Management Of Networked IoT Wearables – Very Large Scale Demonstration of Cultural Societal Applications
(Grant Agreement No 732350)

D11.1 Collective Awareness Platform for Citizen Engagement and Co-creativity

Date: 2018-08-29

Version 1.0

Published by the MONICA Consortium

Dissemination Level: Public

Co-funded by the European Union's Horizon 2020 Framework Programme for Research and Innovation under Grant Agreement No 732350

Document control page

Document file: D11.1 Collective Awareness Platform for Citizen Engagement and Co-creativity 0.3.docx
Document version: 1.0
Document owner: IN-JET

Work package: WP11 – Socio-economic & Business Processes
Task: Task 11.1 – Citizen Awareness, Engagement and Co-creation
Deliverable type: OTHER

Document status: ☒ Approved by the document owner for internal review
☒ Approved for submission to the EC

Document history:

Version	Author(s)	Date	Summary of changes made
0.1	Louise Birch Riley (IN-JET)	2018-06-29	ToC and initial content
0.2	Louise Birch Riley, Veronica Chesi (IN-JET), Camilla Solkær Buskov (KK), Elena Ciarlo (TO)	2018-08-21	Added more content, Incorporated input from CNET, TO and KK. Ready for internal review
0.3	Louise Birch Riley	2018-08-28	Incorporated changes according to comments from internal reviewers
1.0	Helene Udsen (IN-JET)	2018-08-29	Minor editing and proofing Final version submitted to the European Commission

Internal review history:

Reviewed by	Date	Summary of comments
Dorothy Monekosso, Suzanne Morton (LBU)	2018-08-24	Ok, minor corrections. Proofreading / grammatical
Vincent Gissinger (ACOU)	2018-08-24	Accepted with comments. Very informative report about the open data in some of the MONICA pilots. A few examples of past actions made with the help of CAP would help the reader to understand what can be really achieved with this tool.

Index:

1 Executive Summary 4
2 Introduction 5
2.1 Purpose, context and scope of this deliverable 5
2.2 Structure and content of this deliverable 5
3 Collective Awareness Platform for Sustainability and Social Innovation – CAPS 6
3.1 The MONICA CAPs 6
4 Copenhagen City CAP 7
4.1 Background 7
4.2 Site description 7
4.3 Data capture and display 9
4.4 Expected impact 11
4.5 Timing 11
5 Torino City CAP 12
5.1 Background 12
5.2 Site description 12
5.3 Data type and display 15
5.4 Expected impact 15
5.5 Timing 15
6 Open data initiatives 16
6.1 Copenhagen Data 16
6.1.1 Other Copenhagen portals 16
6.2 Torino Open Data Portal 17
6.2.1 Other Torino portals 17
6.3 Greater Lyon Data Platform 17
6.4 Transparenzportal, Hamburg 18
6.5 European Open Data Portal 19
7 Conclusion 21
8 List of Figures 22
8.1 Figures 22

1 Executive Summary

A Collective Awareness Platform (CAP) is an online platform, which presents factual information about certain environmental or societal issues and then, based on this informed knowledge, invites or unites people in creating solutions which can help improve the situation.

This deliverable presents the concepts of the two Collective Awareness Platforms deployed in MONICA: One for the City of Copenhagen, looking at the environmental impact that sound has on city life and one for the City of Torino, presenting the impact of nightlife.

The concept of the Copenhagen CAP is to create awareness about sound/noise in the city in a new way by mounting sensors on electric city bikes and visualise the results in the CAP. A preview of the CAP is available at: https://copenhagen.monica-project.eu with official launch expected early 2019.

The concept of the CAP for Torino City is to create awareness about urban nightlife and its impact, also supporting a hackathon organised by the city. A preview of the CAP is available at: https://torino.monica-project.eu with official launch expected in Autumn 2018.

In terms of citizen engagement, the Copenhagen CAP is an example of direct interaction, involving citizens in the value creation by being active collectors of the data. The Torino CAP provides factual information and data to strongly support a co-creation phase that will take place through a hackathon and the resulting user engagement strategies.

Both cities expect to create awareness among their citizens about innovative and smart approaches to problem solving in the city, and the important role they, as citizens, play in the co-creation of sustainable solutions.

The CAPs thereby complement existing initiatives that support citizen involvement in the utilisation of open data. Both cities plan to integrate data from various open data platforms into the CAP and also enable access to new open data coming from the MONICA project.

2 Introduction

2.1 Purpose, context and scope of this deliverable

A central aim in MONICA is to engage stakeholders in creating sustainable and innovative solutions by making available information and open data coming from the MONICA demonstrations and by offering tools to use this data.

One stakeholder group is the citizens living in the city. Being affected by city events, they play an important part in the design of sustainable solutions that seek a balance between the cultural vibrancy of the city on one hand and the need for peace and quiet on the other. As the city population is continuously growing, the need to find solutions to the environmental challenges is becoming even more urgent.

The purpose of this deliverable is to present the online platforms that MONICA launches to address the citizen issues. The platforms are based on the CAP model: Collective Awareness Platform for Sustainability and Social Innovation. The model is to present factual information about environmental or societal issues and then, based on this informed knowledge, collaborate to find solutions.

The deliverable is part of Work Package 11: *Socio-economic and Business Processes*, Task 11.1: *Citizen Awareness, Engagement and Co-creation* which aims to promote citizen awareness and co-creation on the basis of information gathered through the MONICA IoT platform.

This deliverable presents the two CAPs which are launched in MONICA: An Urban Spaces CAP in Torino, centred around the city's nightlife, Movida, and a Copenhagen platform focusing on the sound levels in the city. In this document, only the CAP concepts are presented since the sites are currently being customised and populated.

2.2 Structure and content of this deliverable

First, the CAP concept is presented before going into detail on the two CAPs in MONICA.

The Copenhagen CAP is presented in Chapter 4, followed by the Torino CAP in Chapter 5.

Open data initiatives which can integrate MONICA results or which are used by the MONICA CAPs are then presented in Chapter 6.

3 Collective Awareness Platform for Sustainability and Social Innovation – CAPS

CAPS stands for Collective Awareness Platform for Sustainability and Social Innovation. It is an initiative launched by the European Commission[1] in 2012 to try out new engagement models that can help solve emerging sustainability problems. The models are based on creating awareness of environmental or societal challenges through an online platform by displaying facts and information. Based on this, the aim is to foster solutions through collective action and social innovation, i.e., creating new ideas together to improve a situation.

CAPS can cover themes from environmental and health concerns to societal and cultural matters. CAPS can be established and facilitated by an organisation with a particular purpose, or it can be a more grass-root, self-governed network of people, ideas, services or technologies.

The CAPS programme has been successful as a tool to steer groups with divergent interests (citizens, decision makers and businesses) towards the same goal. It has yielded several technological outcomes which benefit collaboration and problem-solving in many domains[2] and which are available for replication.

As an example of impact, the SavingFood[3] CAPS has had considerable social and economic impact. It has created a social movement for the redistribution of surplus food to welfare organisations supporting people in need. According to its final report, the project results[4] have reached more than 820,000 individuals with 51 organisations from 23 EU member countries interested in replicating the solution.

The platform typically consists of two layers: an awareness layer and an engagement or co-creation layer, inviting people to interact and/or participate. In some cases, crowd funding and donations are also part of the platforms.

