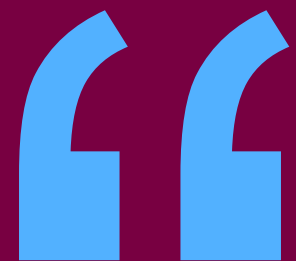




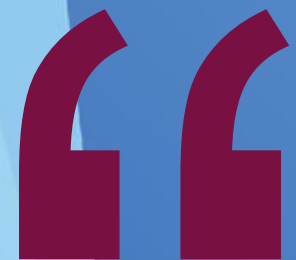
SYNCHRONICITY

# European Industry Partnerships Collaborative Event

Rick Schager, ICT Architect Digital Innovation (Municipality of Eindhoven)  
Nuria de Lama, European Programs Manager, BDVA BoD (Atos)



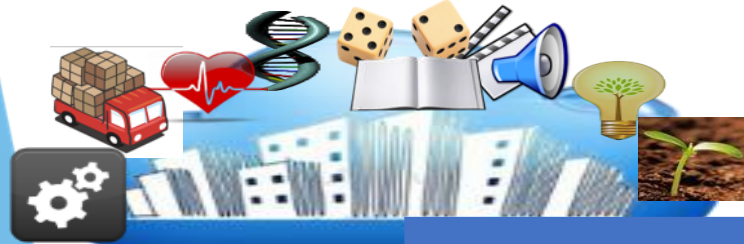
**Deliver a market  
for IoT-enabled  
urban services  
for Europe and  
beyond**



**A robust model for  
standards-based  
innovation and  
procurement of  
IoT-enabled services  
across domains**

# Materialized through the SynchroniCity Ecosystem Transaction Management

- to deliver a Digital Single Market for IoT-enabled smart cities in Europe and beyond.
- to open innovation ecosystem around the proposed digital single smart city marketplace.



Smart City Services

*IoT Data*

## IoT **Data** Marketplace

*Open data trading platform*

Providing a natural incentive to share data through monetization,  
Data management with common APIs,  
FIWARE + TMForum Business APIs

## IoT **Product** Marketplace

*Multi-service e-commerce*

Helping SMSes in IoT market,  
Connecting stakeholders together,  
User-created market ensuring sustainability,  
E-commerce platform



