

# Helsinki Loves Developers: How to create new city data by crowdsourcing and IoT?

**15:00 Building an open ecosystem with new IoT projects, case MySMARTLife & Synchronicity, Hanna Niemi-Hugaerts, Forum Virium**

**15:15 Collecting data by crowdsourcing, case environmental data, Henri Kotkanen, Gaika project**

**15:35 Easier - Cheaper - Faster! Taking in use IoT solutions, Aapo Rista, Forum Virium**

**15:55 Break**

**16:15 SELECT4CITIES IoT Platform development competition, Hugo Goncalves, Forum Virium**

**16:30 BalticAPP – collecting data by crowdsourcing, Janne Artell, Natural Resources Institute Finland**

**16:50 Living Lab buses as a development platform, Immo Heino, VTT**

**17:10 Mydata point of view, Kai Kuikkaniemi, Open Knowledge Finland**

**17:30 Chance to test/learn more about IoT devices**

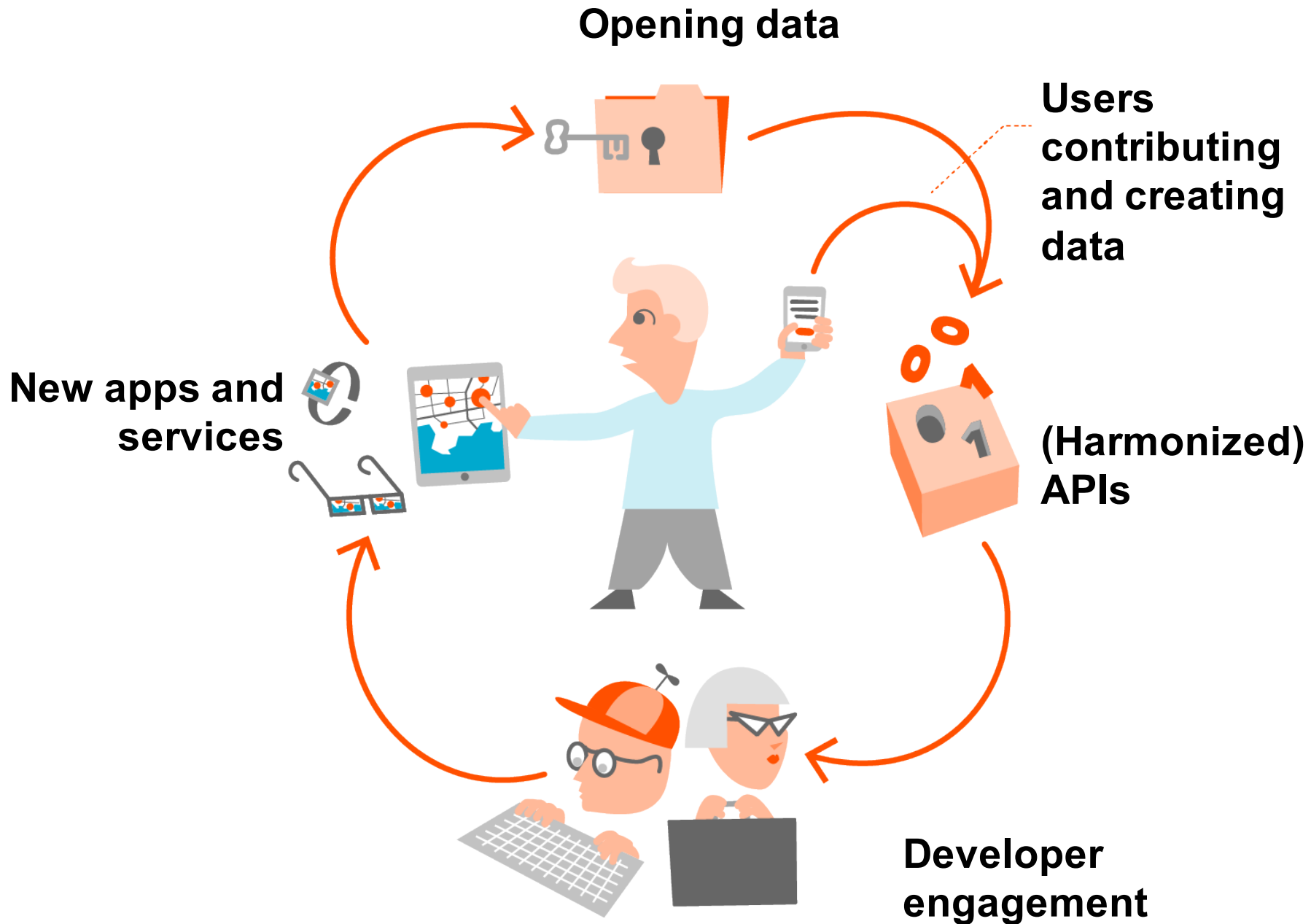
# Building an open ecosystem with new IoT projects

Hanna Niemi-Hugaerts  
Program Director, IoT

FORUM  
VIRIUM  
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VIRIUM  
HELSINKI**

# Open Helsinki



# Open Helsinki & IoT

Open (data,  
APIs,  
Source  
code)