The awareness layer outlines a particular challenge by presenting factual information and data. Based on this, participation is encouraged either through the platform functionality or in separate forums. An example of direct interaction can be found on the hackAir platform: http://www.hackair.eu/, which invites you to directly interact and contribute with air quality measurements through web and smartphone apps. In the Saving Food initiative: https://savingfood.eu/, however, you can enlist as an ambassador and participate in campaigns at a local level.

3.1 The MONICA CAPs

In MONICA, the challenge is to find solutions to the side effects of living in a big city. Two CAPs have been established to address this, one by the City of Copenhagen and the other by the City of Torino.

As presented in the following chapters, the Copenhagen CAP is looking at the environmental impact that sound has on city life, whereas the Torino CAP is presenting the impact of nightlife as part of a hackathon event on urban spaces.

Where the Copenhagen CAP looks at the whole city, the Torino CAP takes as its starting point a specific city district.

In terms of citizen engagement, the Copenhagen CAP is an example of direct interaction involving citizens in the value creation by being collectors of data. The Torino CAP is more focused on the awareness by presenting factual information and data, strongly supporting the co-creation phase that will take place through a hackathon and the resulting user engagement strategies.

The next sections present the two different approaches in more detail.

[1] https://ec.europa.eu/digital-single-market/collective-awareness
[2] For specific technological outcomes, visit the CAPS community: https://capssi.eu/caps-tool/
[3] https://savingfood.eu/
[4] https://savingfood.eu/final-results-of-the-savingfood-project/

4 Copenhagen City CAP

The CAP for Copenhagen City will be released here: https://copenhagen.monica-project.eu. The concept is to create awareness about environmental issues in the city in a new way by mounting sensors on electric city bikes and visualise the results in the CAP.

The primary environmental focus is on the impact of sound/noise, e.g., by investigating correlations between sound and noise data, but other open data areas such as air quality are also considered for more CAP functionalities.

4.1 Background

Copenhagen has been hailed by international magazines[5] as the world's best city to live and work in. However, in current years, the city's population has been growing by about 1000 people a month, increasing pressure on urban services and infrastructure. Although the city is growing fast, people still expect a city that is a good place to live, and not least clean, sustainable and climate-friendly. This means that we need to develop new solutions that can optimise and enhance the operation of the city in order to achieve Copenhagen's ambitious goals. For example, Copenhagen aims to be the first CO_2-neutral capital by 2025 and in general to be one of the world's best cities to live in[6].

Several municipal initiatives exist that aim to inform about the environmental challenges and engage stakeholders to find solutions. One city initiative is the Copenhagen Solutions Lab, which is the City of Copenhagen's incubator for smart city solutions. Another initiative is the Copenhagen Data platform,[7] which offers several data sets to foster innovative smart city solutions.

The CAP is a citizen-oriented platform with the aim to create collective awareness about environmental challenges by gathering and displaying all related data and information. Awareness is created through the display of open data, made available by the city's users and presented in a way that is understandable to a wider, general public. As such, the co-creation of value takes place in collaboration with the city's users as collectors of data.

The CAP also invites people to participate in creating value by pointing to tools that you and I can use to measure ourselves. Currently, project partners are developing an app for rating sound at the MONICA demonstrations which might also be used for the CAP. For those interested in utilising the data, the CAP will also contain links to open data platforms and the MONICA development toolbox. Thus, the CAP encourages co-creation between stakeholders, rather than facilitating a structured co-creation process with a specific aim.

The starting point for the CAP is sound as one of MONICA's main focus areas. However, MONICA is also looking towards adding air quality sensors on the bikes, since air pollution is a well-established city awareness and since project partners have available sensors. The following site description therefore includes the addition of air quality measurements while awaiting a final decision on this.

4.2 Site description

The primary target group for the Copenhagen CAP is people living in and visiting the centre of Copenhagen, so Danish is kept as the main site language. Secondary groups are developers, other Danish cities and the general public. To attract a wider European audience, the site also has an English version.

The platform will invite the reader to explore the data collected and get more knowledge. The front page will display an introduction, followed by a 'Go exploring' section with data available, a 'Get more knowledge' section with knowledge about sound and human perception, air quality and an overview of available tools that measure air and sound. Finally, the last section will explain the CAP background.

[5] Metropolis (2016) and Wallpaper (2016)
[6] https://cphsolutionslab.dk/en/what-we-do
[7] https://data.kk.dk/

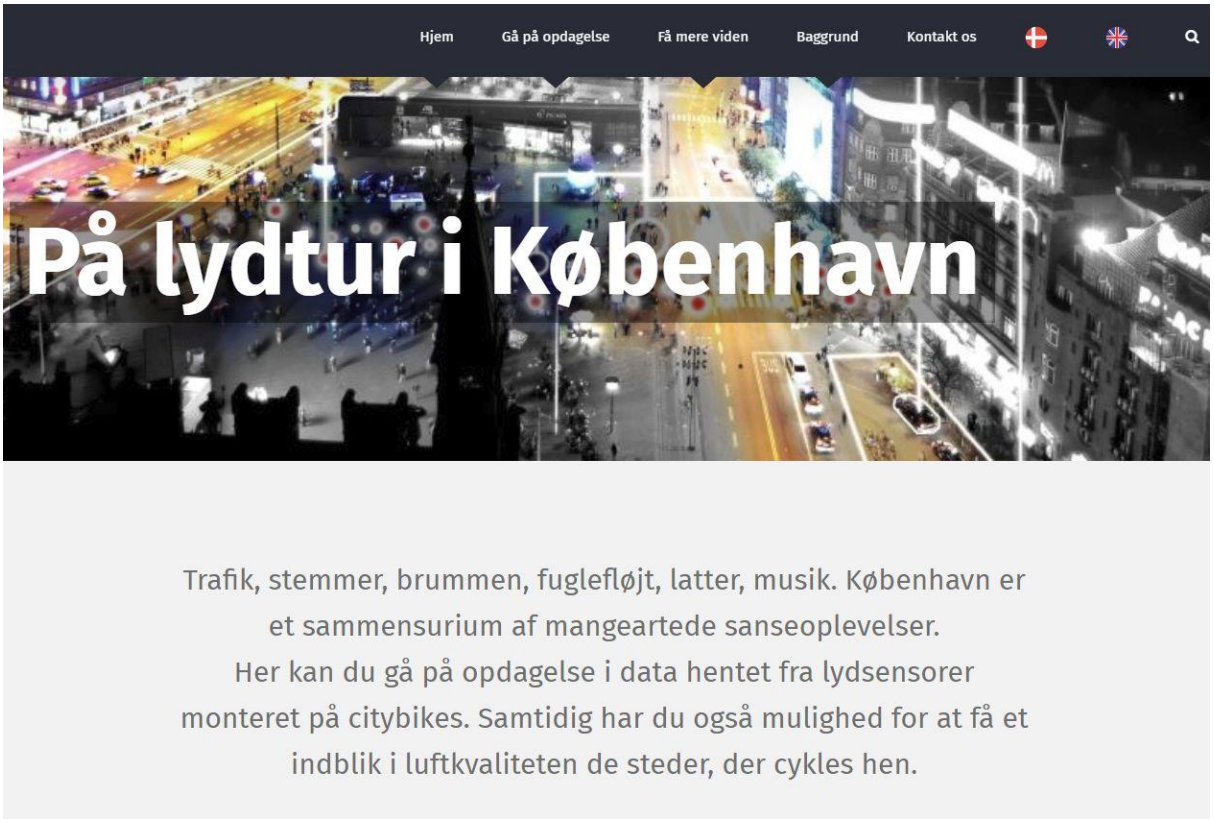

Figure 1: The introductory section of the Copenhagen CAP

The platform is built as a one-page site with a scrolling menu to consolidate all the site's information into one page that is then split into multiple sections. The introductory part of the CAP will explain the concept to the reader, inviting her or him to go on a sound tour. Then, the data are presented. Currently, this includes sound level measurements, pollution measurements and presentation of the cycle team.