IoT Edge

*IoT Devices  
& Solutions*

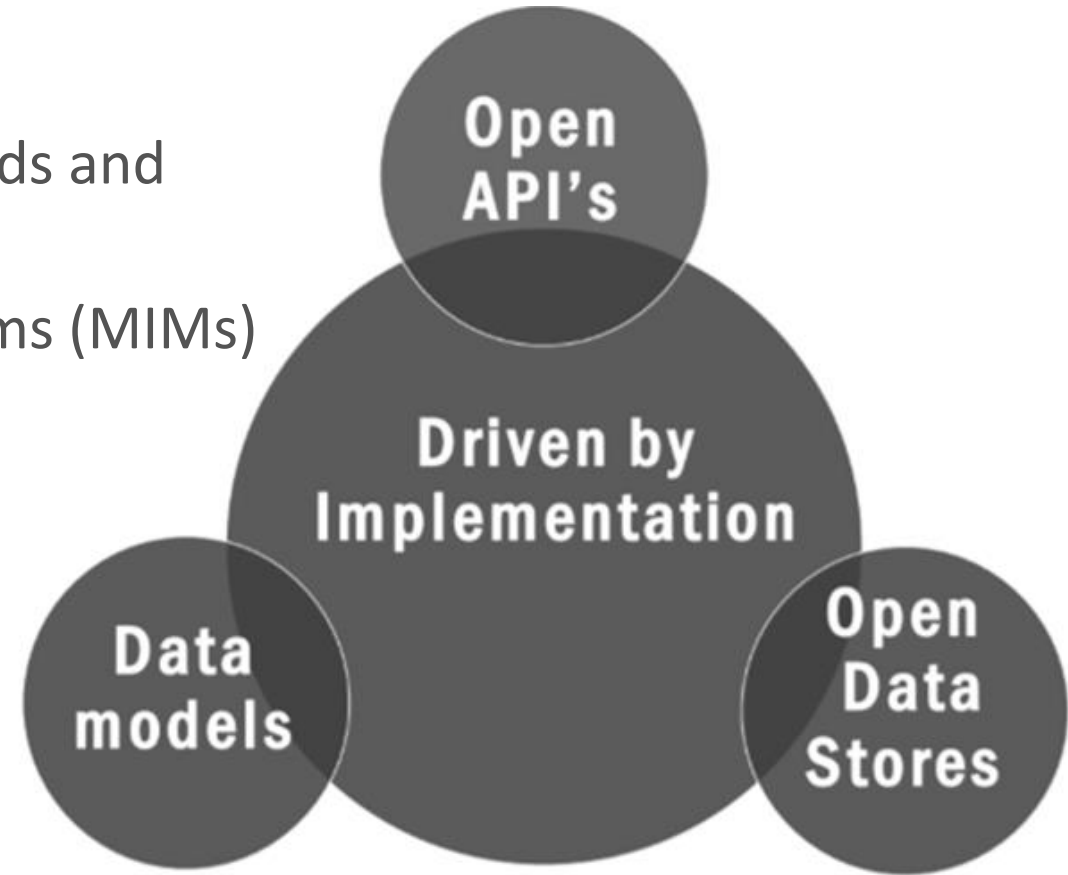


# Translated into (more detailed) Objectives

1. Establish technical foundations
2. Establish marketplace enablers
3. Create reference zones
4. Pilot services that serve citizen needs
5. Establish ecosystem
6. Establish citizen-oriented methods
7. Establish holistic quantification of value
8. Provide insights into new business models
9. Transform city policy-making and planning

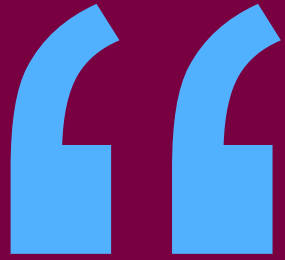
# Common Technical Ground

1. **OASC** neutral branding (based on standards and consensus specifications)
2. **OASC** Minimal Interoperability Mechanisms (MIMs)
  - Context Information Management
  - Common data models
  - Ecosystem Transaction Management (marketplaces)
3. **SynchroniCity** reference implementation (standards-based)
4. **SynchroniCity** cloud hosting (option)



# Interoperability Mechanisms

Interoperability Point	Description	Specification document	Related Standards [and Baselines]
<b>Context Management API</b>	This API allow to access to real-time context information from the different cities.	<a href="#">Reference Architecture for IoT Enabled Smart Cities (D2.1)</a>	ETSI NGSI-LD prelim API, OMA NGSI, ITU-T SG20*/FG-DPM*
<b>Shared data models</b>	Guidelines and catalogue of common data models in different verticals to enable interoperability for applications and systems among different cities	<a href="#">Guidelines for the definition of OASC Shared Data Models (D2.2)</a>  Catalogue of OASC Shared Data Models for Smart City domains (D2.3)	[SynchroniCity RZ + partner data models]
<b>Ecosystem Transaction Management (“Marketplace”) API</b>	It exposes functionalities such as catalog management, ordering management, revenue management, SLA, license management etc.	Basic Data Marketplace Enablers (D2.4)  Guidelines for the integration of IoT devices in OASC compliant platforms (D2.6)	[TM Forum API]
<b>Security API</b>	API to register and authenticate user and applications in order to access to the SynchroniCity-enabled services.	Reference Architecture for IoT Enabled Smart Cities (D2.1)	OAuth2
<b>Data Storage API</b>	This API allows to access to historical data and open data of the reference zones.	Reference Architecture for IoT Enabled Smart Cities (D2.1)	ETSI NGSI-LD, DCAT-AP [CKAN]



**Atomic Services** are a good opportunity to test the SynchroniCity framework and OASC principles. They could be easily replicated, accelerating new developments, in many cities which provide and implement these principles.



**City Agnostic**



**Replicable**



**Easy Deployment**

**Internal Use  
Cases**



**Human Centric  
Traffic Management**



**Multi-Modal  
Transportation**



**Community  
Policy Suite**





# Challenges (technical & non-technical)

## Demand-side:

- Choice, flexibility, efficiency, value-for-money, independence, economic development

