

SYNCHRONICITY

Open call Antwerp

Local contact Koen.kerckhofs@digipolis.be



This project has received
funding from the European
Union's Horizon 2020 research
and innovation programme
under grant agreement
No732240



ATYPICAL
ANTWERP

Outline

1. **Introduction Antwerp as a Smart City**
2. **Theme Environment**
3. **Theme Mobility**
4. **Open Theme**
5. **SynchroniCity project goals**
6. **SynchroniCity framework and data standards**
7. **Open call procedure and support form
Koen.kerckhofs@digipolis.be**

Introduction



City of Antwerp

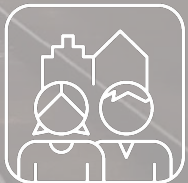
+ 500,000 inhabitants in
the city of Antwerp

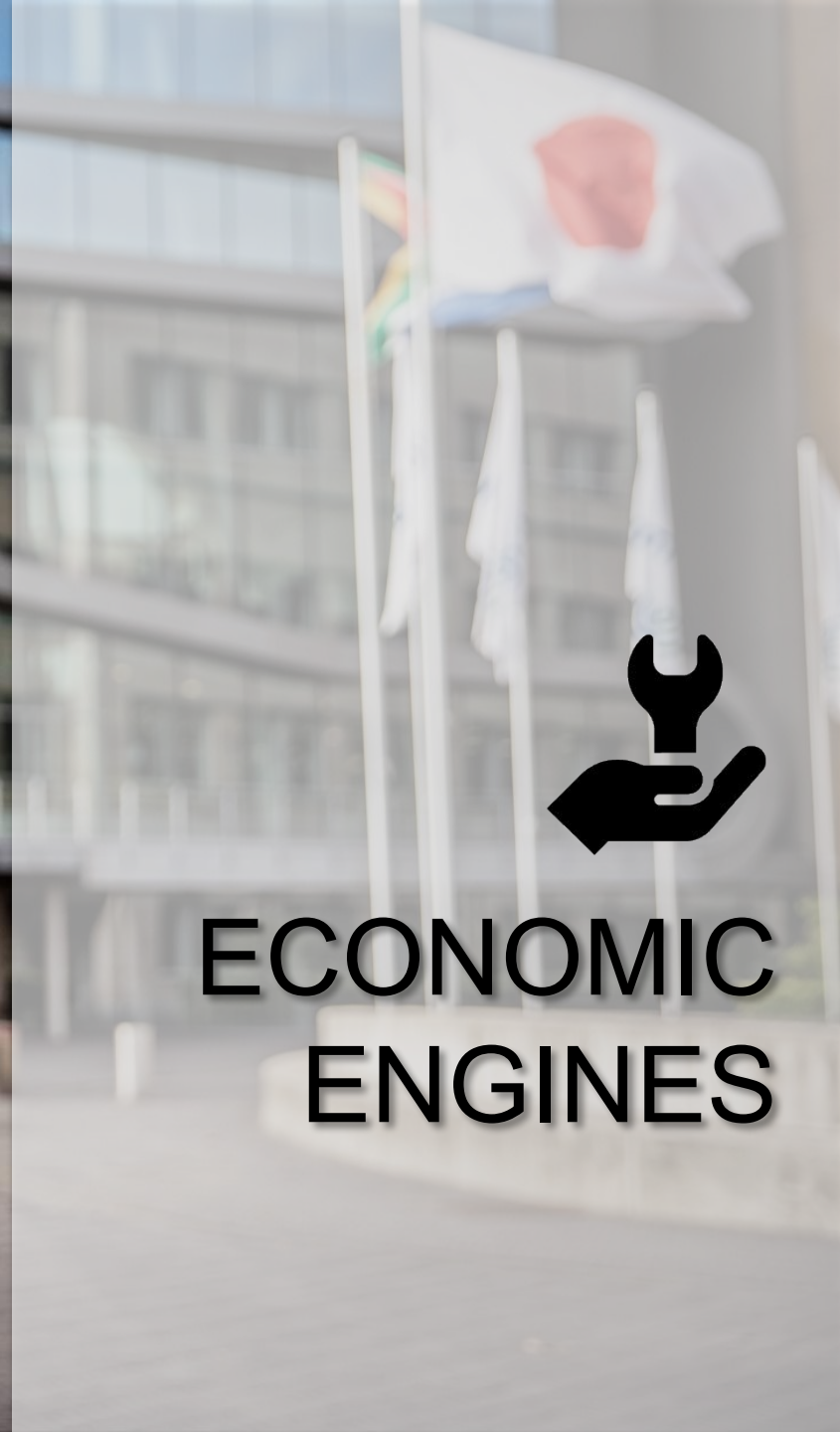
+ 1,5 mio inhabitants in the
Antwerp region