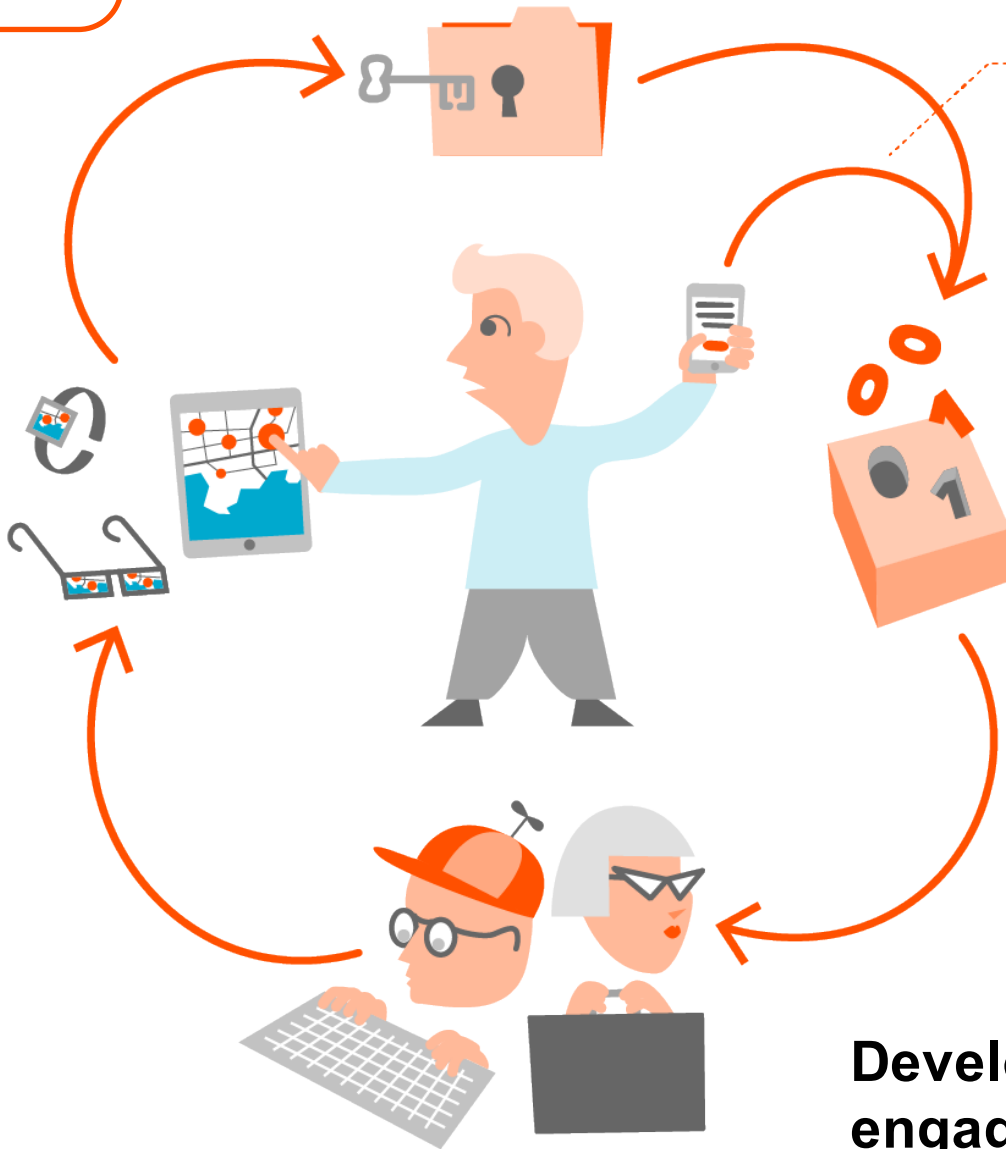
Opening data

Users  
contributing  
and creating  
data

(Harmonized)  
APIs

New apps and  
services

Developer  
engagement



# Open Helsinki & IoT

Open (data, APIs, Source code)

Engaging (in data collection & app/tech creation)