## Supply-side:

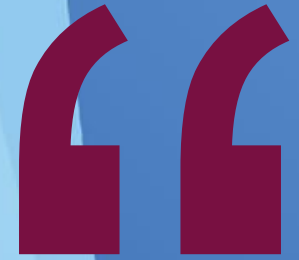
- Scale, agile development/deployment

## All:

- Reduced risk, increased investments, innovation

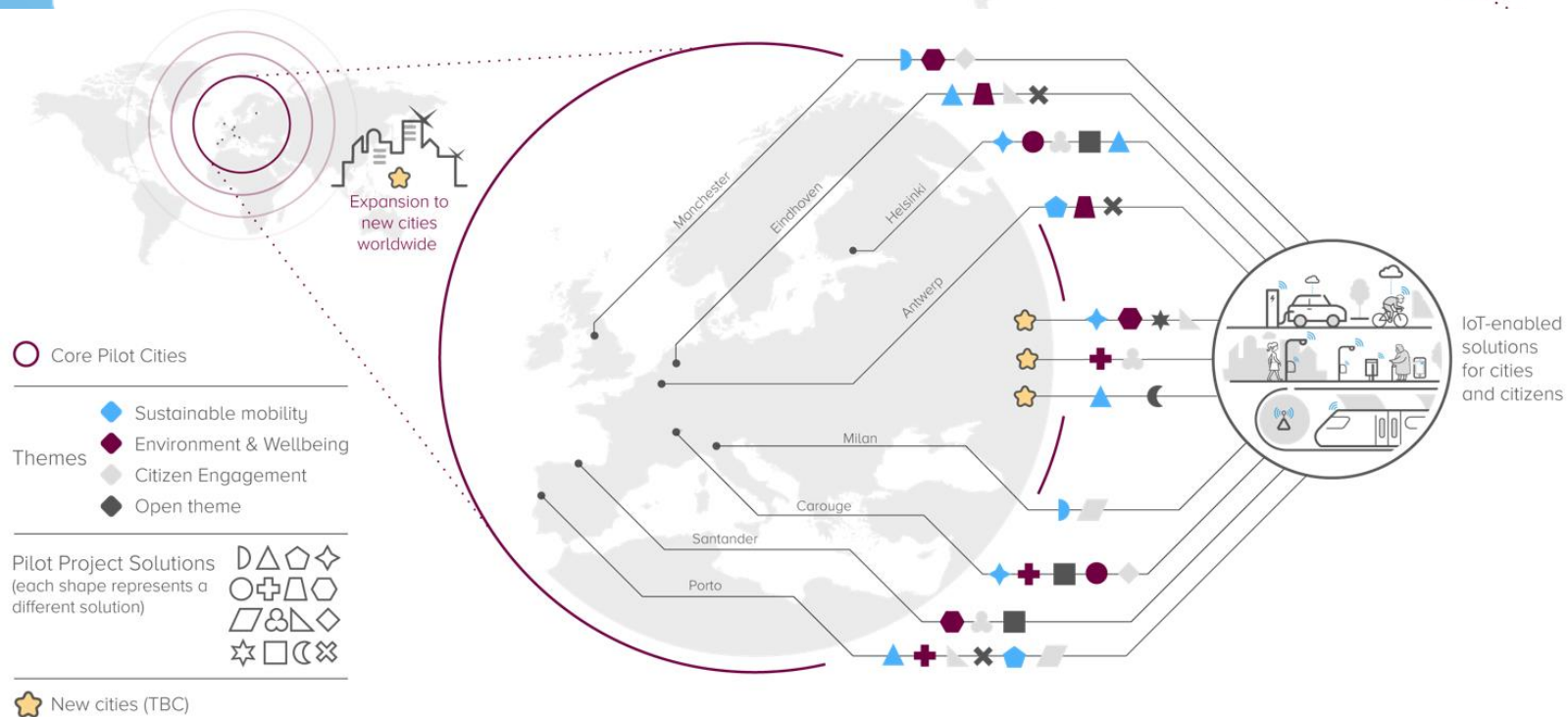
# Challenges (technical & non-technical)

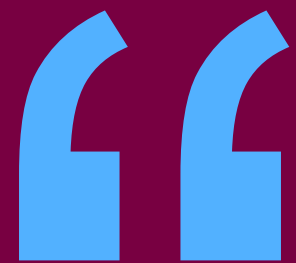
- A path from R&I to implementation (+ link AI, 5G, edge)
- Standards-based innovation and (large-scale) procurement across domains (data silos)
- A common technical ground based on minimal interoperability and **city needs**
- Emerging standards (shape and adopt)
- Market validation, including Data monetization, coverage of infrastructure costs
- Privacy, trust, security, GDPR compliance
- Data quality



