

GREEN DIGITAL CHARTER



COLLECTION OF CASE STUDIES 2016

European smart cities using ICT





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ABOUT THE GREEN DIGITAL CHARTER

The Green Digital Charter aims to improve the quality of life in cities through the use of digital solutions. Launched in 2009 by EURO CITIES, it is a strategic initiative supported by the GuiDanCe project in its current phase. In addition to a range of statements and objectives, the charter sets out four specific commitments.

Signatory cities agree to:

- work with other Green Digital Charter signatories to promote the best application and results of ICT solutions
- establish local partnerships to implement the Green Digital Charter's commitments, and to make these central elements of the cities' wider strategies
- deploy five large-scale and replicable ICT pilots per city within five years and communicate the impact of these to citizens and local stakeholders
- decrease the direct carbon footprint of the ICT sector by 30% per city within ten years

Already signed by 51 major European cities, the charter is open to local authorities regardless of the stage of implementation of their energy and climate policies. For more information on the Green Digital Charter, please visit www.greendigitalcharter.eu

ABOUT GUIDANCE

Funded by the European Commission's Horizon 2020 research and innovation programme, GuiDanCe aims to support the coordination and further development of the Green Digital Charter.

GuiDanCe aims in particular to:

- strengthen the engagement of GDC signatories to create a club of cities that work together towards their GDC commitments
- improve existing tools and services and their impact on GDC signatories
- promote GDC signatories' activities within and outside the EU

PURPOSE OF THE CATALOGUE AND HOW TO USE IT

This catalogue includes case studies and projects at the inception phase prepared by the GDC signatories within the framework of their ICT for energy efficiency-related commitments. 'Case studies' are implemented actions associated with green digital development, while 'projects' include planned actions in key policy domains.

The studies are presented in the following categories:

- **Cross-domain.** Green digital activities that cut across two or more application areas
- **Buildings.** These green digital activities encompass measures taken in municipal buildings and facilities, tertiary (non-municipal) buildings and facilities as well as residential buildings
- **Energy.** Green digital activities in energy include measures relating to energy and electricity production and distribution
- **Transport.** Green digital activities in transportation encompass soft (non-motorised) modes, public and motorised private transportation, mobility management, and logistics and freight
- **E-participation.** Green digital activities supporting citizen engagement by making city decisions accessible in open data format and by developing tools for mapping locations of environmental or social value

Each city profile includes relevant web links and contact information to help you plan and organise your own study tour.

DISCLAIMER

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. The European Commission is not responsible for any use that may be made of the information contained herein.

The image features a dark teal background with a complex, low-poly geometric pattern of white lines. The pattern consists of various sized triangles and polygons that create a mesh-like effect. In the center-right portion of the image, the text "CROSS-DOMAIN" is written in a clean, white, sans-serif font. The text is all-caps and has a slight shadow or drop effect, making it stand out against the busy background.

CROSS-DOMAIN

OPEN DATA - SMART NEIGHBOURHOODS (ODSN)

ODSN, commissioned by the Dutch Ministry of Infrastructure and Environment, worked with five municipalities on advancing their open data strategies and adopting novel digital infrastructure to facilitate the implementation of local climate policy. The project implements the FP7-funded IREEN roadmap* in Dutch cities, and leverages Amsterdam's expertise and experience in open data management.

Haarlem: defining specifications for a data-driven participatory model for residents to support grassroots initiatives. This led to the joint specification of an open data support system for energy retrofits of households.

Tilburg: identifying ways for the city to create links between its sustainability reports, its information department, and its citizens' initiatives (in partnership with Energy Cooperation Udenhout, ECU), the local citizen-driven initiative for realising energy neutral neighbourhoods in Udenhout.

Zaanstad: exploring conditions for local energy markets to empower citizens to demand an increase in renewable energy production.

Lelystad Airport Business Park: proving that the use of data can help avoid congestions during the construction and operation of the new logistics business park. This has become a positive business case to prove the value of sensor systems and analytics tools.

Heerlen: energy monitoring at the Smart Services Campus has led to the development of a smart app to be used by residents participating in a solar energy project.



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* www.bit.ly/2gYzHuK
www.bit.ly/2gjQ5pV

REPLICATE: BRISTOL PILOT

Bristol is a lead city in REPLICATE, a Horizon 2020 smart city 'lighthouse' project. The city will deploy a number of integrated energy, mobility, and ICT solutions in one of its districts to help tackle inequalities, such as fuel poverty, and to progress towards decarbonising the energy and transport sectors. Citizens will be at the centre of Bristol's approach.