+ 80,000 companies

± 246.127 employees

± 40,000 students





**ECONOMIC
ENGINES**



No. 2 port in
Europe



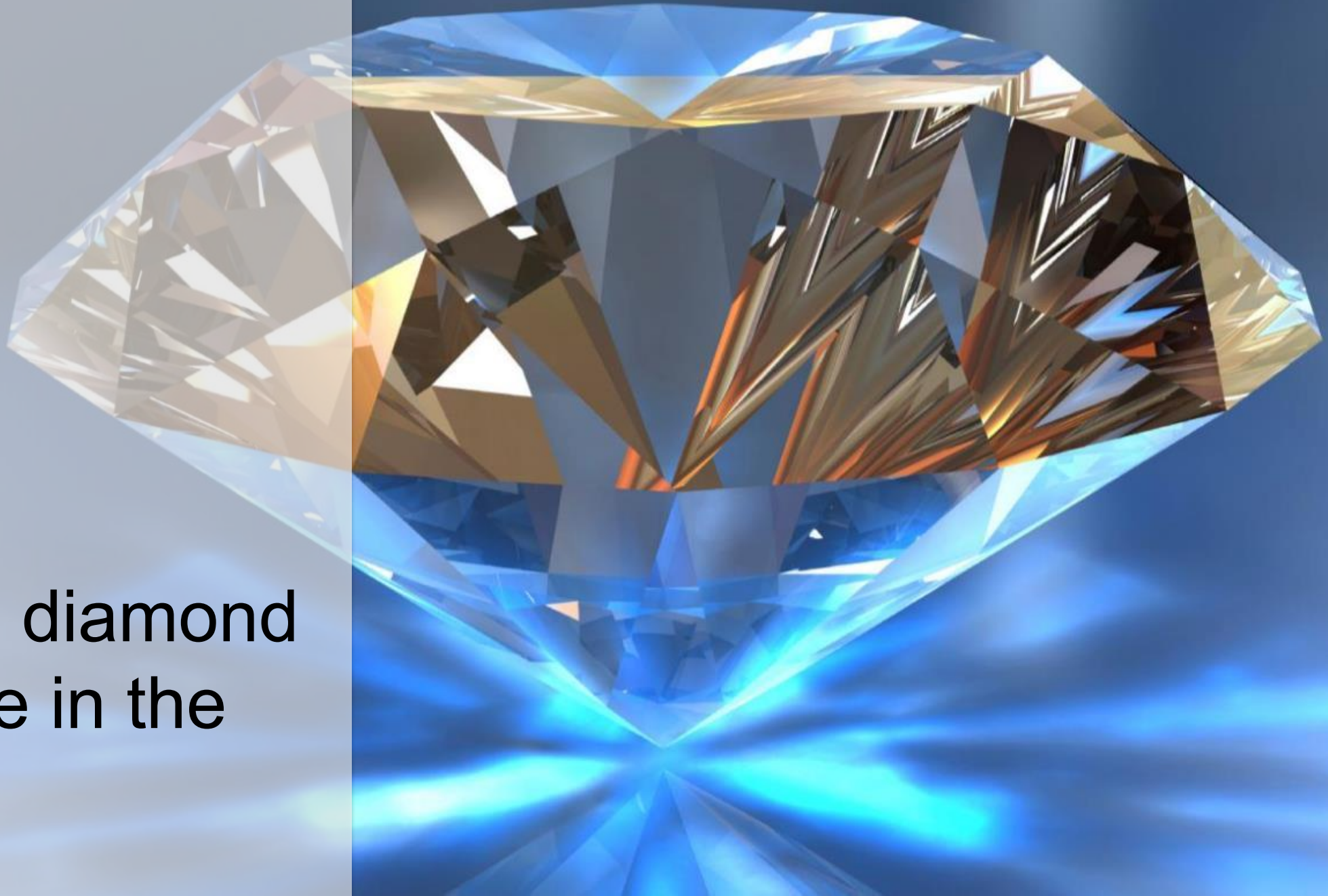


No. 1
integrated oil &
chemical
cluster in
Europe





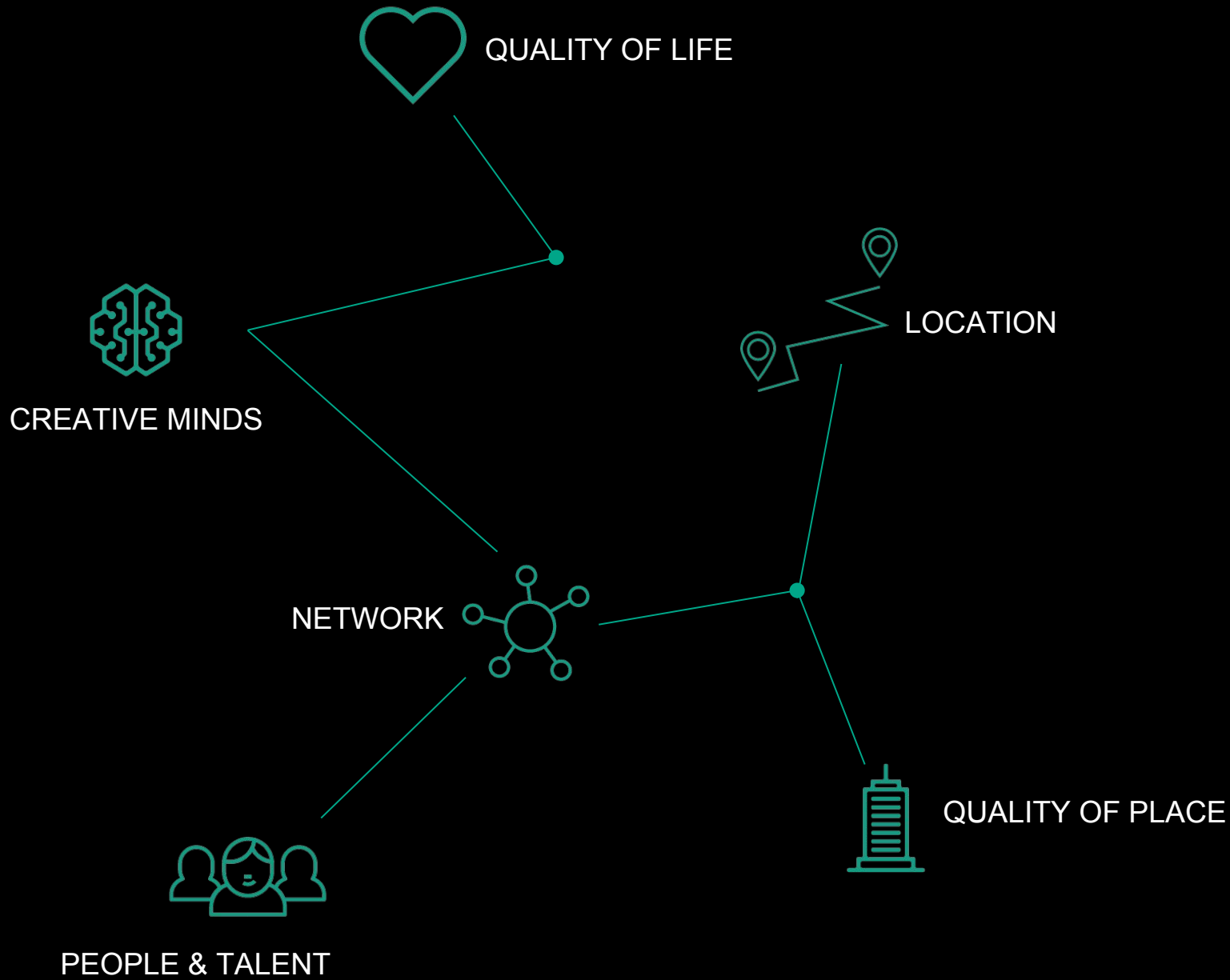
No. 1 diamond
centre in the
world





No. 1 retail
destination in
Belgium





WHY ANTWERP

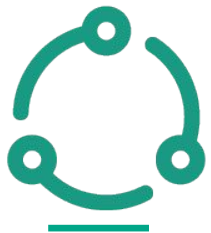


**NEXT
ECONOMY**

INNOVATION CLUSTERS



Digital
innovation



Circular
economy

SMART PORT &
LOGISTICS



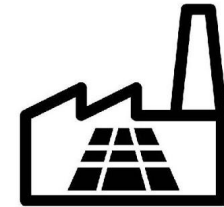
eHEALTH



SMART MOBILITY



INDUSTRY 4.0



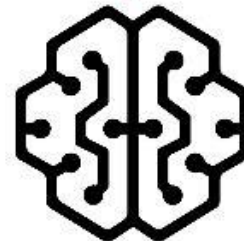
SUSTAINABLE
CHEMISTRY



WASTE &
BY-PRODUCTS



RENEWABLE
ENERGY



SUSTAINABLE
BUILDING



Internet of Things

An aerial photograph of Antwerp, Belgium, at sunset. The city's dense urban landscape, featuring a mix of historic and modern architecture, is visible. Overlaid on the image is a network diagram consisting of white dots (nodes) and thin white lines (edges). The nodes are positioned at various locations across the city, including the port area, the university, and the city center. The lines connect these nodes, creating a web-like structure that represents the city's infrastructure and connectivity. The background is a warm, orange-hued sky.

City of Antwerp

Imec

Port of Antwerp

University of Antwerp

Antwerp as a Smart City

Capital of Things

- The Beacon
- NxtPort
- Buy form Startups
- Central City Platform
- Smart Zone
- ...

Smart Zone

- Together with IMEC
- A living and technology lab in the heart of the city centre
- For international and local stakeholders
- To create, test and validate IoT services, applications and technologies
- In a neutral, real-life, real-time environment

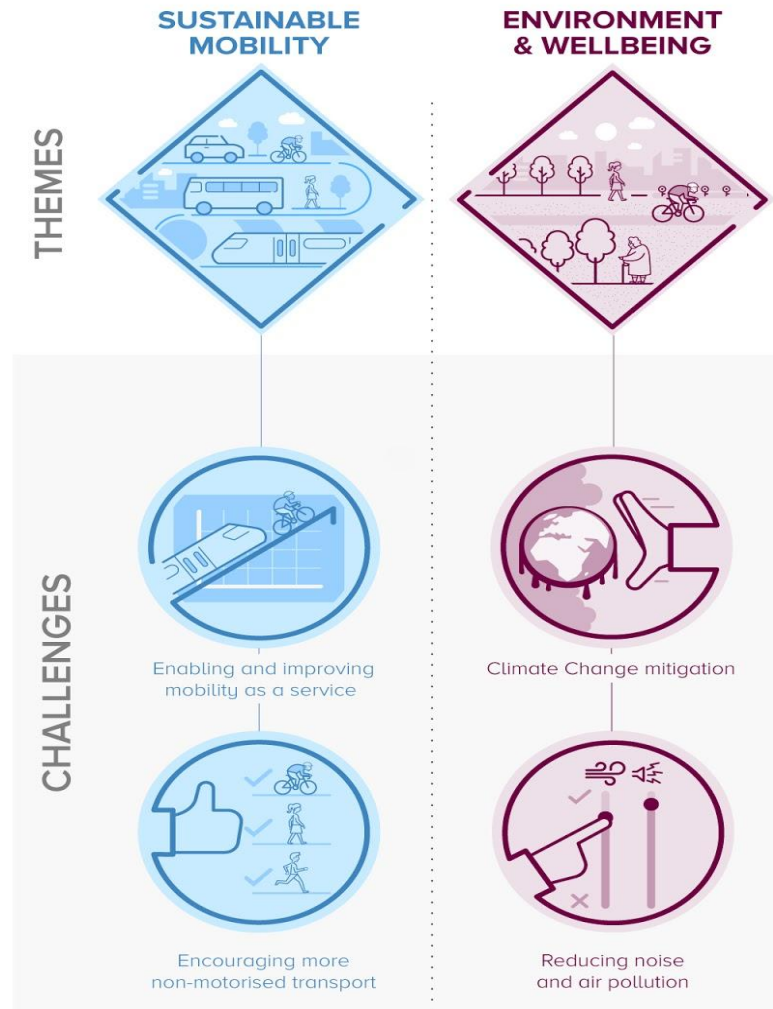




Citizens make a smart city

- A city should be smart, first and foremost, for its **citizens**
- It should provide them with continuous improvements in what matters most to them
- **Participation & inclusiveness** of all stakeholders

Themes Mobility and Environment



Theme Environment and wellbeing

An abstract geometric pattern composed of various shades of gray triangles, creating a low-poly, mountain-like silhouette at the bottom of the slide.

Subdivisions Antwerp



Green



Water



Air



Noise

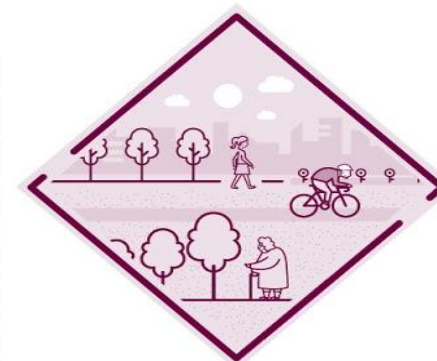


Climate change & mitigation



Energy

ENVIRONMENT & WELLBEING



Climate Change mitigation



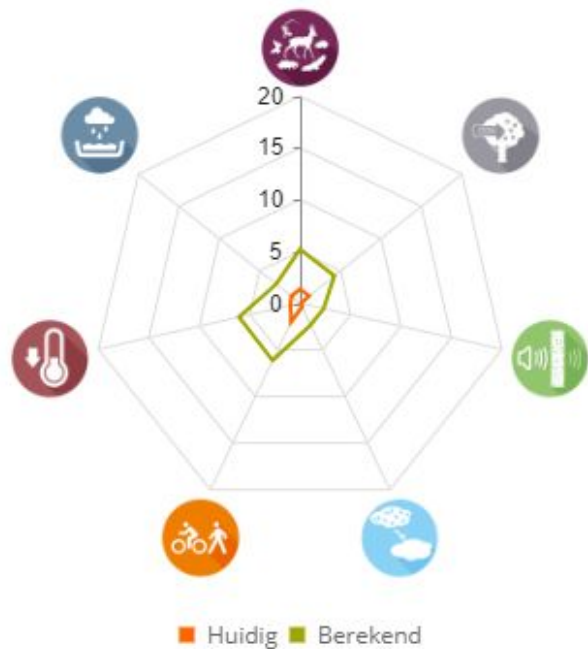
Reducing noise and air pollution

Greentool Antwerp

Impact van de groenmaatregel op het geselecteerd gebied (0-20).

(20 = Maximale impact: Maatregel met maximaal effect in een gebied waar er actueel een grote uitdaging is en de maatregel 100% inzetbaar is)