**Ecosystem  
expansion and  
sustainability  
10-20-130**

# Initial ecosystem





# Scaling up 51 IoT Solutions for 20 Smart Cities & Communities





**Mission:** To create a global smart city market based on the needs of cities and communities

—  
Demand-side

—  
Global network of national networks

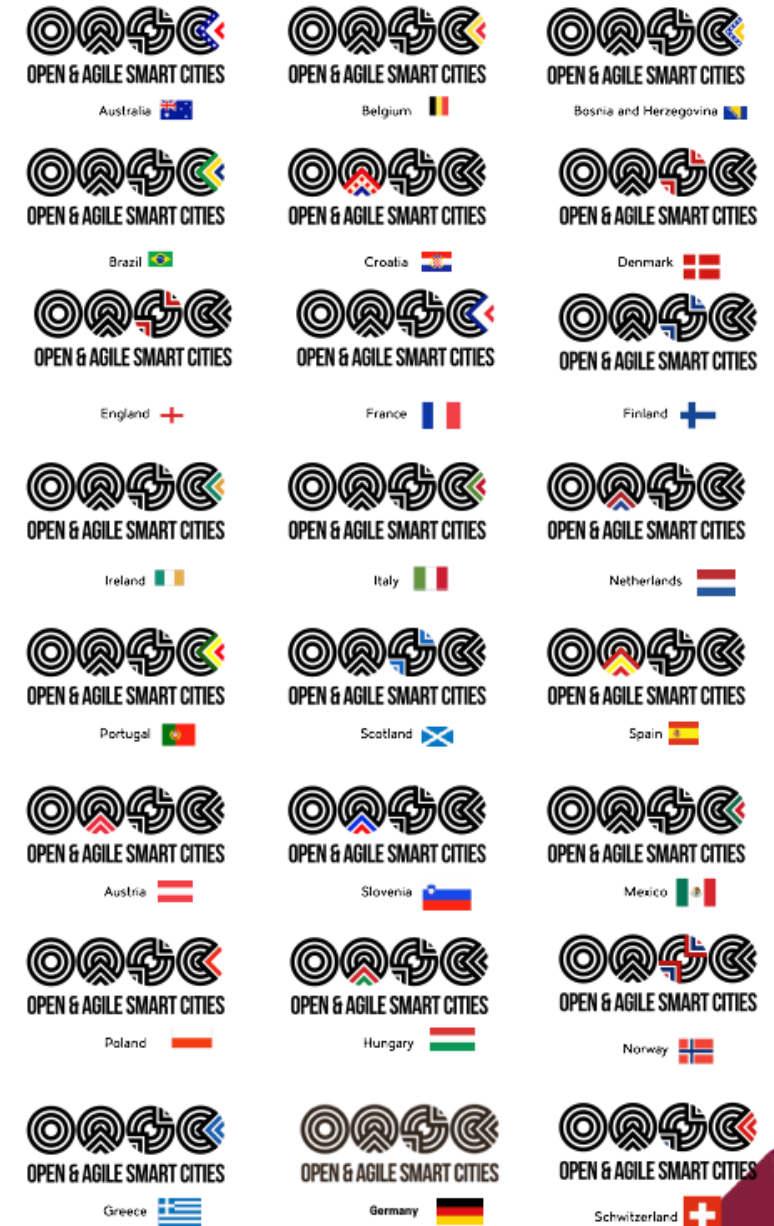
—  
129 cities

26 countries

Europe, Latin America, Asia-Pacific

—  
Council of Cities Coordinator: Ghent

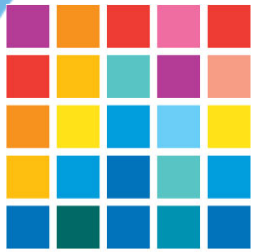
BoD representative: Carouge (Geneva)







OPEN & AGILE SMART CITIES



EURO  
CITIES

European  
Network of  
Living Labs



European Committee  
of the Regions



European  
Commission



EIP-SCC

European Innovation Partnership  
on Smart Cities and Communities



SYNCHRONICITY

tmforum



CITY  
PROTOCOL  
SOCIETY



BDV BIG DATA VALUE  
ASSOCIATION



smart city expo  
WORLD CONGRESS

SELECT  
for Cities



The Foundation  
For Public Code



OISPG

CATAPULT  
Future Cities



NETWORK



# Additional resources and pointers

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Visit our website

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General information

**[info@synchronicity-iot.eu](mailto:info@synchronicity-iot.eu)**

Open Call enquiries

**[helpdesk@synchronicity-iot.eu](mailto:helpdesk@synchronicity-iot.eu)**

API documentation

**<https://synchronicityiot.docs.apiary.io/#>**

Docker Platform Components

**<https://gitlab.com/synchronicity-iot/platform-deployment-docker>**

SynchroniCity (meta) Data models

**<https://gitlab.com/synchronicity-iot/synchronicity-data-models>**

SynchroniCity IoT Data Marketplace

**<https://iot-data-marketplace.com/#/offering>**

SynchroniCity Atomic Services

**<https://synchronicity-iot.eu/tech/atomic-services/>**



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