The core innovation in Bristol is the development of an energy demand management system that can holistically monitor and control energy use in order to level out peak demand. The system will be piloted through 150 'connected homes', which will have the opportunity to trial connected or 'smart' appliances.

A number of other projects and measures aim to link into this system, including:

- energy efficient retrofitting of 240 homes
- development of local renewable energy resources (district heating, community solar PV)
- electric vehicles and charging infrastructure
- travel planning and parking apps
- development of a smart city platform

Through these interventions, the Bristol pilot intends to:

- reduce the cost and amount of energy consumed to tackle fuel poverty
- use more energy from local renewable sources to increase local resilience
- enable greater sustainable mobility
- encourage citizens to change their energy consumption and travel patterns
- contribute to a significant reduction in CO₂ emissions



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DUBLIN CITY NOISE

Dublin City Noise is the place to go for information and updates about environmental noise exposure and sound level measurements in Dublin city.

On the website it is possible to:

- view live readings from sound level monitors
- see how sound level trends have changed over time
- compare locations to map sound level readings
- find out more about how noise pollution is managed in the region

There is also an API interface for developers.

Why manage noise pollution in Dublin? To minimise the effect that noise pollution has on people as they go about their daily lives. To do this, we consider the source of sounds and the number of people likely to be affected. The biggest sources of environmental noise pollution in Dublin are traffic (road, rail, and air) and major industrial activities.

“The Dublin Sound Monitoring Network helps us manage the effect of noise pollution on daily life and the Dublin City Noise website lets people check environmental noise levels in their own neighbourhoods,” says Brian McManus, head of traffic noise and air quality at Dublin City Council.



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DUBLIN, IRELAND

CROSS-DOMAIN

LEXICON, THE SMART LIBRARY

The Lexlcon, located in Dun Laoghaire Rathdown County Council, is home to library services and the Municipal Gallery. It hosts exhibitions, events, and education programmes with a strong focus on digital literacy and stimulating interest in technology.

Dr. Jake Rowan Byrne, creative technology curator since 2015, has devised a programme for the Lexlcon LAB to provide experimental learning for the community in a public library environment. His vision is to create a space where people can work together to identify local challenges and find creative and innovative solutions while having fun and learning.

The building itself is a smart building. Sensors monitor footfalls, movements and CO₂ levels in order to adjust and predict lighting, temperature, and oxygen needs. Light levels adapt in relation to daylight, and windows open or close automatically to regulate air quality. Nine wind cowls provide ventilation in every room with no energy costs. The majority of the heating systems use renewable energy, such as a wood burning biomass boiler.

Everything the building consumes is generally metered, from gas to electricity to water flows. All the meters create data that is fed back into the building management system, providing statistical knowledge on energy consumption over time.



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THE POWER TO CHANGE

The City of Edinburgh Council, in cooperation with the Edinburgh Community Solar Co-operative, has installed solar panels on 24 council properties. This is the UK's largest community-owned urban solar farm. Under the city's sustainable energy action plan (SEAP), an advanced building energy management system will be installed in six schools, creating a smart and intelligent approach to reducing/controlling peak-time energy demand.

Edinburgh is a leader in developing and using open data in Scotland, pioneering an approach to support the council's vision for the city. Edinburgh was the first Scottish council to adopt an open data strategy, and it also created the UK's first civic challenge programme using open data, EdinburghApps, providing solutions to city and council challenges.

Edinburgh Living Lab (ELL) is a joint initiative by the council and the University of Edinburgh. Data is used to inform design, measure impact/outcomes, trigger behaviour change, and build evidence-based input towards the objectives. ELL uses participative and innovative techniques to analyse projects, and learn about the city and its citizens. The Active Travel project uses cycle counter data to inform the strategic development of cycleways. Its aim is to encourage participation and reduce congestion.

Drawing on the SEAP, ELL has helped produce a feasibility study, which will inform future decision making on taxi charging point locations using telematic data.



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LOW-EMISSION ECONOMY PLAN FOR 2015-2020

The main goal of the project has been to develop a low-emission economy plan that would enable the city of Gdynia to track the progress of the implementation of its strategy for reducing greenhouse gas emissions and its transition to a low-carbon economy. The document specifies the objectives to be achieved by the end of 2020.

In order to evaluate its energy economy, the city has set up a database, which contains information on energy consumption and CO₂ emissions in different sectors (transport, public administration, etc.). The base year is 1999. Data was collected in 2011 and 2014, and further updates are planned, pending data availability. The database allows for analyses across years and economic sectors, and includes graph visualisation tools.