Who will be the users of the bikes has not yet been decided. Copenhagen is looking into including volunteering employees from the city's home care service who use electric bikes as transport. This gives a human anchorage to the collection of data, which makes the CAP more appealing to the reader as he or she can better relate to the idea and thus be more interested in doing measurements or engage in initiatives. In terms of impact, this option could also give interesting knowledge about the health and safety of the employees.

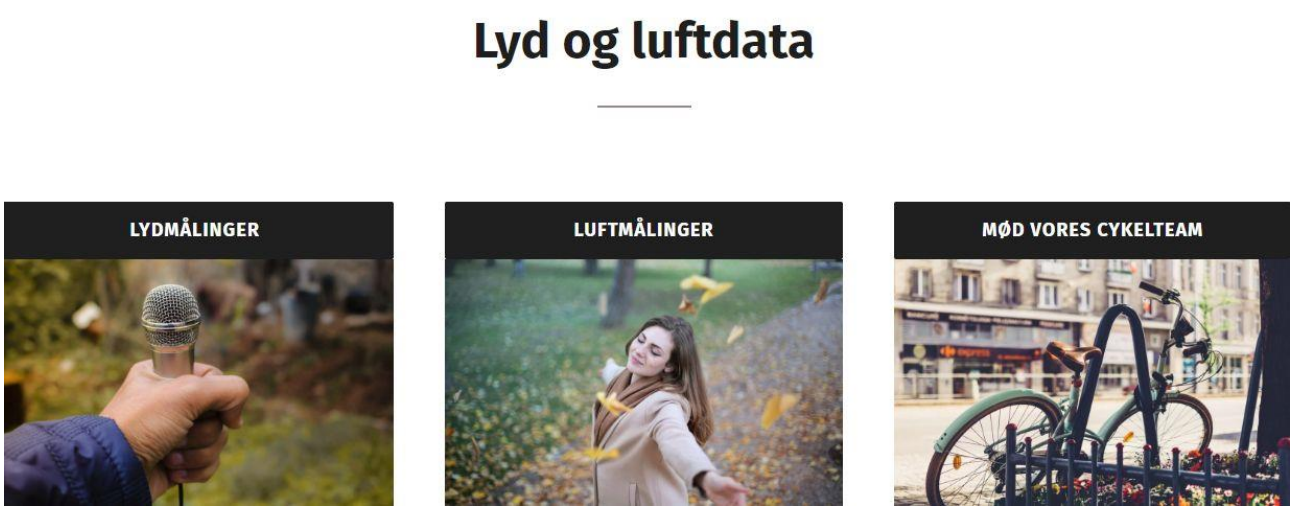

Figure 2: The data section of the CAP: sound measurement, air measurements and presentation of cycle team

Another option is to collaborate with the official bike sharing service Bycyklen[8] with electric bikes made available to commuters and tourists by subscription. Each bike has a integrated tablet, making it the first bicycle hire system where all bookable bikes have an online connection as well as motor assistance. As an IoT device and as a green mobility option to complete the last mile commute and thereby reducing congestion, the bike option fits well with MONICA and the awareness campaign of the CAP as an example of a sustainable solution to a city challenge. As a starting point, the users will be anonymous, but opportunities to engage them as part of their subscription could be investigated if this option is chosen.

Figure 3: Get more knowledge (Få mere viden) section: Sound perception, air quality and invitation to try yourself

In the 'Get more knowledge' section, the plan is to provide information about the environmental areas and the impact it has on us. Information is qualified by partners within the MONICA project as well as experts from the City of Copenhagen's Technical and Environmental Administration.

An invitation to download apps or use measurement tools is also provided, motivating the user to act. The page will also contain links to the MONICA development tool box for those interested in utilising the data. Other available MONICA open data will also be considered for the CAP.

In each of the environmental sections, there will also be information on regulations and initiatives that seek to develop solutions.

4.3 Data capture and display

Data capturing for the Collective Awareness Platform will be based on two sources. Firstly, a mobile sensor gateway will be used to dynamically make measurements in real time on the streets of Copenhagen. The data-capturing platform to be used will consist of a small mobile sensor gateway that can be mounted on a bicycle or other vehicle such as an electric car. The sensor gateway consists of a Raspberry PI, which is equipped with sensors. The mobile gateway is flexible and open, so different types of sensors can be

Figure 4 The mobile sensor gateway for sensing sound levels and air quality parameters

[8] https://bycyklen.dk/en/

attached such as sound sensors or air quality sensors for NO_2, $PM_{2.5}$, PM_{10}[9], etc. (Figure 5). The gateway is equipped with a GPS/Galileo receiver to get the location of the measurements. The gateway will continuously transmit the measurements to the MONICA Cloud for storage, processing and analysis.

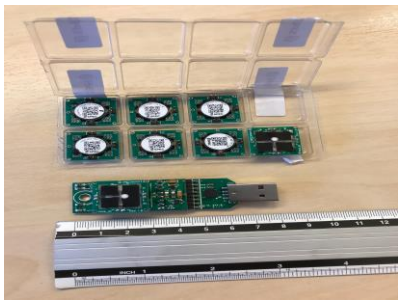

Figure 5 Examples of sensors that can be attached to the mobile sensor gateway

The second data sources that will be used are available, existing Open Data sources provided by the City of Copenhagen (https://data.kk.dk/, kbhkort.kk.dk, http://miljoegis.mim.dk) both for noise and air quality. The main idea is to complement the existing data sources which are based on measurements made in a few places in the city (Figure 6) with the data generated from sensors mounted on bicycles.

Figure 6

Example of a fixed sensor station for air quality

The data captured will be displayed to the citizens in various ways and will use elements from the MONICA Common Operational Picture (COP), which displays various generated data across a mapped area used for displaying location, and data streams from fixed sensors, but also from the dynamically generated measurement points from the bicycle sensors.