Opening data

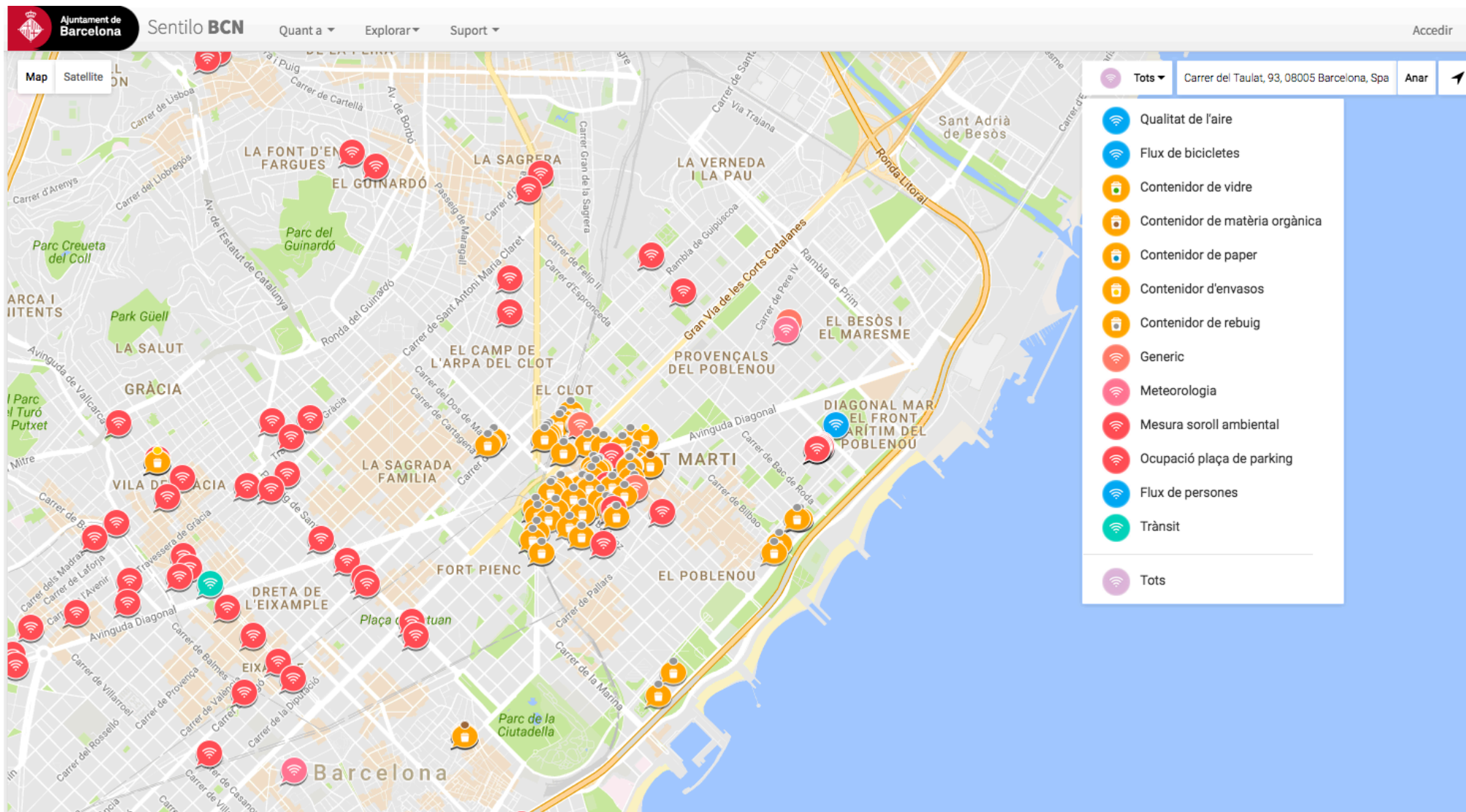
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New apps and services

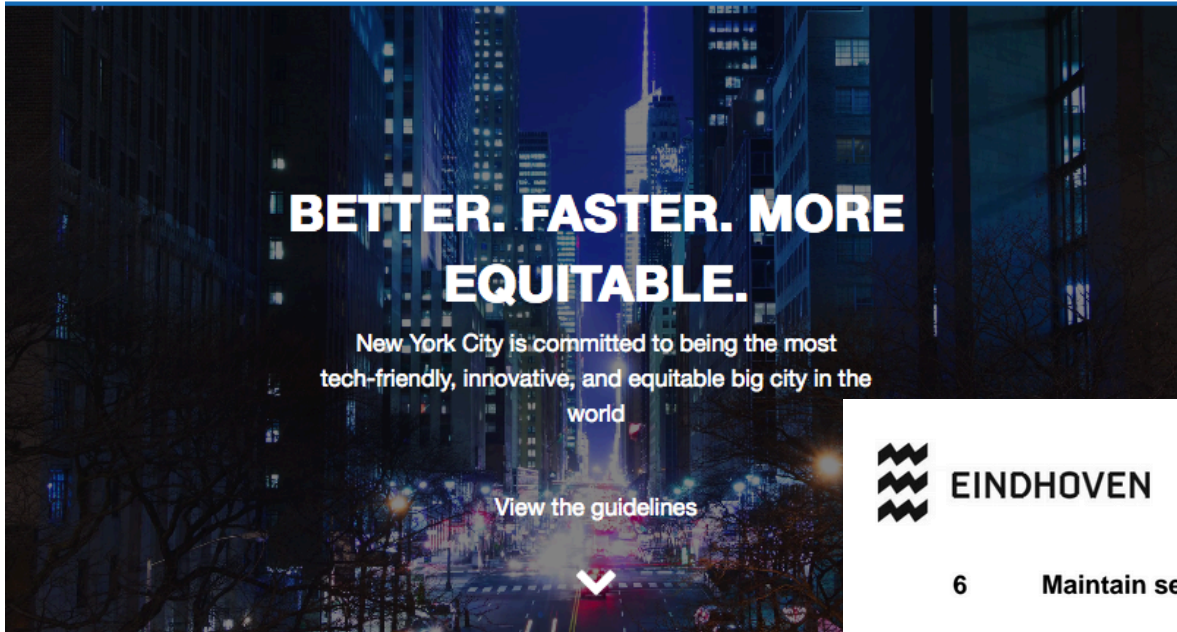
Developer engagement





<http://connecta.bcn.cat/connecta-catalog-web/component/map>

<http://www.sentilo.io/xwiki/bin/view/APIDocs/WebHome>



These guidelines provide a framework to help government and our partners responsibly deploy connected devices and IoT technologies in a coordinated and consistent manner. More than 10 leading cities have now joined New York City's effort.