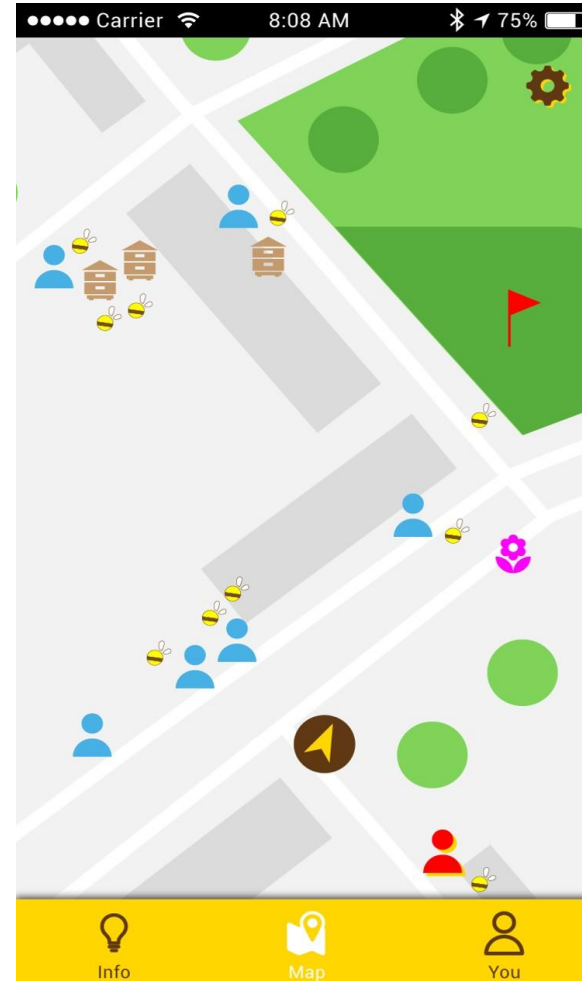
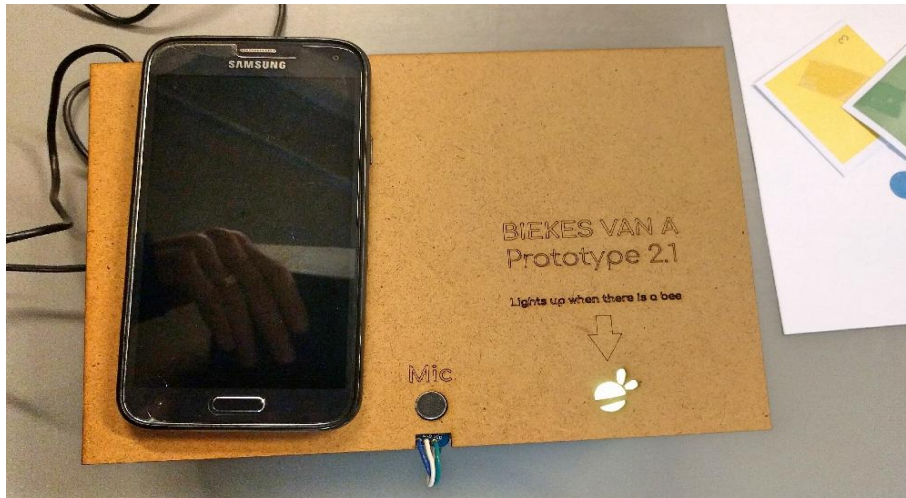
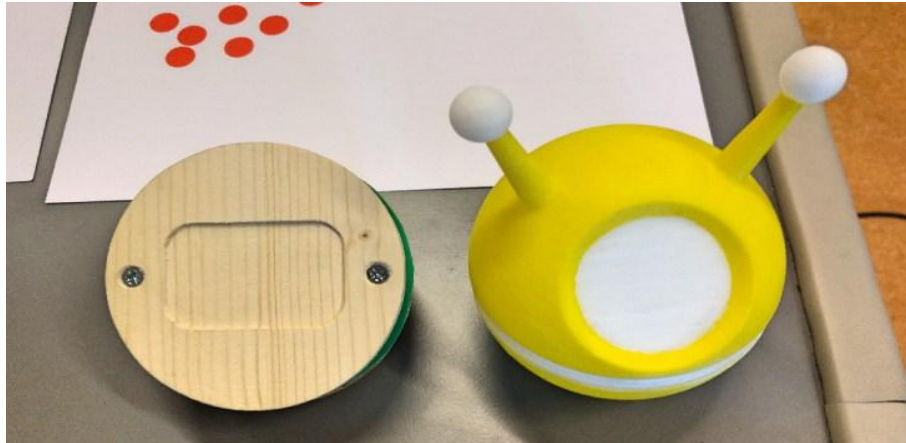
Bomengroepen en -rijen: loofbomen 1ste orde (> 12m)
(toepasbaar in 52% van het gebied)



Natuurlijk ingerichte waterpartij
(toepasbaar in 52% van het gebied)



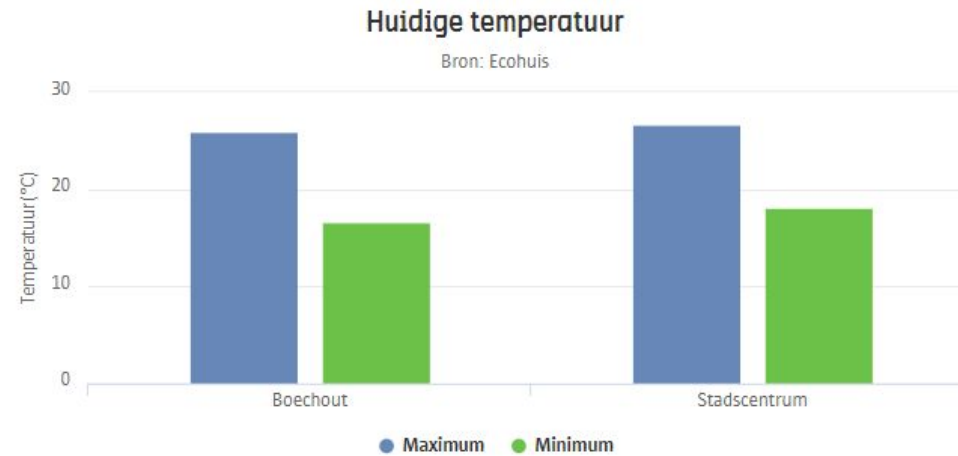
Homegrown ideas



City on the river - spring tide/flash floods – car GPS as warning?



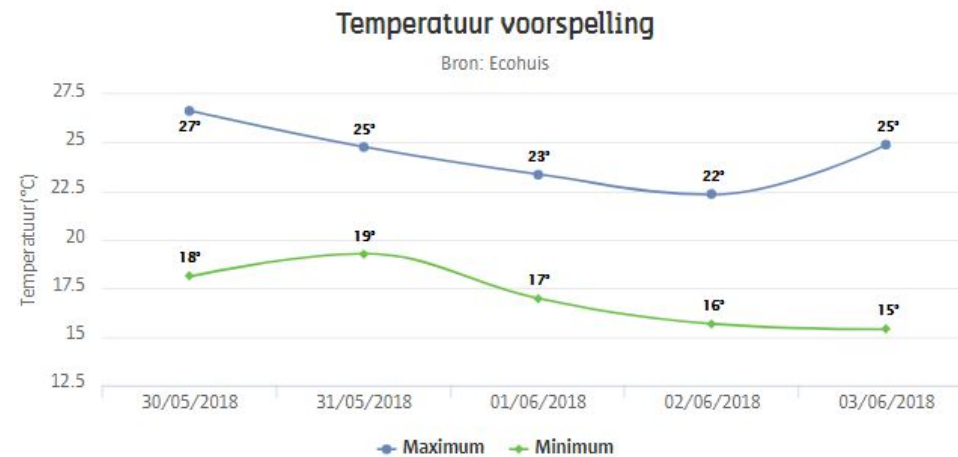
Heatwave - Realtime temperature loggers



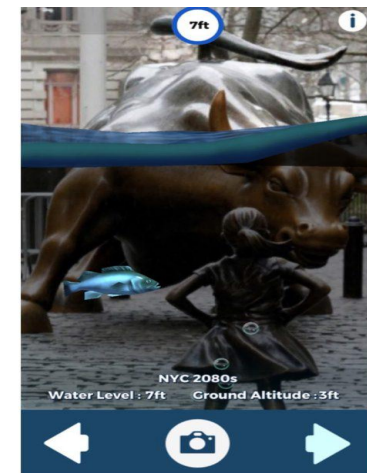
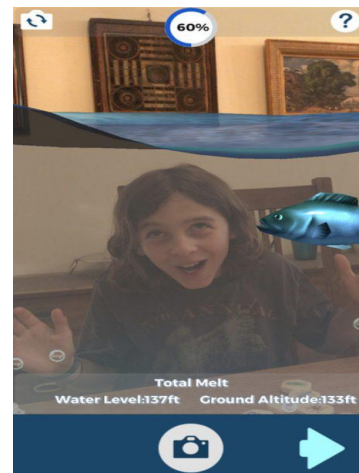
Alert!

Wanneer is er een hittegolf?

Als de thermometer 3 opeenvolgende dagen meer dan 30°C aangeeft, spreekt men van een hittegolf. Hieronder vindt u de huidige voorspelling, die elke dag bijgesteld wordt aan de hand van de gemeten en voorspelde gegevens.



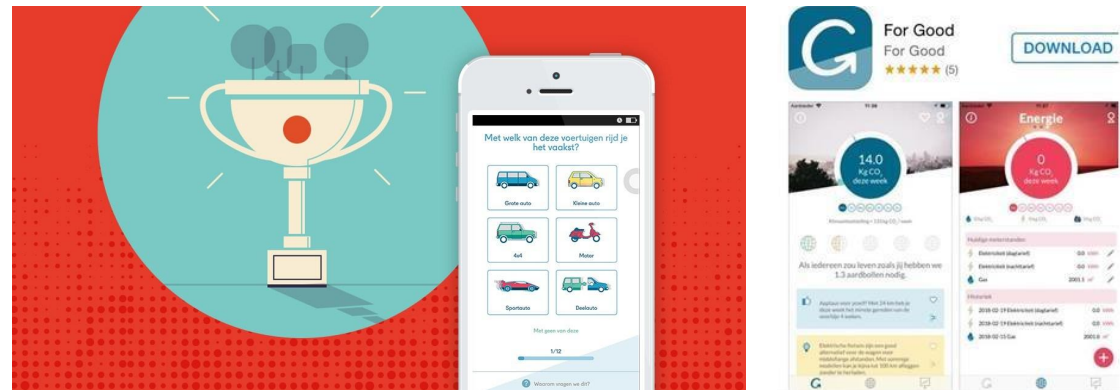
Already available? Add a new gimmick!



Air quality – city & citizen science!