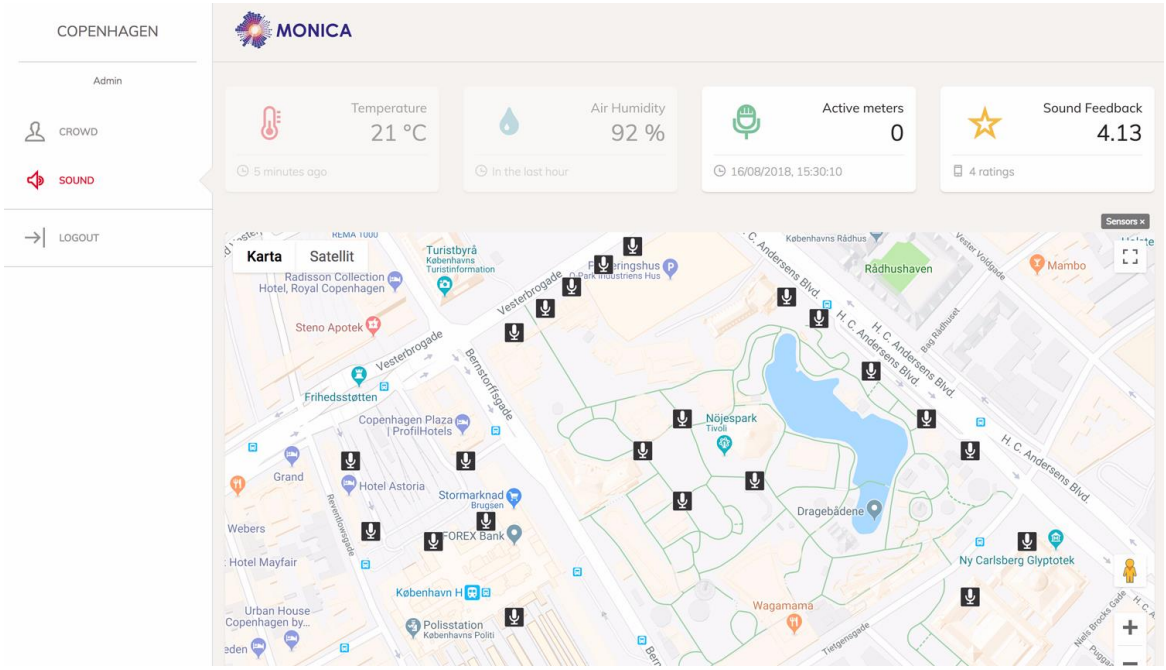

Figure 7 Using the MONICA COP for the display of location and data streams

Furthermore, a smart phone app will be adapted to the Copenhagen Collective Awareness Platform. Also, the data collected will be made available for third-party developers through an open API based on the OGC (Open Geospatial Consortium) standard data format used in MONICA.

[9] Atmospheric particulate matter with diameters less than 2.5 and 10 micrometer, respectively

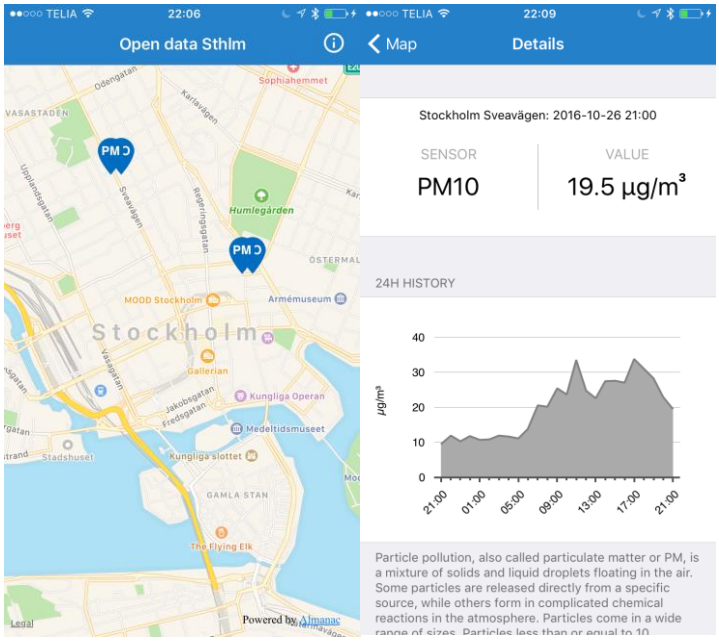

Figure 8 Example of smart phone app for people with asthma, showing air quality measurements in the city

4.4 Expected impact

With the CAP, the City of Copenhagen expects to create awareness among the citizens about MONICA and what new technology can do for the city in general. Copenhagen wishes to show the citizens that the city continuously works for a better city to live in, and that the city tries new methods to keep Copenhagen in the top league of cities to live in. Furthermore, the city expects to make the citizens aware of problems, and thereby also interested in potential solutions. The City hopes to inspire citizens to act.

The purpose of the CAP is to present knowledge in a new way, and thereby gain insight which might be used to identify potential solutions. Thus, it might inspire entrepreneurs to develop new solutions based on the data, it might point to new knowledge benefitting city planning, and it might facilitate new citizen initiatives on improvement.

Even though it takes Copenhagen as its data source, the CAP platform has general applicability for all major cities dealing with a rising population and subsequent environmental challenges.

4.5 Timing

The plan is to launch the Copenhagen CAP in early 2019, enabling it to run for the last year of the MONICA project.

The aim is that the CAP can continue to run after the project end and keep testing new methods of involving and inspiring citizens and entrepreneurs.

5 Torino City CAP

The CAP for Torino City will be available at: https://torino.monica-project.eu. The concept is to create awareness about urban nightlife and its impact, also supporting a hackathon organised by the city. The environmental focus is on noise and security.

5.1 Background

For many years, public administrations have faced the issue of citizen participation and involvement in addressing public problems as an experience of democracy and the formation of civic virtues.

The City of Torino intends to implement a bottom-up approach that opens the way to democracy through direct and binding mechanisms, thus bringing citizens closer to the decisions taken by City administration and allowing them to choose and indicate the priorities on which the Municipality must intervene. The objective is to provide citizens with Open Government and e-Participation tools through which people can actively participate in the decision-making processes of the Administration, have greater transparency on administrative activity and obtain open data on these initiatives. Torino is working on a series of integrated tools: Big data collection, analysis and representation with infographics tools will be the basis for the new information system with which citizens can interface through participatory channels for mobile devices.

The MONICA CAP is one of the tools that Torino wants to make available to all stakeholders involved, enabling them to promote solutions based on networks (people, ideas, sensors) and allowing new forms of digital social innovation.

First and foremost, the CAP works as a repository for factual data and information about the San Salvario district in Torino to be initially exploited by those who take part in the hackathon on urban spaces which is organised by the city in Autumn 2018. However, the platform is publicly available to attract a wider audience, such as the citizens of Torino, local entrepreneurs as well as other Italian and European cities, who are interested in the results of monitoring of actions.

The aim of the hackathon is to foster innovative, digital solutions that can enhance the engagement and experience of event guests, minimising the negative effects of crowds gathering and maximising the joys of nightlife. By providing raw and aggregated data, the output of the CAP is intended to support these solutions for a good balance between amusement, safety and quality of public space in the area.

5.2 Site description

Since the CAP is set in the context of a European hackathon, the site is in English. However, since the starting point is a specific district in Torino, an Italian version is available for neighbours and other local stakeholders to look at. Similarly, to accommodate non-specialised readers, an interactive map of Movida is provided to make sense of the data and give background information.

The platform is built as a one-page site with a scrolling menu to consolidate all the site's information into one page that is then split into multiple sections.

Figure 9: The introductory section of the Torino CAP

The reader is immediately invited to explore the open data coming from the city's own data sources and the ones generated by MONICA installation and demonstrations. The 'Open data' section will contain different boxes depending on the types of data. The boxes 'Noise', 'Crowd' and 'Security' will primarily contain existing historical information and data from the city's portal. The 'Cultural events and commerce' box will also contain already published, public information on businesses in the area and event happenings.