EINDHOVEN

6 Maintain security



The reliability of components, platforms, solutions and services must be constantly safeguarded.

Ensuring confidentiality, integrity and availability is vital to essential services and core parts of the infrastructure, which need to be safeguarded to the highest possible degree. In addition, all digital assets must be well-protected from attack, damage or unauthorized access.

7 Accept social responsibility



Providing new technologies and services, and collecting and combining data may result in unforeseen effects on society or individuals.

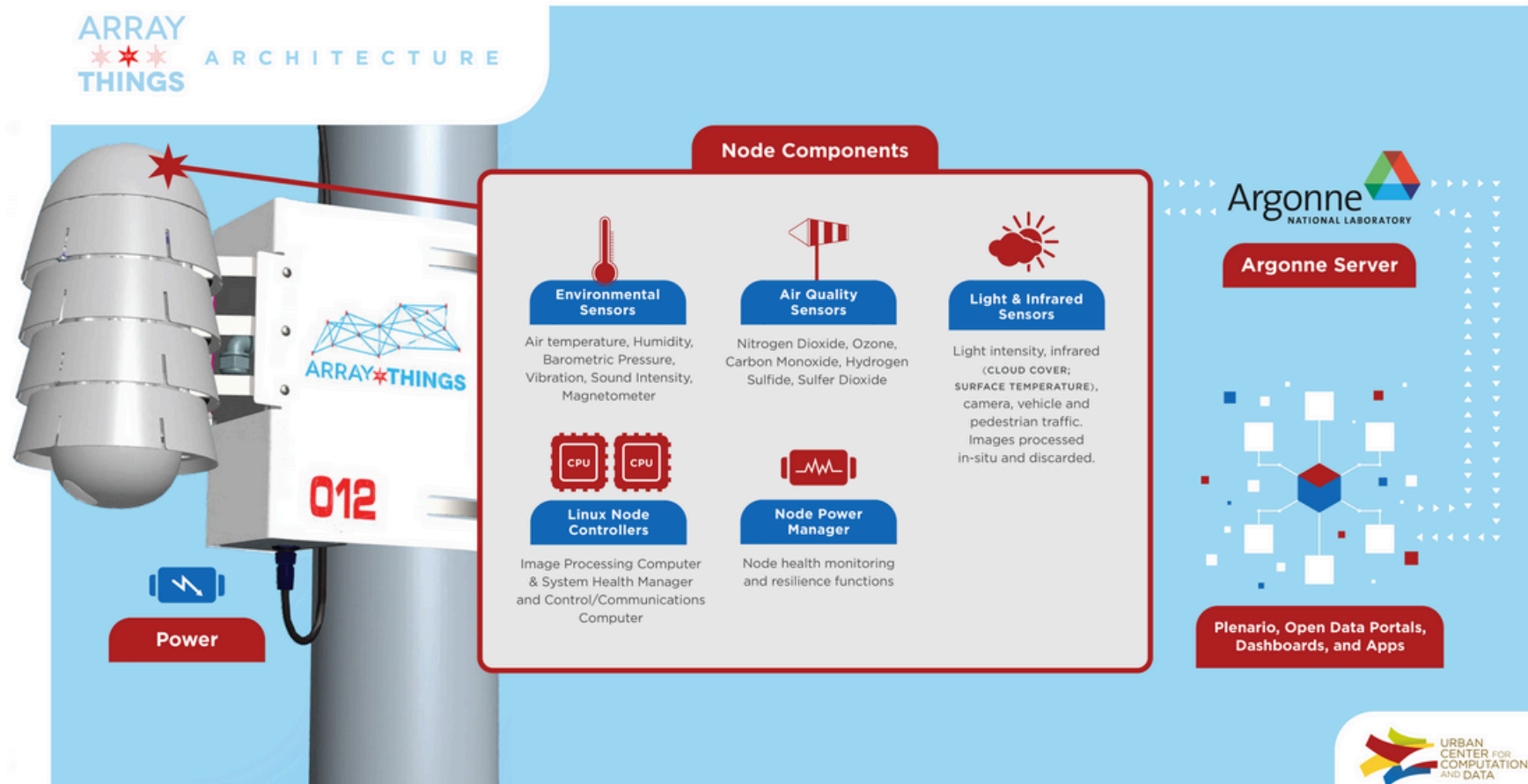
We cannot predict the future. We encourage experimentation, provided responsibility is taken for the consequences.



# What Is The Array of Things?

What if a light pole told you to watch out for an icy patch of sidewalk ahead? What if an app told you the most populated route for a late-night walk to the El station by yourself? What if you could get weather and air quality information block-by-block, instead of city-by-city?