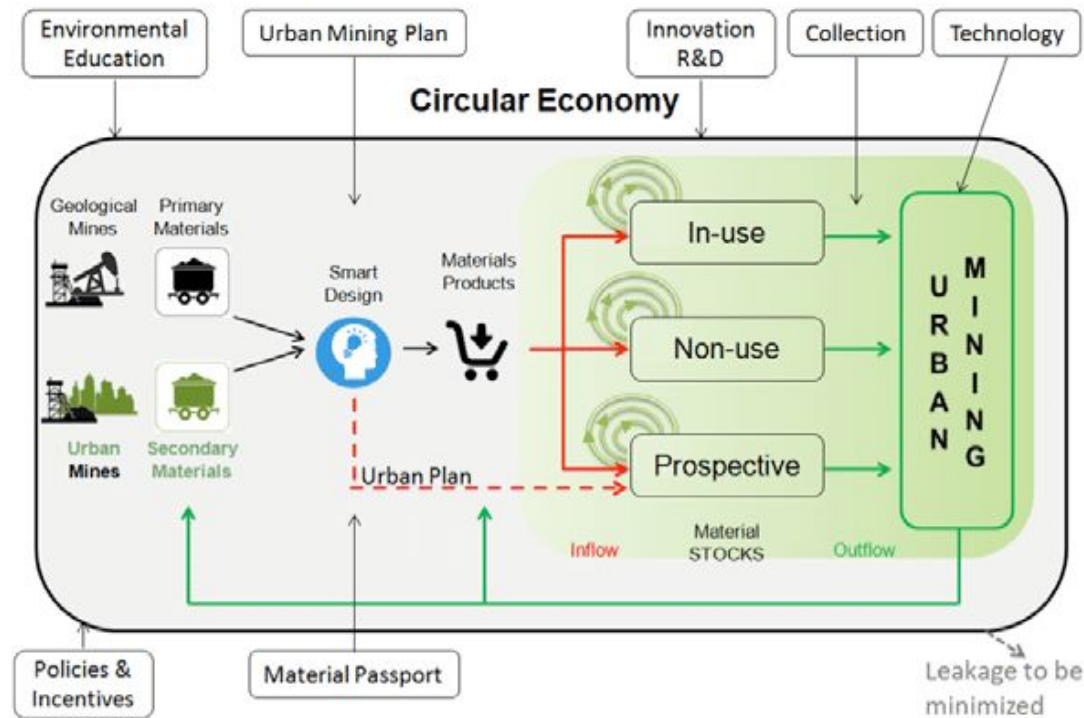
Sensitization – own behaviour and impact



Local offline meeting points



Circular economy – urban mining



Antwerp madaster local

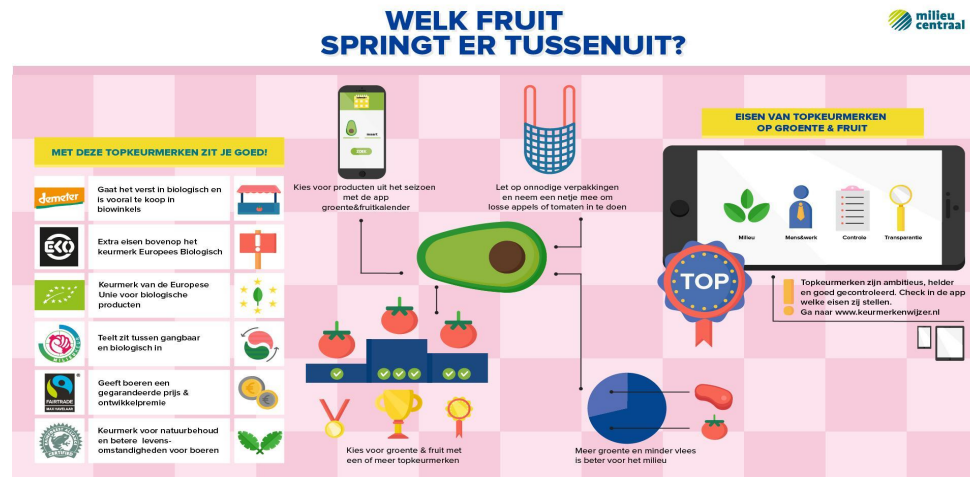
- produce
- production
- raw material



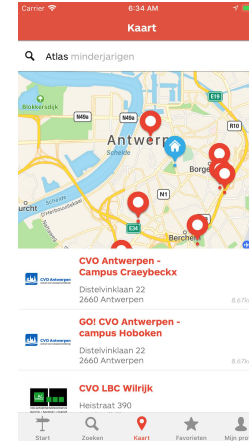
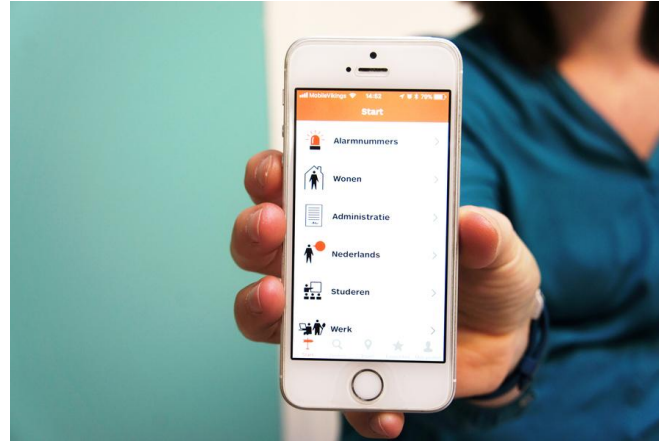
Easy to use app



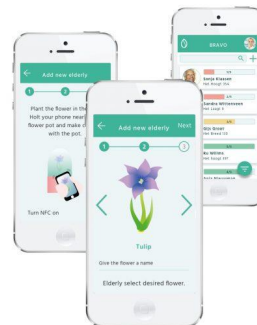
(offline) Communication as support



Universal language



Combine a gaming aspect to real life



Theme Mobility



50/50 modal split by 2030

- Modal shift
- Time shift
- Mental shift

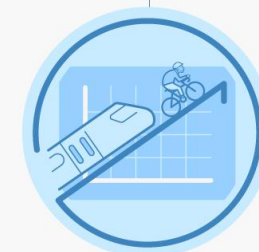


SUSTAINABLE MOBILITY

THEMES



CHALLENGES



Enabling and improving
mobility as a service



Encouraging more
non-motorised transport

Smart ways to Antwerp

[Smart ways to Antwerp](#)[Home](#)[Route planner](#)[Transport possibilities](#)[Road works](#)[Low emission zone](#)[For employers](#)[More](#)EN

Mechelen, Belgium

↔

Generaal Armstrongweg 1, 1

Leave at

15:00

25/05/18

i

 22 min

>

 10 min

Travel time

39min

Departure

14:59

Arrival

→ 15:38

▼

 7 min

>

 IC

>

 23 min

Travel time

49min

Departure

15:04

Arrival

→ 15:53

▼

 22 min

>

 10 min

>

 2 min

Travel time

45min

Departure

14:59

Arrival

→ 15:44

▼

 7 min

>

 IC

>

 23 min

Travel time

54min

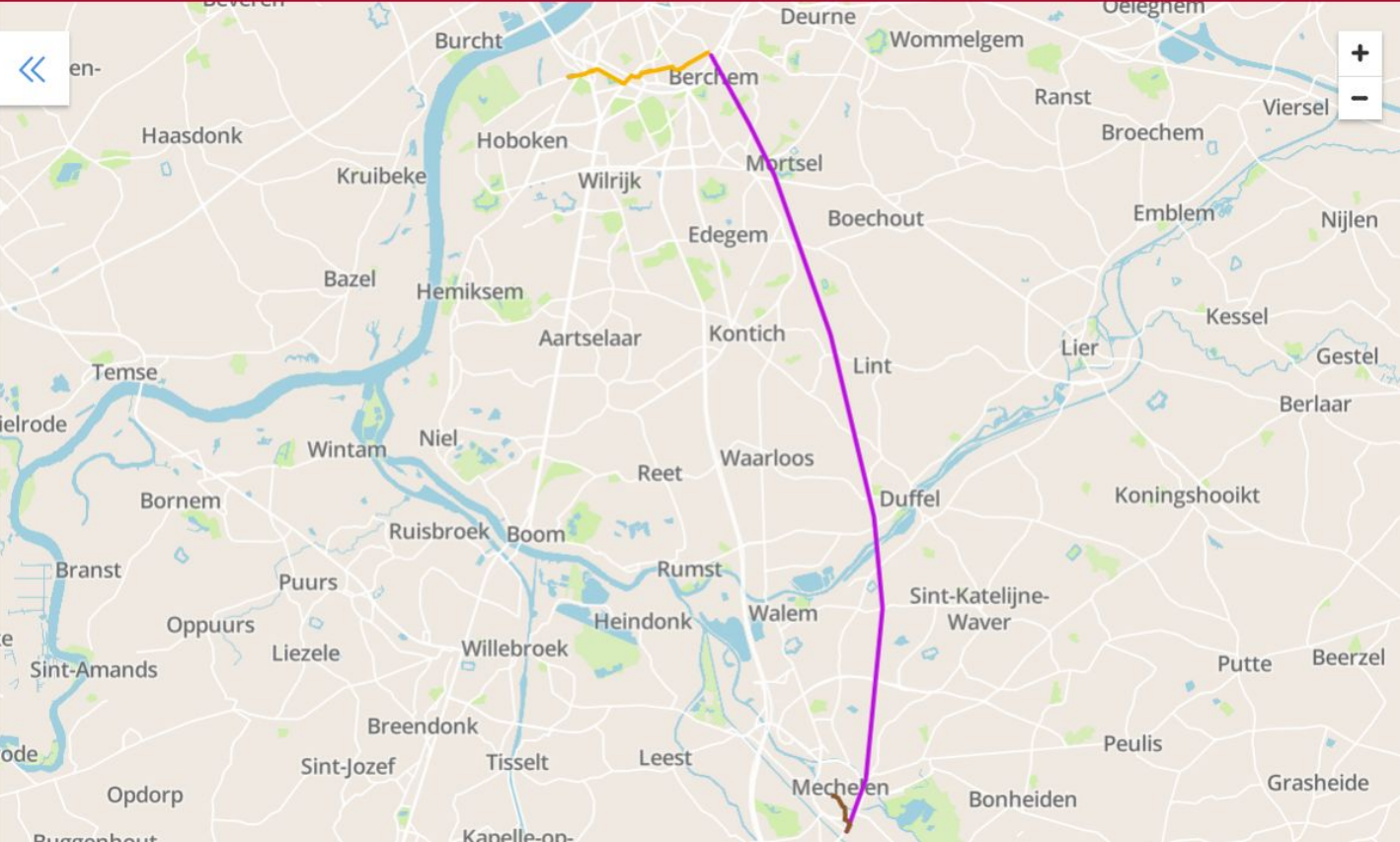
Departure

15:04

Arrival

→ 15:58

▼



“EXAMPLES

- Sharing everything
- Mobipoints
- User experience
- Platforms
- ...



Open Theme



Anything that blows our minds



OPEN
THEME



Open challenge

SynchroniCity Project goals

The background of the slide is a dark gray color. At the bottom, there is a decorative graphic consisting of several overlapping triangles in various shades of gray, creating a low-poly, mountain-like silhouette.

IoT European Large-Scale Pilots Programme



User Engagement



Cross Fertilisation

SYNCHRONICITY

Smart Cities



Wearables/safety



Agro



Automotive

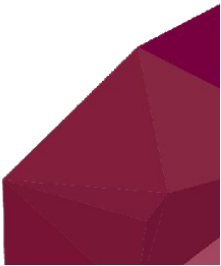


Assisted living



SYNCHRONICITY

Synchronicity opens up a global IoT market where cities and businesses develop shared digital services to improve the lives of citizens and grow local economies.