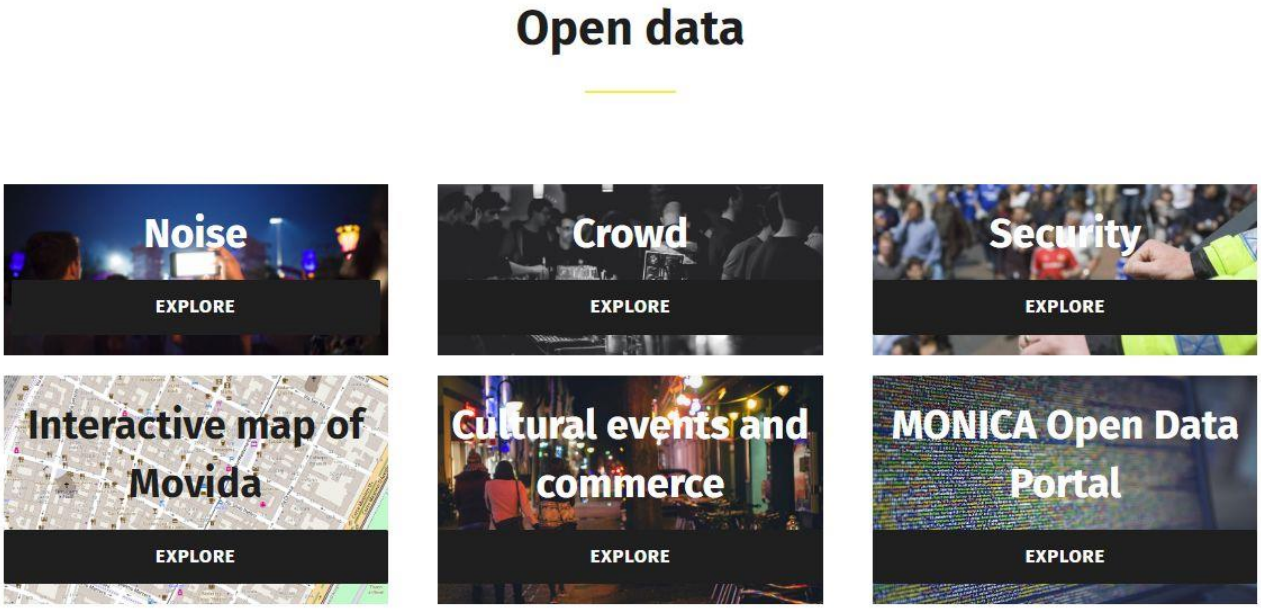

Figure 10: The Open data section of the CAP

To exemplify what the data can be used for, the box 'Interactive Map of Movida' will provide a user interface and display the public data on sound and crowd numbers based on the functionality of the MONICA COP, i.e., heat maps, crowd counting, etc.

Finally, the 'MONICA Open Data Portal' will display real-time or near real-time data on sound and crowd numbers coming from sensors and cameras deployed in the San Salvario District.

The next section provides the context of the hackathon and the challenge, followed by a background section on the role of the MONICA project.

Figure 11: Section on the hackathon context and challenge

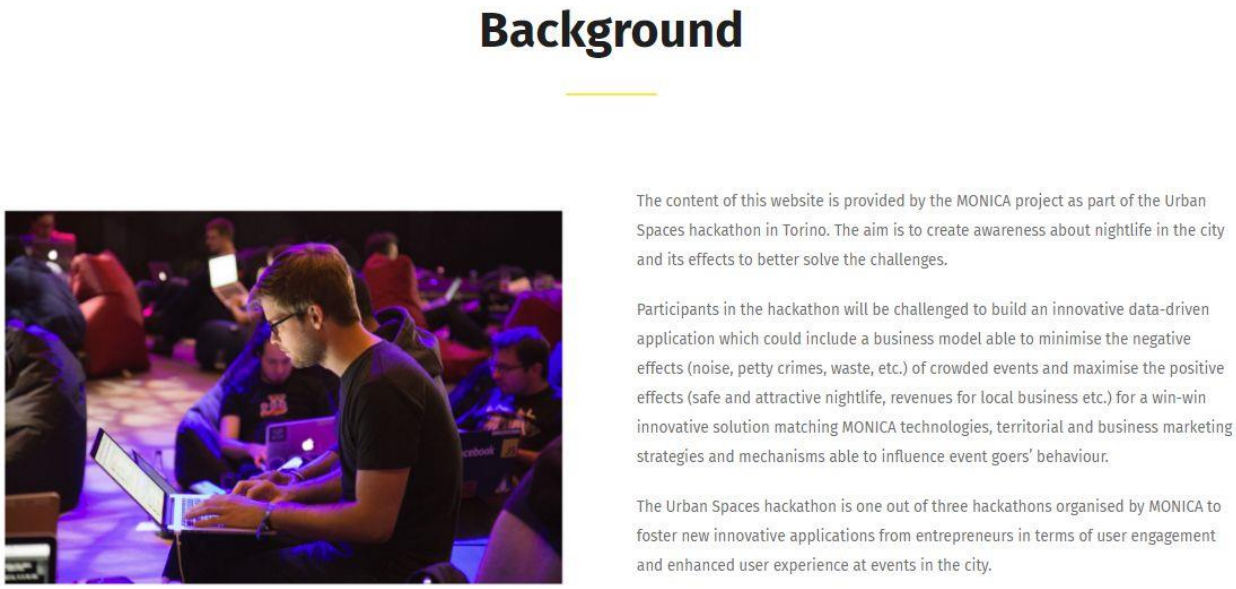

Figure 12: Section on the background for the CAP and hackathon

5.3 Data type and display

Raw data are made available to provide developers with data streams for building new solutions but also presented for general awareness purposes.

The three boxes 'Noise', 'Crowd and 'Security' will contain historical information and open data available from city portals. The same goes for 'Cultural events and commerce' which will provide already published, public data.

The MONICA Open Data Portal box displays real-time or near real-time data on sound and crowd coming from sensors and cameras deployed in the San Salvario District. These include five to six sound sensors and cameras already installed by the city as well as MONICA sensors and cameras deployed for the demonstrations. Only data which are permitted in terms of security and privacy will be shared. The data will be available in standard OGC format.

Additional data coming from other sources, for example traffic, can also be considered for potential add-ons.

5.4 Expected impact

The purpose of the CAP is to present knowledge through a focused data access point on nightlife in a new way that reveals the complexity and increases the awareness of innovative and smart approaches to problem solving, and thereby gain insight to be used to identify potential solutions.

Thus, it might invite entrepreneurs to develop new solutions based on the data, it might point to new knowledge benefitting city planning, and it might facilitate new citizen initiatives on improvement.

The expected MONICA solution for MOVIDA in San Salvario should also be able to offer to the Movida-goers a 360° experience of the district's nightlife, as if they entered a theme park with presentation and reviews of local businesses, cultural programmes, special offers, interaction with IoT and wearables, reward or loyalty programmes, payments, access to information provided by the city administration, amongst other ideas.

The challenge is to build an application, utility or service, starting from historical information and the data provided by the MONICA open data platform.

The city will use the results from the hackathon to develop a local business model for the overall management of a city's open space affected by the phenomena known as Movida or other "spontaneous" crowd gathering for leisure purposes.

The winning idea from the hackathon can also be transferred to other areas of the city and to other EU cities with similar challenges.

5.5 Timing

The CAP is launched in time for the Torino MONICA demonstration events scheduled in Autumn 2018 and the hackathon. Once the hackathon is completed, the results will be available in the CAP throughout the project lifetime.