The Array of Things (AoT) is an urban sensing project, a network of interactive, modular sensor boxes that will be installed around Chicago to collect real-time data on the city's environment, infrastructure, and activity for research and public use. AoT will essentially serve as a "fitness tracker" for the city, measuring factors that impact livability in Chicago such as climate, air quality and noise.



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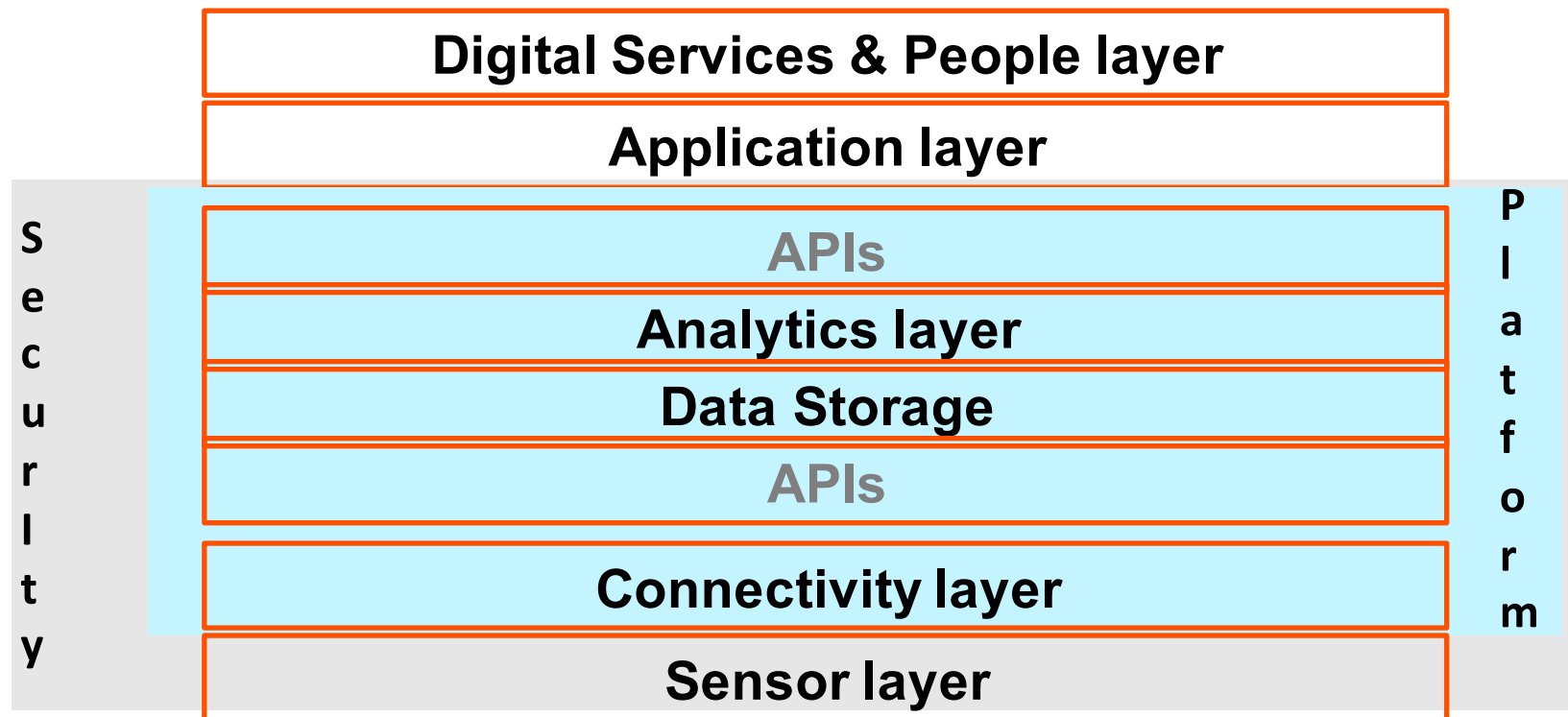
Enabling business creation in all levels of IoT tech stack, creating larger market