SYNCHRONICITY

*Deliver a Digital Single Market for IoT-enabled urban services,
in Europe and beyond.*

Synchronicity opens up a global IoT market where cities and businesses develop shared digital services to improve the lives of citizens and grow local economies.

SYNCHRONICITY

Deliver a Digital Single Market for IoT-enabled urban services, in Europe and beyond.

Synchronicity opens up a global IoT market where cities and businesses develop shared digital services to improve the lives of citizens and grow local economies.

Deliver common, co-created IoT-enabled urban services that meet citizens needs.

SYNCHRONICITY

SynchroniCity will deliver a harmonized ecosystem for IoT-enabled smart city solutions where IoT device manufacturers, system integrators and solution providers can innovate and openly compete.

SynchroniCity will establish a reference architecture for the envisioned IoT-enabled city market place with identified interoperability points and interfaces and data models for different verticals, including tools for co-creation & integration of legacy platforms.

SYNCHRONICITY



MANCHESTER
CITY COUNCIL



OPEN & AGILE SMART CITIES



ENGINEERING



EINDHOVEN

Milano



Comune
di Milano



bronze



Manchester
Metropolitan
University



ROMBIT

Porto.



AYUNTAMIENTO DE
SANTANDER

CATAPULT
Future Cities

European
Network of
Living Labs



umec



CATAPULT
Digital



UNIVERSAL DEVICE GATEWAY



heijmans



ubiwhere
SUITING THE FUTURE

KE-TI 전자부품연구원
Korea Electronics Technology Institute



SEOUL METROPOLITAN
GOVERNMENT



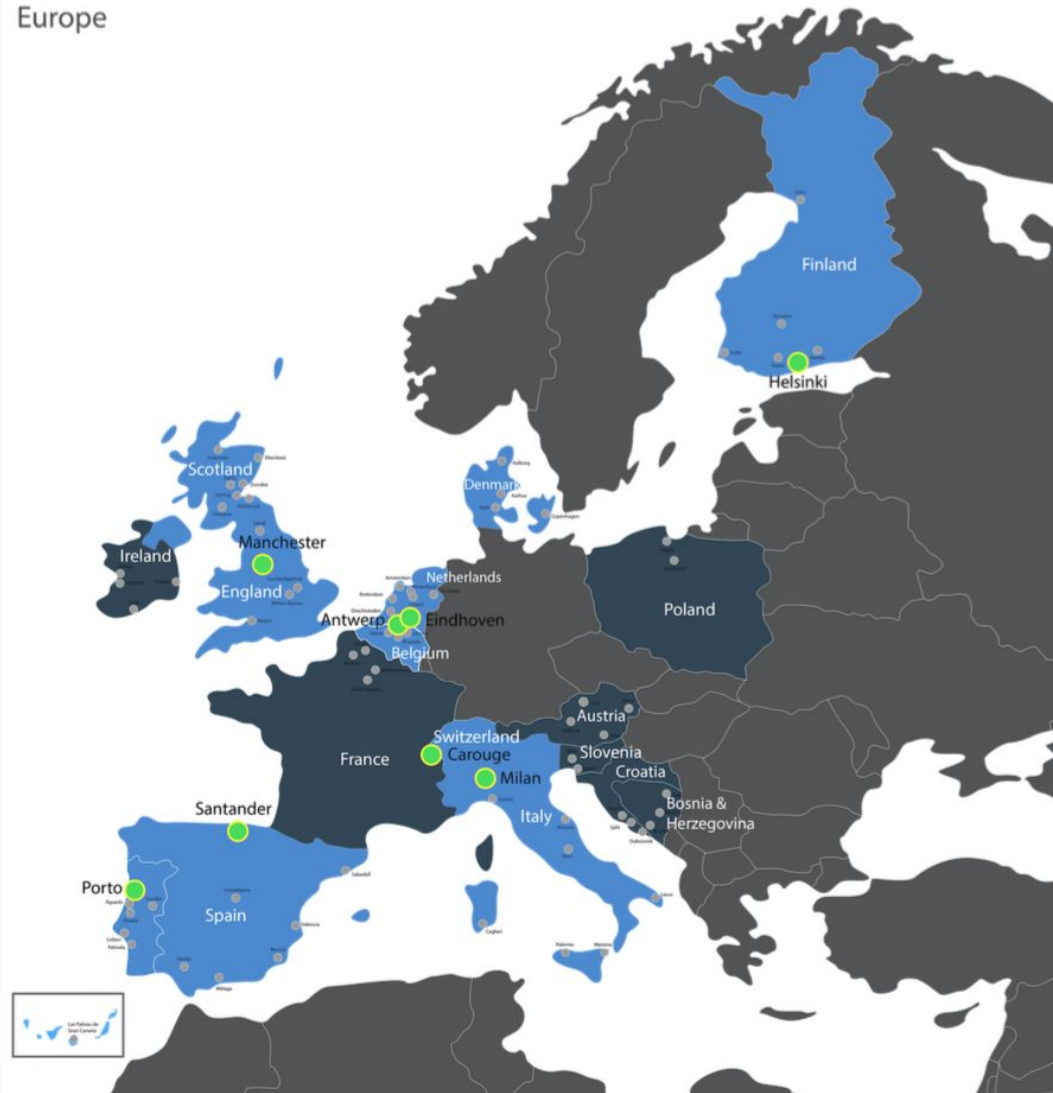
Seongnam City

SYNCHRONICITY

Americas



Europe



South Korea



Oceania



- Directly involved regions
- Other OASC regions (potential replicants)
- Directly involved cities
- Other OASC Cities (potential replicants)

SYNCHRONICITY



Staged, ambitious (33 months) including an open call for SMEs

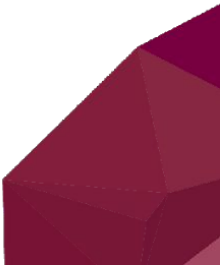


SYNCHRONICITY

1. BASE IoT APPLICATIONS

- Context-adaptive traffic management
- Multi-modal transportation
- Community Policy Suite

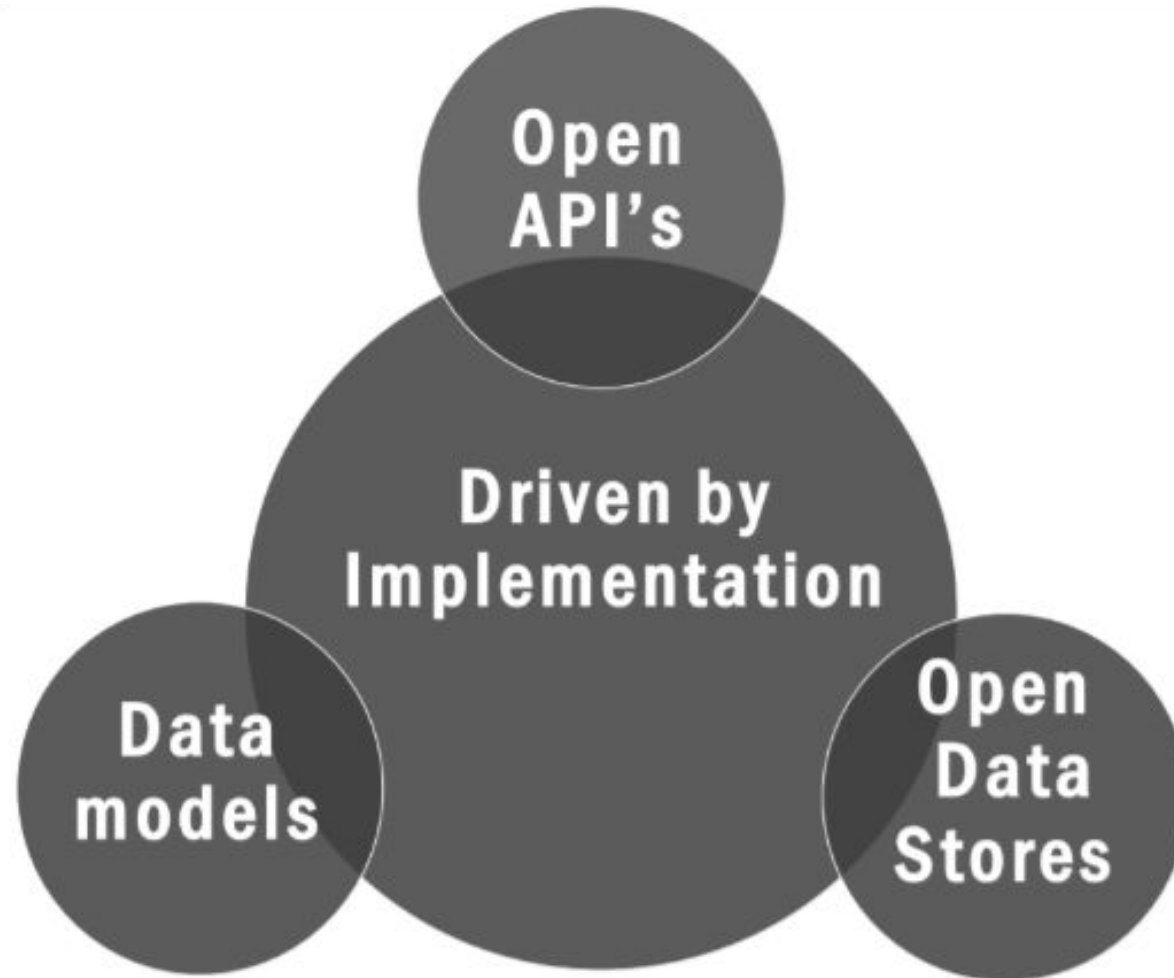
2. ECOSYSTEM ENRICHMENT (3m€)

