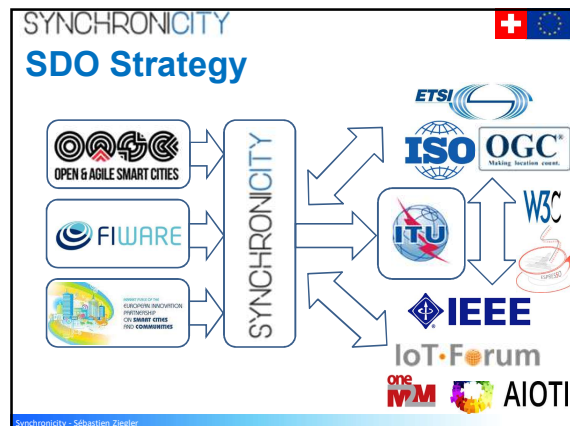
Integration







SYNCHRONICITY

| carougeparking | |
|---------------------|---|
| Device | |
| Name | 1044 |
| Family | Sensor |
| Category | Sensors |
| UD | 51 |
| IP/eth address | carougeparking carougeparking |
| Accessiblity | 0 |
| Legacy protocol | carougeparking carougeparking |
| Legacy address | 127.0.0.1 |
| Status | Accepted |
| Key data | # parking_slot 1 |
| Last data at | 23/05/2017 13:02:00 |
| Detected at | 24/05/2017 18:02:00 |
| Last config change | 23/05/2017 15:06:28 |
| Location | Blue Ascensee - Blue Ascensee - Carouge |
| Generic description | OCCUPIED |
| Comments | |
| QR Code | Click to enlarge |



SYNCHRONICITY 

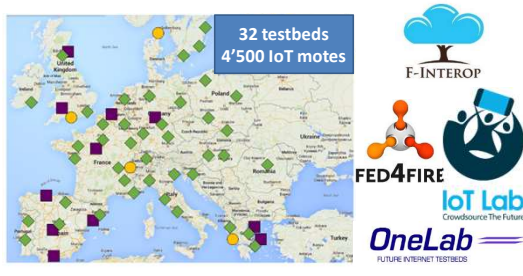
ITU-T SG20 - Open API for IoT Data in Smart Cities

- **Concept, potential and requirements of API for IoT deployment and open data in smart cities;**
- **Analysis of current solutions** in cities and administrations to share data through an open and interoperable interface;
- **Proposal for an open and interoperable API for secured Open Data exchange**, as appropriate, as well as **for IoT data interoperability for smart cities;**
- Underscore and trace the developed API with relevant work performed by other international SDOs and alliances.

Supporting the Convergence




Federating Testbeds as a Service



32 testbeds
4'500 IoT motes

F-INTEROP
FED4FIRE
IoT Lab
OneLab

Online testing tools for the IoT



**Interoperability
Conformance
Performance**

- Scalability
- QoS
- Personal data protection



I E T F
oneM2M
W3C
ETSI
IR6 FORUM
CERTIFIED CERTIFICATION
ITU

IoT Community Building



IoT-Forum
International Declaration on
IoT for Sustainable Development
www.ietforum.org



The image displays a grid of 17 icons representing the Sustainable Development Goals (SDGs). Each icon is numbered and includes a brief description: 1. NO POVERTY, 2. ZERO HUNGER, 3. GOOD HEALTH AND WELL-BEING, 4. QUALITY EDUCATION, 5. GENDER EQUALITY, 6. CLEAN WATER AND SANITATION, 7. AFFORDABLE AND CLEAN ENERGY, 8. DECENT WORK AND ECONOMIC GROWTH, 9. INDUSTRY, INNOVATION AND INFRASTRUCTURE, 10. REDUCED INEQUALITIES, 11. SUSTAINABLE CITIES AND COMMUNITIES, 12. RESPONSIBLE CONSUMPTION AND PRODUCTION, 13. CLIMATE ACTION, 14. LIFE BELOW WATER, 15. LIFE ON LAND, 16. PEACE, JUSTICE AND STRONG INSTITUTIONS, 17. PARTNERSHIPS FOR THE GOALS.

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IoT Lab
www.ietfab.com



A photograph of a modern, multi-story building with a glass facade, surrounded by greenery and a parking lot, representing the IoT Lab facility.

IoT Week 2018 & Global IoT Summit
Bilbao, Spain June 4-8 2018
www.ietfweek.org



IoT-Forum

THANK YOU !

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