New apps and services

Developer engagement



# Smart City IoT tech stack



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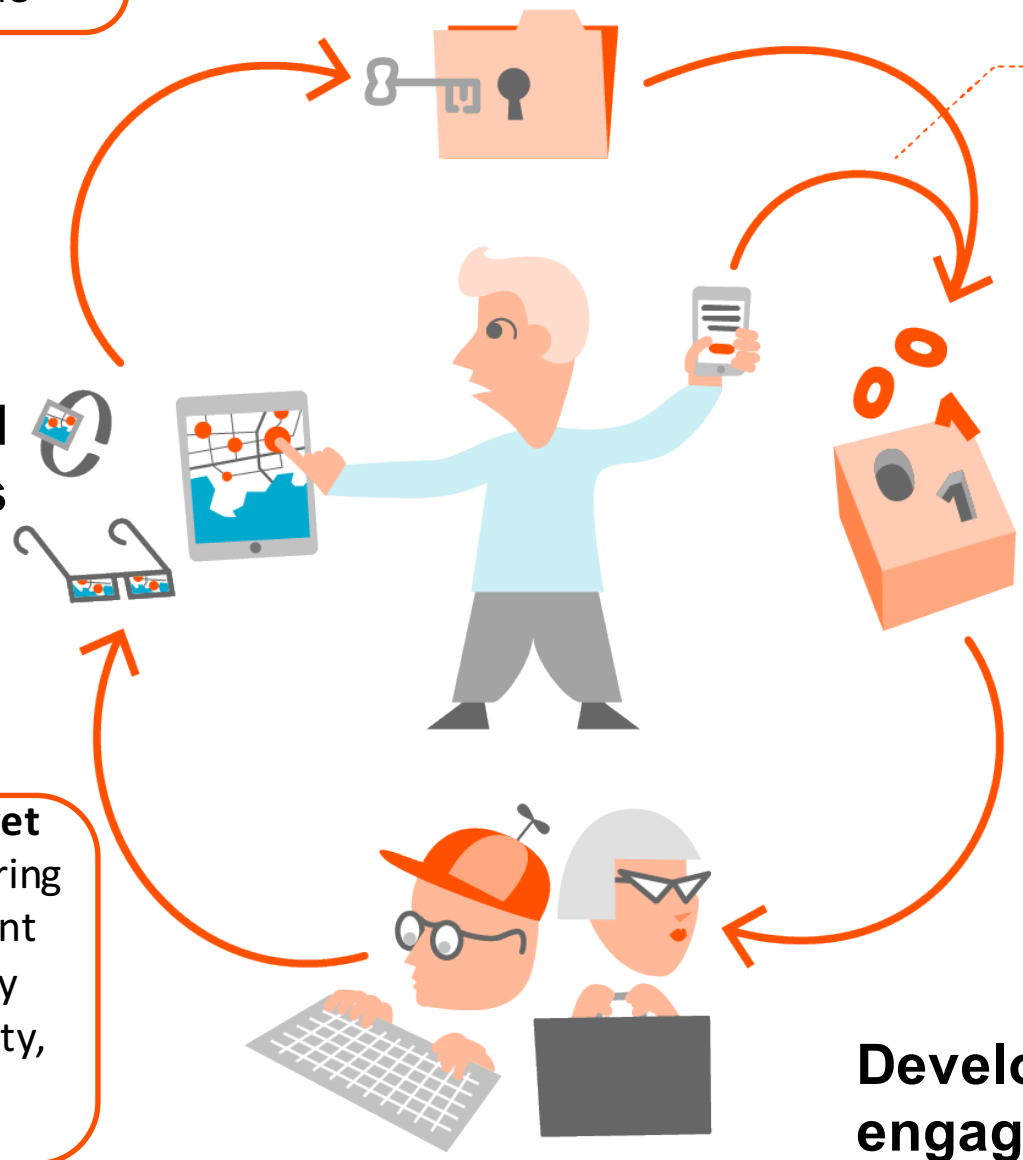
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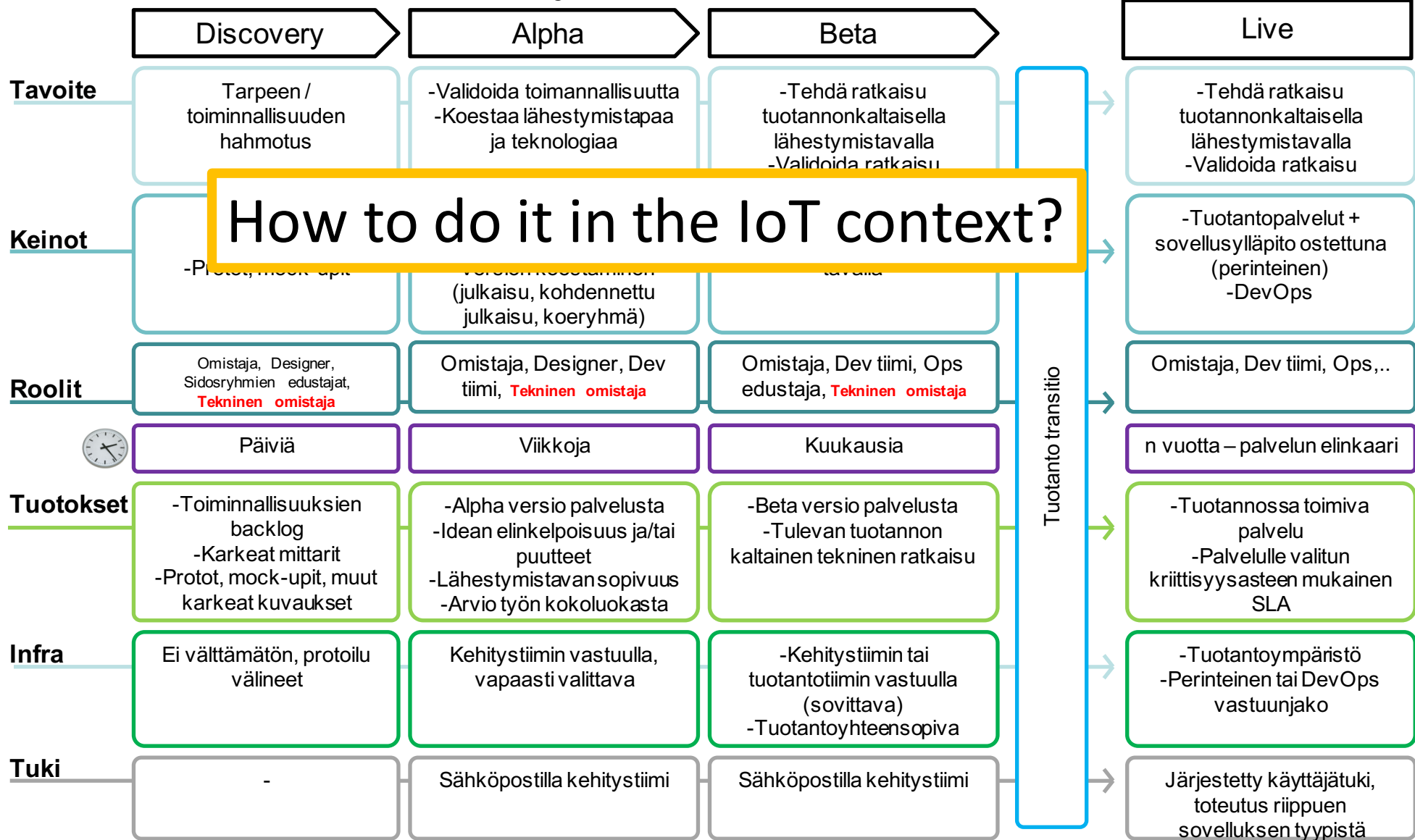
Experimental, yet functional: ensuring fast development but also privacy (mydata), security, architectural aspects