- New services/apps
 - SME focus
- 

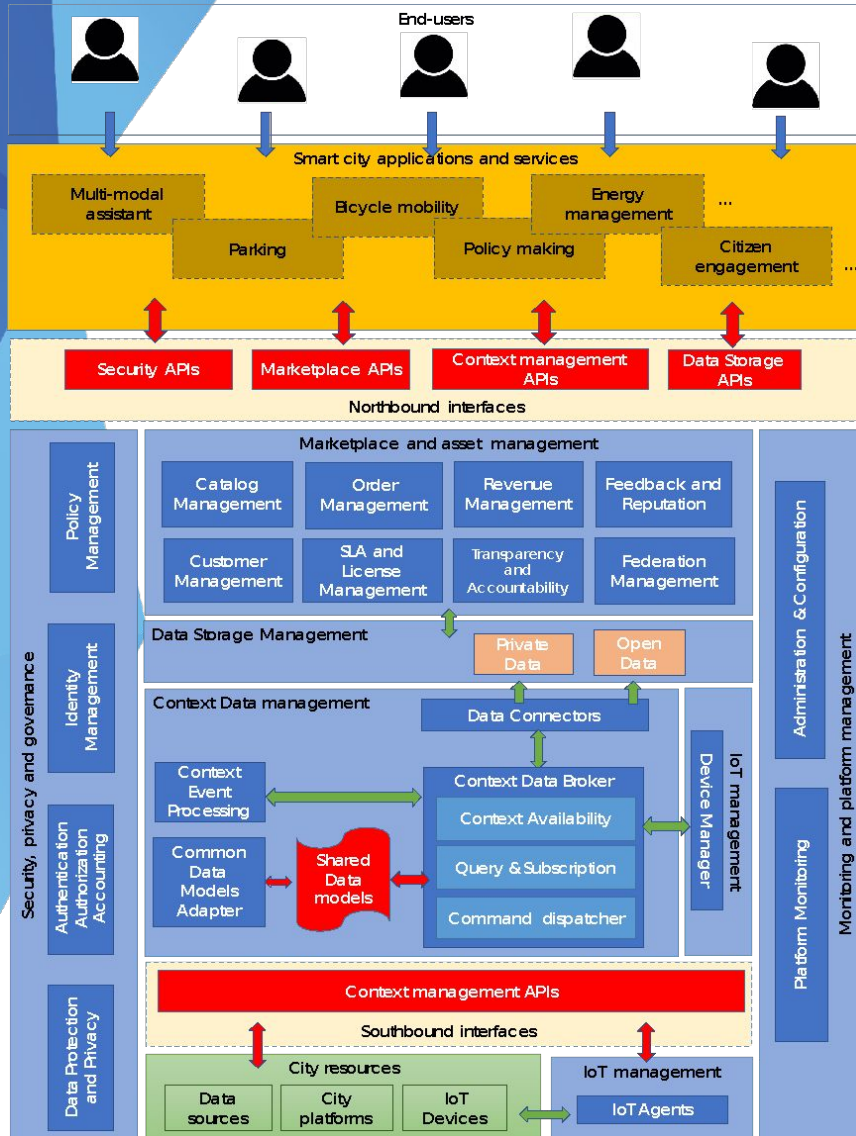
SynchroniCity

Framework and data standard

SynchroniCity Architecture



SynchroniCity Architecture

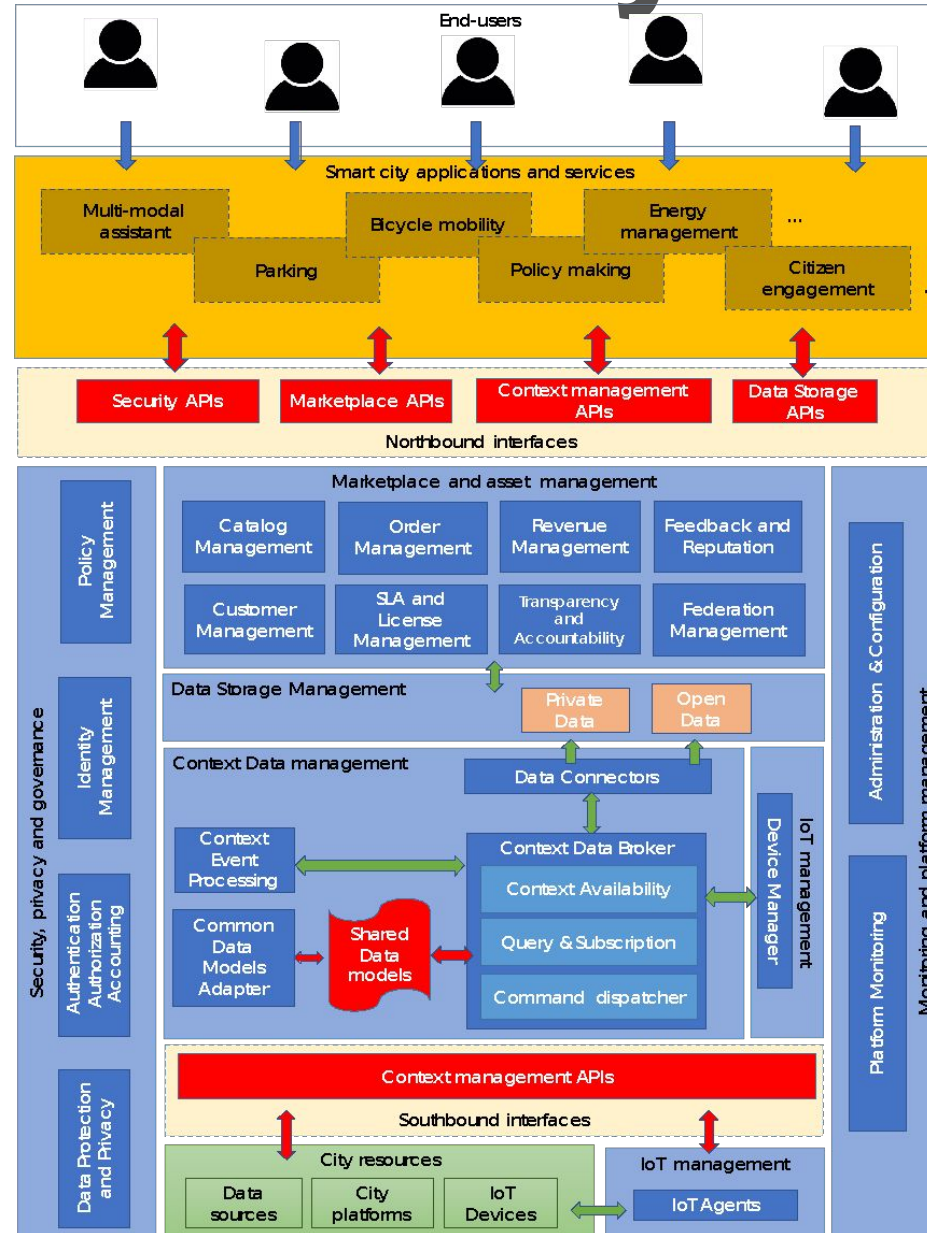


- **IoT Management:** to **interact with the devices** that use different standards or protocols making them compatible and available to the SynchroniCity platform.
- **Context Data Management:** to **manage the context information** coming from IoT devices and other public and private data sources.
- **Data Storage Management:** to provide functionalities related to the **data storage and data quality** interacting with heterogeneous sources.
- **Marketplace:** to implement a hub to **enable digital data exchange** for urban data and IoT capabilities providing features in order to manage asset catalogues, orders, revenue management.
- **Security:** to provide crucial **security properties** such as confidentiality, authentication, authorization, integrity, non-repudiation, access control, etc.
- **Monitoring and Platform management:** to provide functionalities to **manage platform configuration** and to **monitor activities** of the platform services.

SynchroniCity Architecture



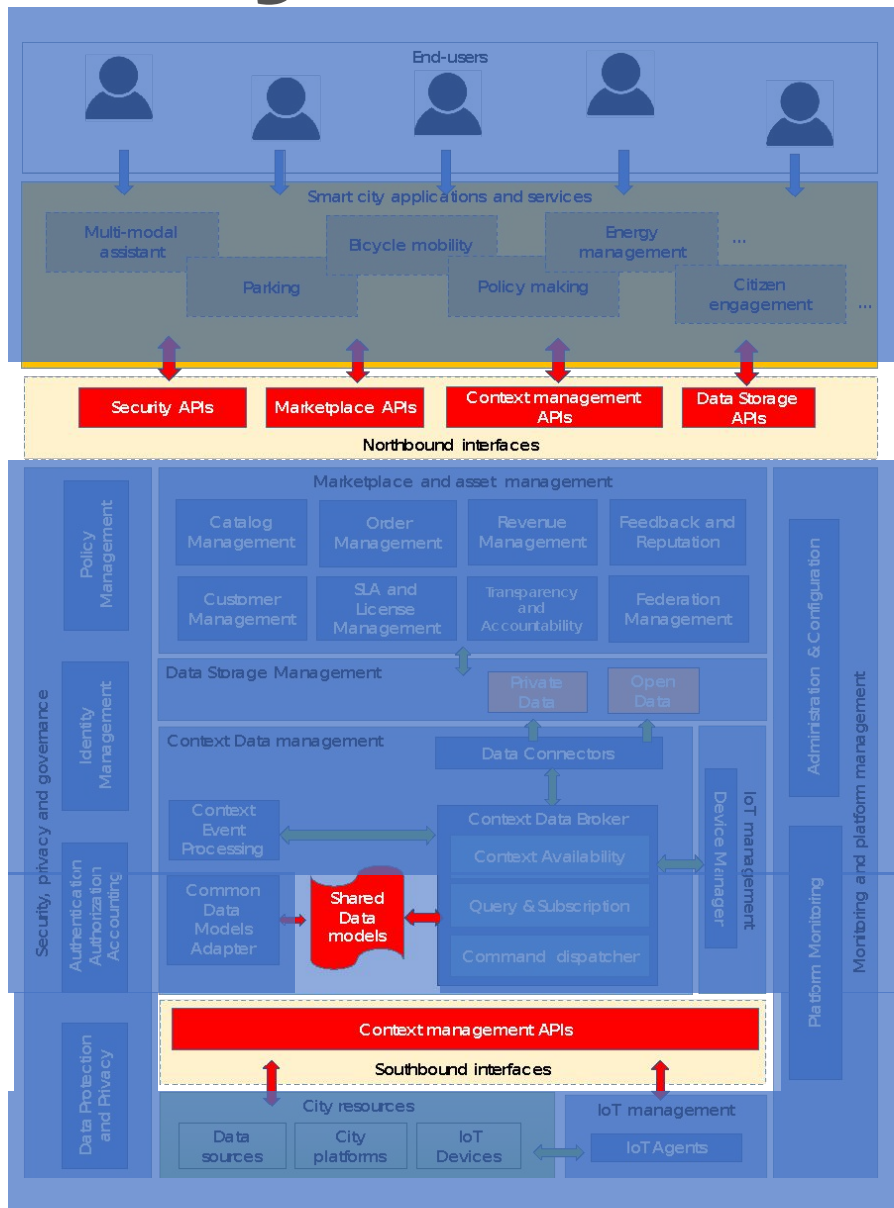
NGSI v2



Ultralight 2.0



SynchroniCity Architecture



Interoperability Points represent the main interfaces that allow a city and IoT solutions to interact with SynchroniCity platform.