The CAP will be linked to and promoted through the City website. A deeper integration and long-term maintenance strategy are under evaluation, considering homogeneity of tools, platform and administration standards requested by the IT Department for all official webpages.

6 Open data initiatives

The CAPs complement existing initiatives that use open data for citizen engagement. The following list contains project partner open data initiatives which can integrate MONICA results or which are used by the MONICA CAPs.

6.1 Copenhagen Data

In 2013, the City of Copenhagen launched the open data portal, http://data.kk.dk/ which is a central element in the overall Smart City agenda in Copenhagen.

The portal is based on the open source software CKAN from the Open Knowledge Foundation and the municipality continuously contributes to the development of the software with bug fixes and extensions.

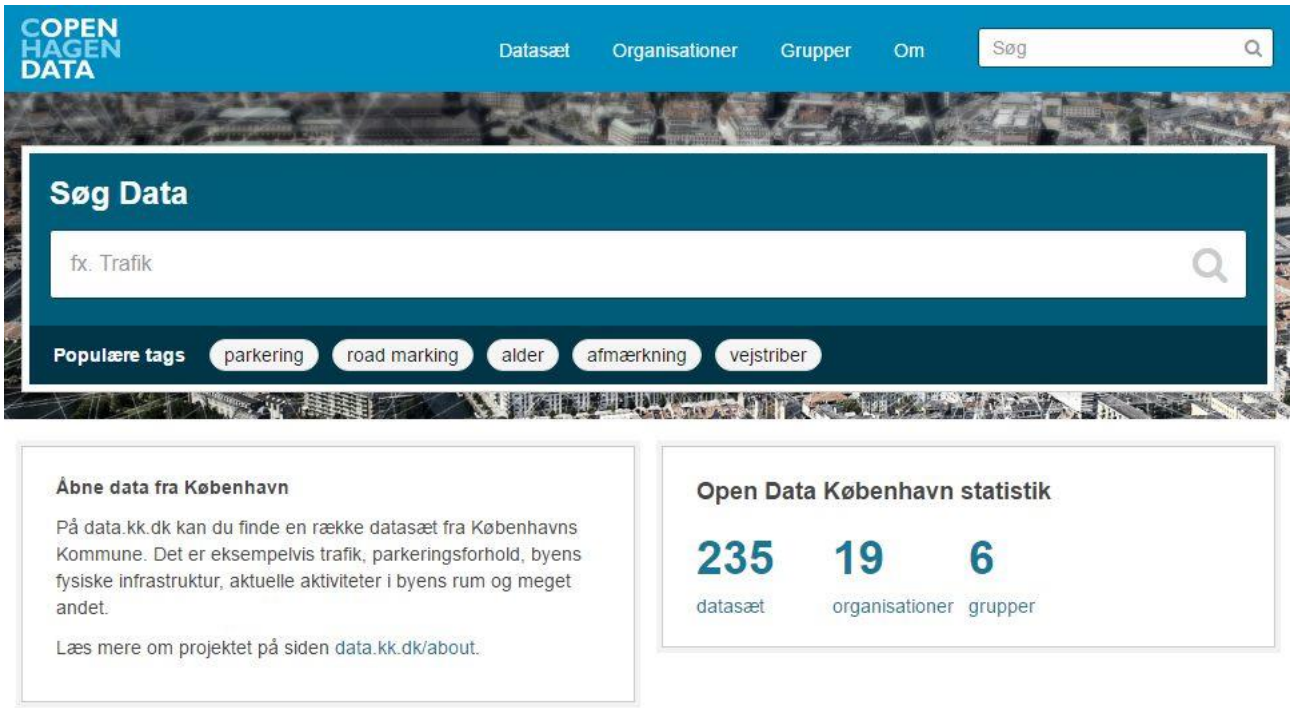

Figure 13: Copenhagen Open Data Portal

245 datasets are divided into six categories: children and youth, city budget, geodata of Copenhagen, statistics, beneficiaries, transport and infrastructure. For the CAP, data on air pollution are available.

So far, 20 organisations are in charge of creating, editing and publishing, among them the Department of Environmental Sciences of Aarhus University and several departments from the City of Copenhagen.

The portal also links to a number of other activities in the region, including the Copenhagen Cleantech Cluster Innovation Platform for Smart City Digital Infrastructure. This contribution shall foster the integration of public and private data, so data sets from many stakeholders can be linked together to develop new and innovative solutions for the city.

6.1.1 Other Copenhagen portals

For the CAP, the following data sources are also considered:

The site: http://kbhkort.kk.dk provides an interactive map of the City of Copenhagen with geographical and environmental information about the city. For the CAP, data on traffic noise are available.

The Ministry of Environment and Food of Denmark provides an environmental map of Denmark where it is possible to view silent areas: http://miljoegis.mim.dk/spatialmap?&profile=noise.

6.2 Torino Open Data Portal

The City of Torino shares its data to improve the cooperation and participation with citizens through http://aperto.comune.torino.it/, the City's Open Data Portal.

It allows all users, entities or public and private organisations to use the data according to the IODL open licence and in compliance with the law.

The IODL 2.0 licence stands for "Italian Open Data Licence ". It has been issued by Formez PA, the service centre for the modernization of the Public Administration, and it regulates both the intellectual property rights on the published data, and the use that can be made of them in compliance with the current Italian laws.

The IODL 2.0 licence allows performing various operations on the data, such as:

- reproducing
- distributing
- presenting to the public
- including in documents
- using them for commercial purposes
- combining them with other data or information.

This is on the condition that the user indicates its source and property and does not reuse the information in a way that suggests that it is the official source.

There are currently almost 300 datasets, divided in several categories such as statistics and demography, viability, public security, health and public administration.

In the Aperto Portal the user can:

- download data, related metadata and explanatory descriptions
- comment and indicate links to other resources in Internet that can integrate, improve or better describe the published data
- download the Apps, when they become available in a dedicated section of the Portal.

6.2.1 Other Torino portals

For the CAP, the City of Torino also considers other local and regional portals, which include:

- http://geoportale.comune.torino.it/web/, the portal of the City of Torino with the territorial data of the city. There are maps, cartography information, urban data, information from the land registry, information for citizens and tourists such as the location of museums, theatres, libraries, schools, hospitals, etc. All the contents of this portal are open to citizens and professionals
- http://www.dati.piemonte.it/, the portal of Piedmont Region with Torino as the main city, providing open data and statistics related to the territory: environment, private sector, tourism, land registry and more
- http://www.5t.torino.it/open-data/, providing traffic news and information in Torino: path planning, real time traffic congestion and parking
- https://www.arpa.piemonte.it/rischinaturali/accesso-ai-dati/opendata/opendata.html, the regional agency for environmental protection (Arpa). Its website provides meteorological data of the last decade for the whole territory, water quality, asbestos mapping, geological data and more.

6.3 Greater Lyon Data Platform

The Greater Lyon Data Platform https://data.grandlyon.com/, based entirely on free software, is a tool at the service of the Lyon Metropolis and municipalities' partners. It enables them to have reliable information in order to design, implement and evaluate their actions on the territory.