Developer engagement





# Kokeilevan kehityksen vaiheet



How to do it in the IoT context?

Tuotanto transiio

# Open Helsinki & IoT

**Open** (data, APIs, Source code)

**Engaging** (in data collection & app/tech creation)

**Opening data**

**Users contributing and creating data**

**Impact:** driving change, improving life quality, saving time

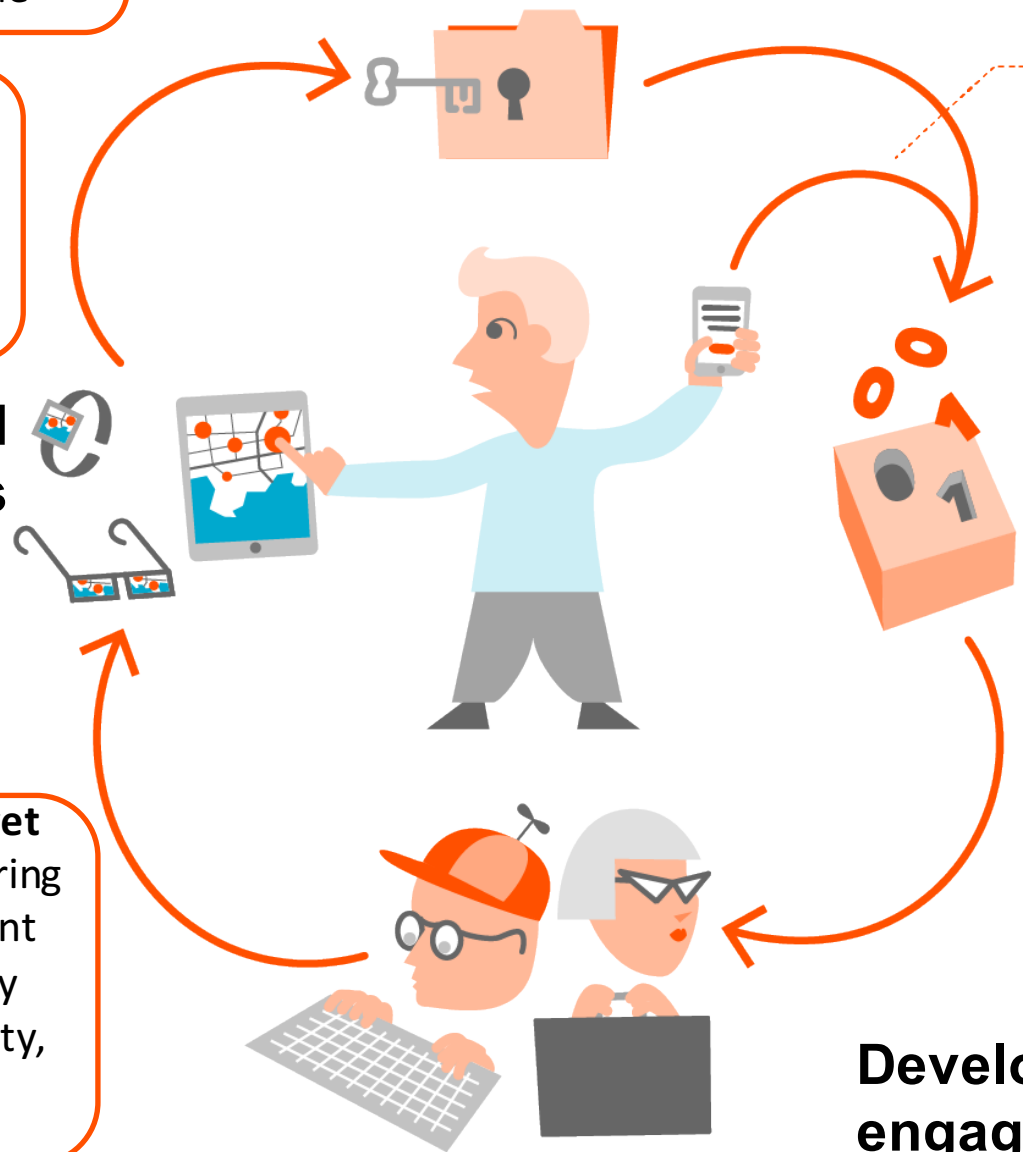
**New apps and services**

**(Harmonized) APIs**

**Enabling business creation** in all levels of IoT tech stack, creating larger market

**Experimental, yet functional:** ensuring fast development but also privacy (mydata), security, architectural aspects

**Developer engagement**



# Coming up

- IoT guidelines: tech stack & general principles (ml. mydata)
  - IoT "working group"
- User stories for "IoT platform"
- Data crowdsourcing experiment with Urban Facts
- IoT Lab and building of developer community
  - Boost from different open calls and incubator activities
- Overview to the different IoT activities
  - What works where? Sensors, connectivity, range, data collection, standards, APIs, platforms, ToS, Licenses
  - Creating a roadmap for moving forward with both use cases and technological readiness

# FVH Helsinki IoT projects On domains of mobility, energy, environment & more

		Synchroni City	MySmart Life	FinEST Mobility	BioTope	Select4Cities	6Aika Open Data	Env&You
	Application layer	x	x	x	x	x		x
Platform	APIs for Data & Services	x	x		x	x	x	
Platform	Analytics Layer		x		x	x	x	x
Platform	Data Storage	x	x		x	x	x	x
Platform	APIs for sensor input	x	x		x	x	x	
Platform	Connectivity layer	x	x		x	x	x	x
	Sensor/IoT Layer	x	x	x	x	x	x	x
	Security	x				x	x	
	Crowdsourcing/MyData						x	x
	Harmonization	x	x		x	x		x
	Dev & Biz Engagement	x	x	x	x	x	x	



# IoT & Data team Project portfolio

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# Synchronicity

## Delivering an IoT enabled Digital Single Market for Europe and Beyond

Piloting route planning with new IoT enabled features:

- Clean air or low noise level navigation feature to route-finding (integration to environment sensors, algorithm development)
- Tram indoor wheelchair/pram vacancy sensor
- [Living Lab Bus](#) basic sensor package – TBC – use case 3

Advancing on:

- open IoT platform,
- real-time open data,
- open APIs,
- harmonization, guidelines, policies, use cases and business cases