Status: Cities are currently becoming compliant with the SynchroniCity framework.

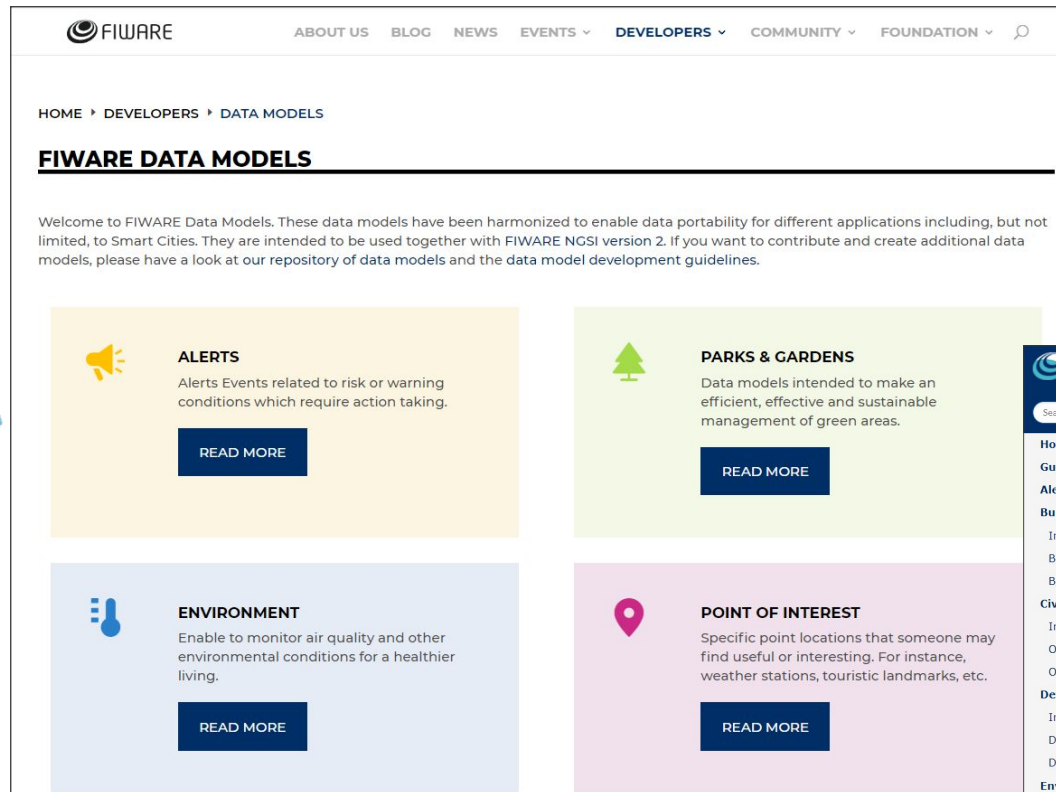
Live updates: You can regularly check the websites

<https://synchronicity-iot.eu/open-call>

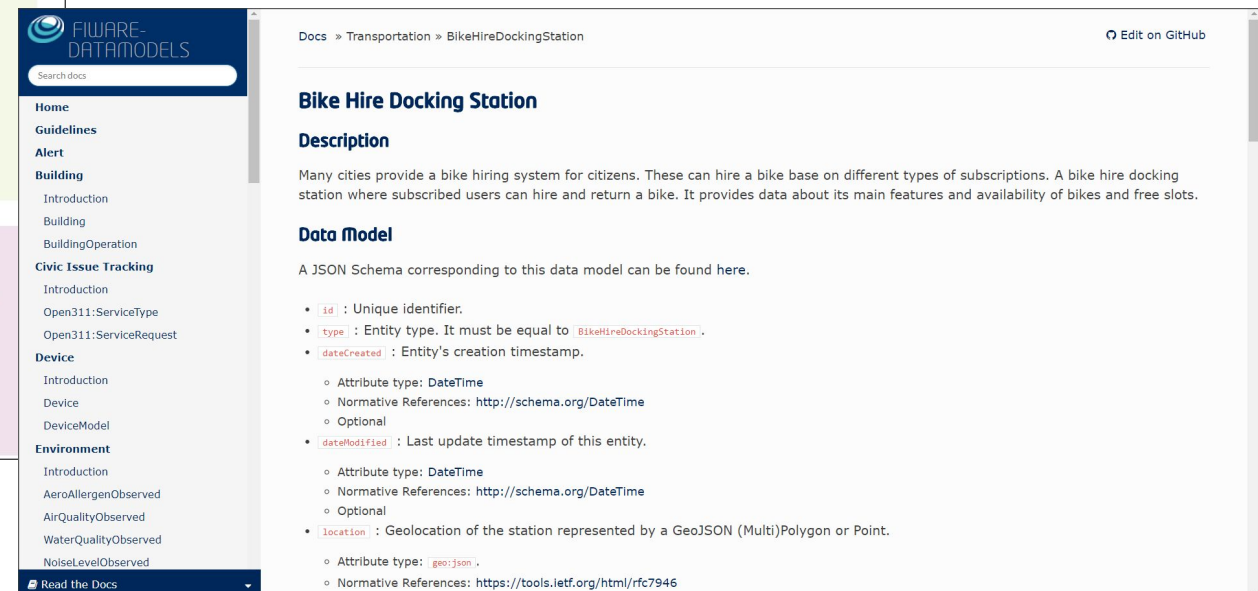
<https://synchronicity-iot.eu/framework>

SynchroniCity Architecture

Data models: uniformisation based on standard data models from OASC initiatives (Fiware data models)



<https://www.fiware.org/developers/data-models/>
<http://fiware-datamodels.readthedocs.io/en/latest/>



Open call procedure and support form

An abstract geometric pattern consisting of various-sized triangles in shades of gray, located in the bottom right corner of the slide.

SYNCHRONICITY

Synchronicity opens up a global IoT market where cities and businesses develop shared digital services to improve the lives of citizens and grow local economies.



OPEN CALL
1st JUNE
2018

FUND



CITIES

- Helsinki
- Manchester
- Eindhoven
- Antwerp
- Carouge
- Milan
- Santander
- Porto

synchronicity-iot.eu
info@synchronicity-iot.eu
@SynchronicityIoT
@SyncCityIoT

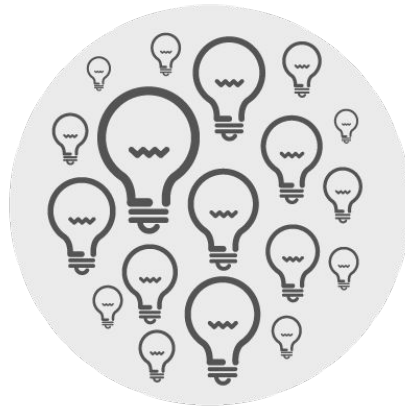


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No732240

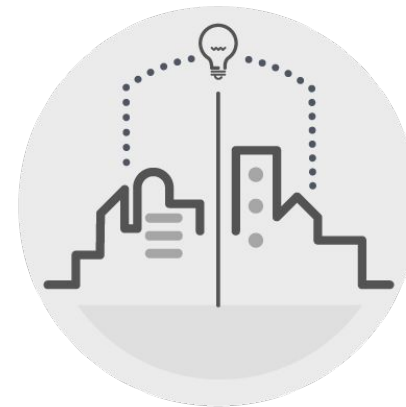
Open call for LSP



€3 M
Open Call



Selection of
10-25 city
solutions



Piloting in at
least 2 cities
simultaneously
(but preferably
more)



Up to 6 month
demonstration
period

Who is it for?



Lead SMEs
can apply
alone or in a
pilot group

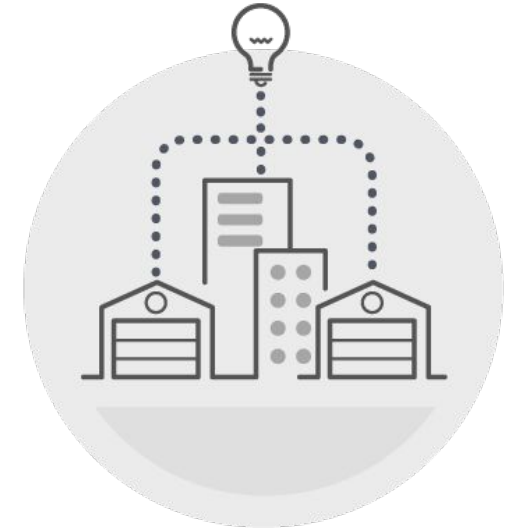
SMEs

- **Lead SME:** IoT applications or full-stack solutions
- **Not Lead SME:** complementary to Lead SME, either IoT enabled or expert knowledge on the application
- Solutions that have already been demonstrated in a relevant environment (**TRL $\geq$ 6**)