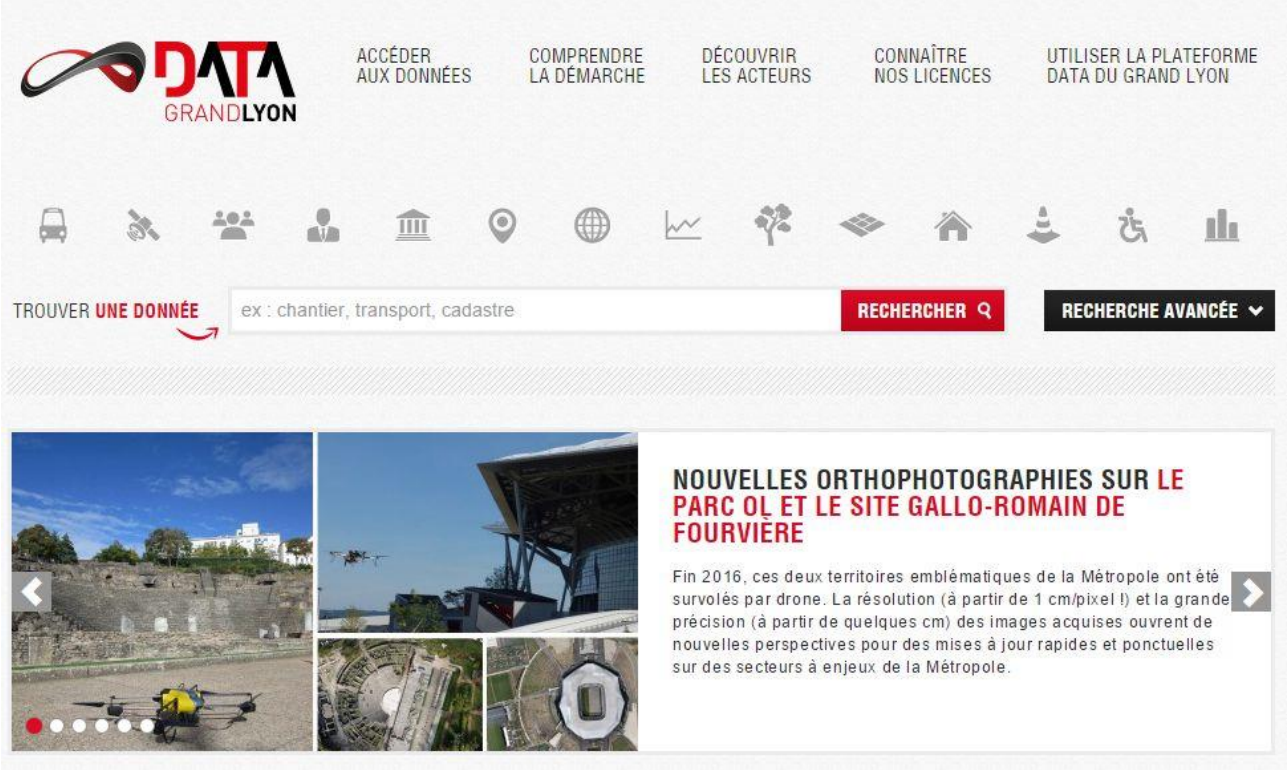

Figure 14: Open Data Lyon Portal

It contains data related to 14 categories, such as transportation, citizenship, culture, environment and services, related to the metropolitan area of Lyon. The aim is to improve the daily living environment and promote citizen participation.

Depending on the data, there are three types of licences:

- an open licence which guarantees free and open data, allowing the reproduction, redistribution, adaptation and commercial exploitation of data. This open licence covers 99% of the data in the platform
- a committed licence with data available with prior authentication from the user. The objective is to guarantee that the use of these data is compatible with public policies and with the general interest;
- an associated licence with the provision of data with authentication and the possibility of a fee to guarantee a fair competitive ecosystem, ensuring equal access to the market regardless of the economic player. In this case, the pricing of high value-added data (especially real-time data) is conceived as an instrument of support for innovation for structures and projects. The fee system is built to allow private actors to build innovative services with no initial cost linked to the data (no fixed costs to avoid any barrier) while avoiding monopolistic situations that are detrimental to the territorial dynamic.

MONICA project partners Acoucité disseminate their sound data through the platform.

6.4 Transparenzportal, Hamburg

In 2012 the Hamburg Transparency Act (HmbTG) was adopted by the Bürgerschaft. The purpose of this Act is to make administrative information directly accessible to the general public, while protecting the privacy of personal data and promoting the participation of citizens.

To allow an anonymous and direct access to the published documents and data, the Transparency Portal Hamburg http://transparenz.hamburg.de/ (in German Transparenzportal) was developed in October 2014. From the beginning of 2015, the supervision of the Transparency Portal has been the responsibility of the Hamburg State Archive.

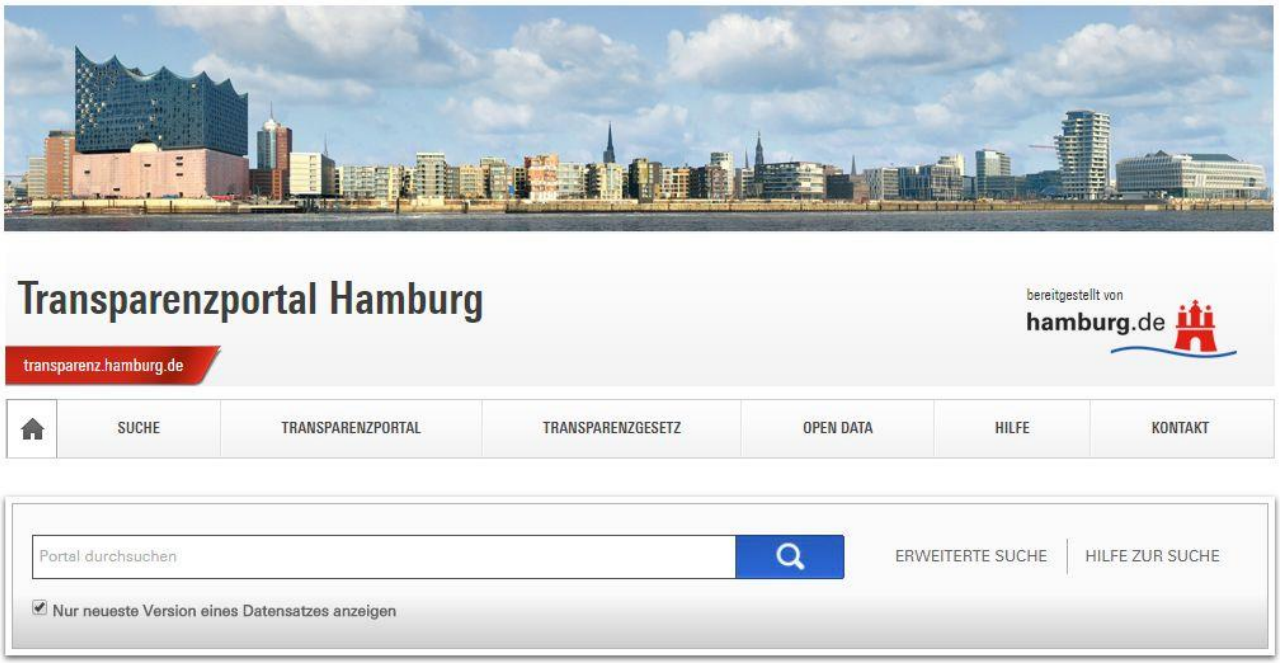

Figure 15: Open Data Portal Hamburg

Hamburg Transparency Portal is an Open Data Portal with up-to-date data and information provided by district offices, special authorities and by public companies (i.e., HafenCity Hamburg GmbH and Elbe-Werkstätten).