Local partners: Forum Virium, Aalto

2017-01-01 to 2019-09-30



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# MySMARTLife

## Smart Transition of EU cities towards a new concept of smart Life and Economy

- Carbon Neutral Me App & Digitransit features
- Up-take of new sensing infrastructure in the smart districts to support actions e.g. energy and mobility
- Helsinki Urban platform
- Open Data

Partners: Forum Virium, VTT, Helen, Salusfin, Fourdeg, HM

2016-12-01 to 2021-11-30,



# 6Aika Open Data and APIs

**Making our open data your business**

4 harmonized APIs

OASC connection

Guidelines, governance models

Boosting data-driven business:

- Trainings, Events
  - Consult pool
  - Call for experiments
  - Piloting data collection
- 
- 2014-2017



# Team

- **Annukka Varteva**, Open Data, APIs, City2City collaboration, guidelines, comms, project management
- **Aapo Rista**, Dev, APIs, Documentation, IoT, Sensors, Lab
- **Kaisa Sibelius**, Business support, Consultation, Events, Ecosystems, Funding, Comms (+Sote LL project)
- **Noora Suvanto**, Comms, Production, CR metering
- **Timo Ruohomäki**, project management, IoT
- **XX**, Dev, Routeplanning, IoT
  
- Plus Henri Kotkanen (City of Helsinki, Urban Facts) and many more

# Be part of it!

- Vekotinverstas IoT Lab & Training space spring 2017->
- Contribute to IoT platform user stories Trello board: <https://trello.com/b/nYa3Ez5F/iot-kokeilu-platform-kayttajatarinat>
- Synchronicity open calls late 2017

Hel<3Dev: Uutta dataa kaupungista IoTn ja joukkoistamisen avulla



The image shows a social media event card for 'Helsinki Loves Developers'. The banner features the text 'Helsinki Loves Developers' in white on a blue background, with the hashtag '#heldev' below it. To the right is a logo for 'HEL DEV dev.hel.fi'. Below the banner, the event details are listed: 'MAR 2 Hel<3Dev: Uutta dataa kaupungista IoT...', 'Thu 3 PM · Helsinki', and '26 people interested · 7 people going'. A 'Going' button is visible on the right.

# FORUM VIRIUM HELSINKI

For further collaboration:

Hanna Niemi-Hugaerts, Program Director - IoT

Hanna.niemi-hugaerts@forumvirium.fi

+358 40 6749911

@CitySDK\_Hanna

[www.forumvirium.fi](http://www.forumvirium.fi)



*vimeo*



Linked 

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