New cities wanting to
become part of
Synchronicity

New Cities
and **Large**
Businesses
can only
apply in a
Pilot Group

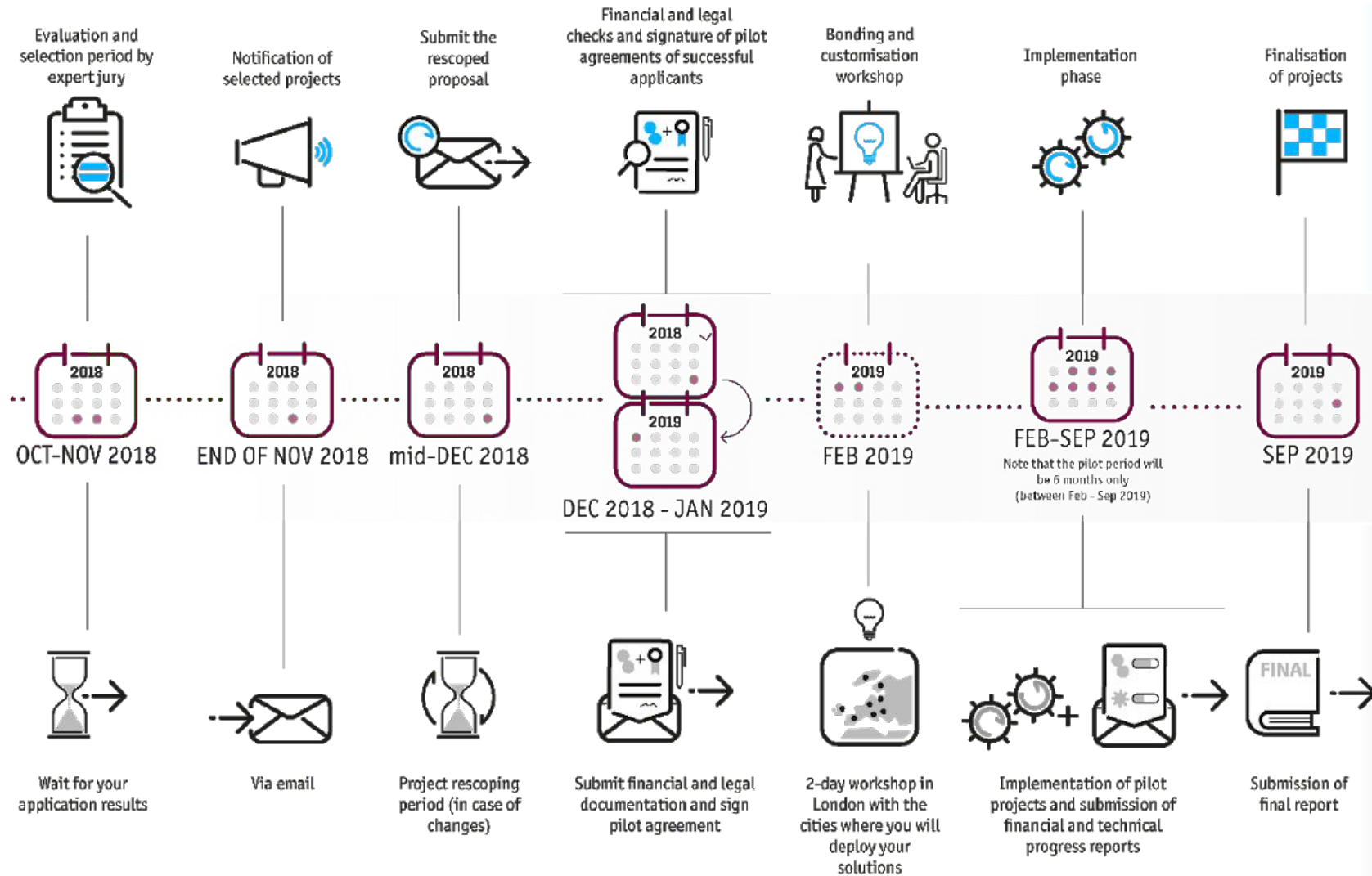


Large Businesses wanting
to become part of
Synchronicity

Pilot Groups

**Lead SME + SME and/or City and/or
Large Business**

Timeline



How am I going to be evaluated?

Excellence (0-5 points)

- What is the vision, ambition and value proposition of your solution? Is your project proposition clear in meeting the objectives of the call?

Impact (0-5 points)

- Does your project address a challenge recognised or prioritised by the cities? KPIs? Who will benefit from the implementation of your solution or service and how? How will your solution impact the life of citizens and communities?

Feasibility (0-5 points)

- Can you demonstrate that the project is feasible within the budget? If it is not, can you demonstrate that you have the additional necessary resources to make it feasible? Is the budget clearly described?

Sustainability (0-5 points)

- How credible is your methodology in proving the scalability of product/service? How can you demonstrate the interoperability, replicability and reusability of your solution? What's your exploitation/commercialisation plan for this solution? How clear is your revenue model and monetisation strategy? Will your solution support the goal of creating more jobs across Europe?

Datasets for Antwerp

Government sites

Datasets on the Antwerp City Platform ACPaaS.

e.g. LEZ Inbound car traffic counters (15 minute aggregated from ANPR), Bike tracking data, Big Belly usage.

<http://portaal-stadantwerpen.opendata.arcgis.com/datasets>

309 API based datasets from Antwerp

e.g. Bike sharing and public transport stations.

Datasets on opendata.vlaanderen.be

More than file based 5000 datasets

e.g. Traffic counters updated and aggregated per minute.

Public transport sites

Realtime data API for train (NMBS).

Realtime data API for tram and bus (DeLijn)

Please contact Digipolis if you want to integrate the datasets from the government sites in your solution.

Digipolis will assess the feasibility to harmonize the dataset to NGSI data models on our local Synchronicity framework.

Scope by cities

Core Pilot Cities

		Antwerp	Carouge	Eindhoven	Helsinki	Manchester	Milan	Porto	Santander
Theme	Challenge								
SUSTAINABLE MOBILITY	Enabling and improving MaaS	◆		◆	◆	◆	◆	◆	◆
	Encouraging more non-motorised transport	◆	◆	◆	◆	◆	◆		◆
CITIZEN ENGAGEMENT	Increasing citizen engagement in decision making		◆	◆	◆	◆	◆	◆	◆
	Increasing a greater level of diversity in political engagement		◆	◆	◆	◆		◆	◆
ENVIRONMENT & WELLBEING	Climate change mitigation	◆	◆	◆	◆	◆	◆	◆	
	Reducing noise and air pollution	◆	◆	◆	◆	◆	◆	◆	◆
OPEN THEME	Open Challenge	◆	◆	◆	◆	◆	◆	◆	◆

Technology Readiness Level

TRL 1 – basic principles observed

TRL 2 – technology concept formulated

TRL 3 – experimental proof of concept

TRL 4 – technology validated in lab

TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)

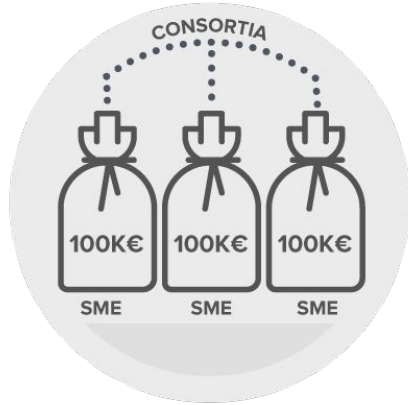
TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 7 – system prototype demonstration in operational environment

TRL 8 – system complete and qualified

TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

Funding



Each application can be funded with:

- up to €100,000 if an SME applies alone
 - up to €200,000 for a Pilot Group of 2
 - up to €300,000 for a Pilot Group of 3 or more
-
- Co-fund 80% of the individual total budget. The remaining 20% must be provided by the applicants either as in-kind support or by bringing in funding to the project.
 - Cities and large businesses eligible for funding can claim a maximum of €60,000

SMEs, cities and large businesses that are not from EU or H2020 associated countries can participate but are not eligible for funding.



EXAMPLES

CASE 1 – SME applies individually

Principle:

- i. Fund is **80%** of the total cost of the project, with an **overall cap of € 100,000**
- ii. SMEs will need to report and justify their whole costs on the project, regardless the grant that they will receive.

Examples:

- 1. Total cost of the project: € 50,000
Total grant: € 40,000 ($= 50,000 * 0.8$)
- 2. Total cost of the project: € 100,000
Total grant: € 80,000 ($= 100,000 * 0.8$)
- 3. Total cost of the project: € 150,000
Total grant: € 100,000. The 80% principle cannot be applied, as it would be higher than the € 100,000 overall cap, i.e. $150,000 * 0.8 = € 120,000 > € 100,000$

IPR and Data

Who keeps the IPR?

IP will remain yours or of your Pilot Group

Synchronicity will not retain any equity

However, SynchroniCity consortium will be licensed the right to use (internally) any IPR you produce as part of the project, for three years after the project finishes.

Additionally, SynchroniCity or the European Commission may ask you to present your work as part of our public relations and networking events, in order to showcase the benefits of the SynchroniCity project.

Who own the data produced?

The type of data that you may make use of could be open data and close data, with either open access or restricted access. Each city has its own data policy and preferences on how data should be treated in their region.

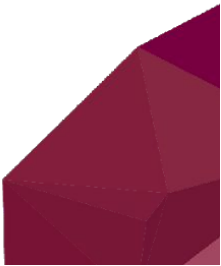
It will be the responsibility of the applicants to ensure they understand the conditions on data in each city they plan to pilot, as well as associated licences and costs, in order to provide a sound proposal that takes this diversity into account.

The data produced during the pilot phase will be shared according to the contractual *Data Sharing Agreements ...*



Get started

Download the *Toolkit*.
Available June 1



Support during application

OPEN FORUM

Ask questions or review answers to previous questions. This repository will be the quickest way to find answers.

HELP DESK

helpdesk@synchr-onicity-iot.eu
For private questions.

CLINICS

Launch Event and Clinic where applicants will receive support in person during the open call application period.

WEB-INARS

There will be two webinars for those applicants that cannot physically attend some of the Launch Events and Clinics.

CON-NECT

Section on the website to facilitate the encounter of other SMEs and partners which want to participate in the open call. It is though the responsibility of each applicant to find the right partner if they wish to form a Pilot Group.

30 Sept 2018

OPEN CALL APPLICATIONS

- Anonymisation
- Eligibility check (**GO/NO GO**)

TECHNICAL REVIEWERS

GO/NO GO

CITY REVIEWERS

+

COMMERCIAL REVIEWERS

Impact (0-5)
Excellence (0-5)
Feasibility(0-5)
Sustainability (0-5)

OCEC DISCUSSION

Finalist List

List Projects from
Highest Score to
Lowest

SCORE $\geq 14/20$
(**GO/NO GO**)

COLLECTION OF
AVERAGE SCORE
+ FEEDBACK BY
OCEC

Considerations:

- Geographical balance
- Themes&Challenges
- Pilot Cities views
- If equal score: feasibility and sustainability prevails

WINNING PROJECTS LIST

ETHICS &
PRIVACY
CHECKS BY EPB

ETHICS &
PRIVACY
CHECKS 2
(**GO/NO GO**)

**OUTCOME
COMMUNICATION**

1st week of Nov 2018

Amendment Period

End Nov 2018

OCEC = Open Call Evaluation Committee

EPB = Ethics and Privacy Board



Where can I learn more?

Introducing SynchroniCity Open Call: Webinar for Applicants

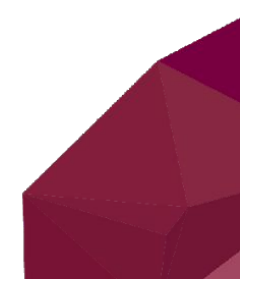
Date and time

- Tuesday 12th of June 2018
- 10:00 – 12:00 CEST

Speakers from the SynchroniCity project

- Francesca Spagnoli - European Network of Living Labs
- Martin Brynskov - Aarhus University
- Martino Maggio - Engineering Ingegneria Informatica SpA
- Gemma Guilera - Future Cities Catapult

Find the agenda and register [here](#)



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