The published documents include, among others, Senate communications, official statistics, expert reports and studies, construction and landscape plans and contracts.

The plan is to integrate MONICA results into the transparency portal, which is also available in the EU Open Data Portal, introduced briefly in the next section.

6.5 European Open Data Portal

The European Open Data Portal (https://www.europeandataportal.eu/en), online since February 2016, collects the metadata of the Public Sector available in web portals or catalogues of the European countries. Portals can be national, regional, local or domain specific. They cover the EU Member States, EFTA countries and countries involved in the EU's neighbourhood policy.

For each catalogue, all datasets and their corresponding distributions are checked on a weekly basis. The current quality analysis is based on three criteria: the accessibility of distributions, their machine readability and their compliance to the specification for describing public sector datasets in Europe, DCAT-AP.

In the Portal there are sections dedicated to:

- searching data sets: since there are over half a million metadata sets on the portal, categories have been established to easily browse these data sets. Among these, Energy, Environment, International issues, Education, Culture and Sport, Health, Economy and Finance
- providing data with guidelines on how to start publishing Open Data and on how to be harvested by the European Data Portal
- using Data: how Open Data is being used
- training and Library with thirteen eLearning modules, news and readings.

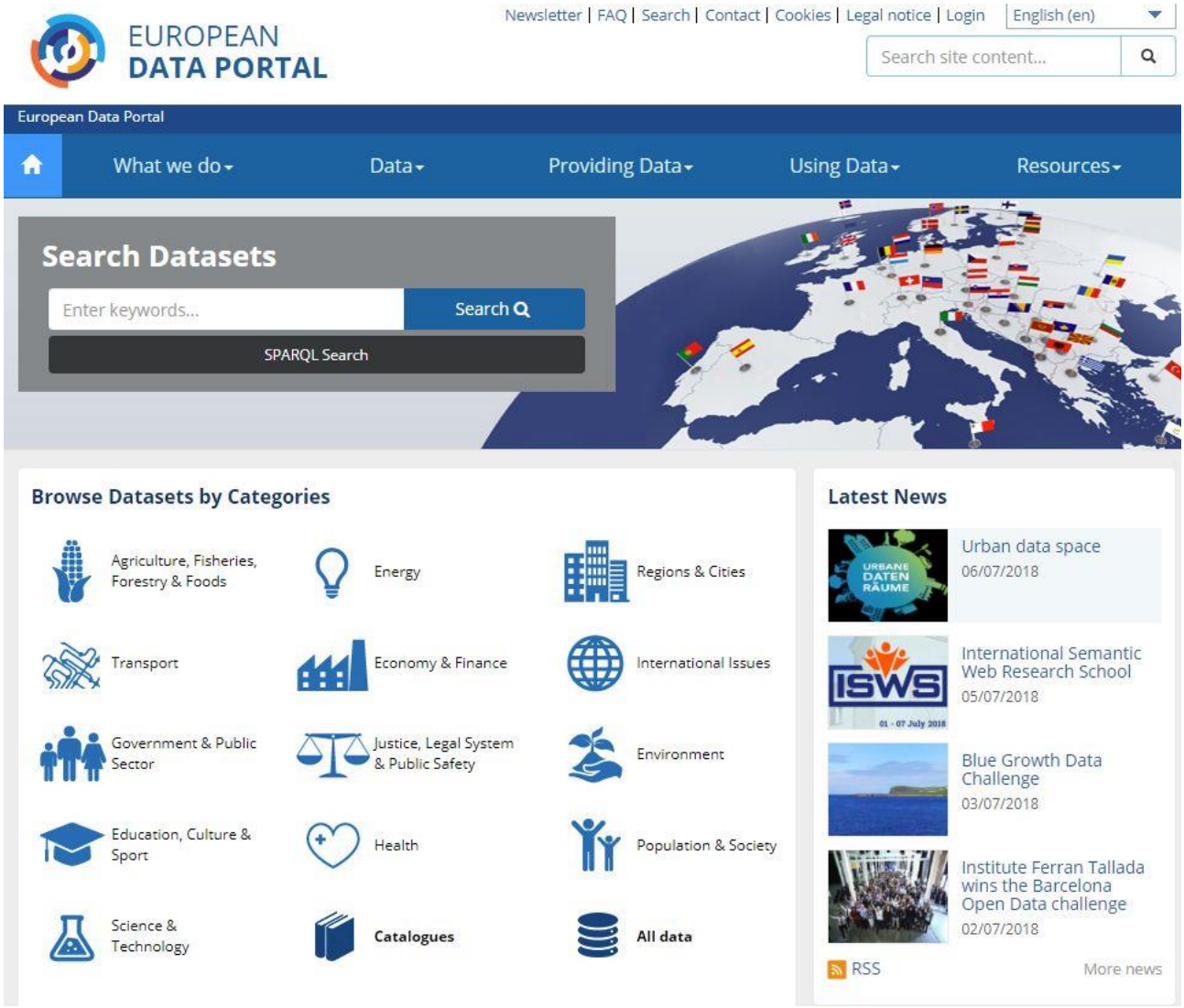

Figure 16: European Open Data Portal

The benefits of sharing these Open Data range from improved efficiency of public services, economic growth to social welfare, enhancing collaboration, participation and innovation.

7 Conclusion

Whereas the act of making open data accessible signals a governmental openness towards the public and an invitation to co-create, some will argue that the practical value is limited to those who know how to utilise the data, unless further actions are taken to show how the data can be used and facilitate engagement.

The CAPs in MONICA attempt to make data meaningful by presenting them in a context that is relevant to many citizens, engaging them in the creation of value (collecting data on bikes) and in developing new solutions to city challenges (participating in hackathons).

This deliverable presents the concepts of the two CAPs deployed in MONICA. Both are subject to change as decisions are made, data and information become available and pages are populated. Readers are advised to instead check the sites for a more precise, up-to-date depiction.

As part of the impact assessment activities, MONICA will monitor the number of visits to the CAPs and of people engaging in CAP co-creation activities (bike users, hackathon participants). A more qualitative analysis of the CAP results will also be performed in terms of new solutions, strategies and initiatives. This analysis will be made available in *D9.2 Final Assessment Report* due at the end of the project.

8 List of Figures

8.1 Figures

Figure 1: The introductory section of the Copenhagen CAP 8
Figure 2: The data section of the CAP: sound measurement, air measurements and presentation of cycle team 8
Figure 3: Get more knowledge (Få mere viden) section: Sound perception, air quality and invitation to try yourself 9
Figure 4 The mobile sensor gateway for sensing sound levels and air quality parameters 9
Figure 5 Examples of sensors that can be attached to the mobile sensor gateway 10
Figure 6 10
Figure 7 Using the MONICA COP for the display of location and data streams 10
Figure 8 Example of smart phone app for people with asthma, showing air quality measurements in the city 11
Figure 9: The introductory section of the Torino CAP 13
Figure 10: The Open data section of the CAP 13
Figure 11: Section on the hackathon context and challenge 14
Figure 12: Section on the background for the CAP and hackathon 14
Figure 13: Copenhagen Open Data Portal 16
Figure 14: Open Data Lyon Portal 18
Figure 15: Open Data Portal Hamburg 19
Figure 16: European Open Data Portal 20