The database enables the city to continually monitor its progress towards a low-carbon economy. The results of the data analyses will help Gdynia adapt its plans to the challenges that climate change and its impacts pose.

The database is publicly accessible on the internet.



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BUILDING ENERGY DECISION SUPPORT SYSTEMS FOR SMART CITIES (BESOS)

BESOS is a research and development project funded by the EU's 7th Framework Programme. It develops an advanced, integrated management system, which enables energy efficiency in smart cities from a holistic perspective.

The project targets two main groups of stakeholders: infrastructure owners (e.g. municipalities) and operators (e.g. energy service companies, ESCOs, or facility managers, FMs). The former use a business balanced scorecard to audit the service-level agreements concluded with ESCOs and FMs based on a number of key performance indicators (KPIs). The latter use the same tool to analyse new business models, as well as a decision support system (DSS) cockpit to monitor and control information and draft coordinated energy efficiency strategies. Lisbon and Barcelona have already tested the BESOS approach.

The project has been coordinated by ETRA Investigación y Desarrollo, S.A. (ETRA I+D).



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NAPLES, ITALY

CROSS-DOMAIN

POTESS MUNICIPAL SERVICES WEB PORTAL

This IT solution enables the key stakeholders in the metropolitan city of Naples (public administration and enterprises) to cooperate using a single, simple, and interactive framework.

The project covers the:

- modelling of administrative IT-related procedures to help design and implement the planned services
- dematerialisation of procedures and documents
- online pooling of all municipal services
- system's integration with national platforms (SPID, PagoPA, etc.)
- creation of a single institutional open data portal for the entire metropolitan city

Budget: €2,900,000

This tool will be integrated with the city's other platforms (welfare, environment, and building planning), and will enable the integrated management of public housing, cultural heritage-related and public works planning.

The project will be completed by 2018. Launch is scheduled for 2019.

In its capacity as project leader, Naples is the mediating authority managing the related national operational programme (PON).



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ONLINE TAX OFFICE

This IT solution will simplify the tax system in metropolitan Naples.

It will:

- provide an integrated tax management system
- curb tax evasion
- improve tax planning
- help create a more equitable, sustainable, and transparent tax policy
- enable citizens and enterprises to monitor their payments and tax files

Budget: €700,000

The system will be launched in 2021.

In its capacity as project leader, Naples is the mediating authority managing the related national operational programme (PON).



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NAPLES, ITALY

CROSS-DOMAIN

NACULTURE MULTICHANNEL TOURISM PLATFORM

This project aims to upgrade the city's tourism portal by adding an app that will help tourists discover interesting places and events along their route.

The app will enable tourists to plan their own trips from their current position, and adding a chat option is also being considered. The app may also offer curated museum guides, a hotel booking service (in cooperation with the city's hospitality companies), and other practical information. Another app called 'accessible city' will provide services to citizens with special needs (mobility, accommodation, etc.).

The portal will offer information in seven languages.

Budget: €1,000,000 (€550,000 to be financed by the national operational programme).

The platform will be completed by 2018. It will cover all the cities in the metropolitan area by 2021. In its capacity as project leader, Naples is the mediating authority managing the related national operational programme (PON).

The logo for 'naculture' features the word 'na' in a lowercase, sans-serif font, followed by 'culture' in a bold, lowercase, sans-serif font. The 'c' in 'culture' is stylized with a white outline.

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TURIN LIVING LAB

Turin launched its first territorial 'living lab' in January 2016 to create a framework for supporting urban innovation and enabling businesses to develop and test innovative digital solutions in a real life context.

Living Lab Campidoglio has already tested 32 digital or ICT enabled solutions. These include: IoT networks to test innovative climate, cultural, and mobility services; a new concept of networked smart square; digital platforms providing climate/mobility information to both decision makers and final users; multi-factor environmental sensors; co-designed apps to improve urban mobility; air quality sensors on bikes; and a community hackaton to develop digital services for the district. Turin has also just closed another public call aimed at establishing a horizontal service-level living lab to test mobile payment solutions. The aim here is to co-design such solutions with the involvement of public officials and a sample group of users.



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VALENCIA, SPAIN

CROSS-DOMAIN

INTEGRATED PLATFORM FOR ELECTRONIC ADMINISTRATION (PIAE)

Valencia City Council unveiled PIAE on 15 September 2014, with the aim of contributing to the strategic goal of streamlining and simplifying the city's administrative processes. This platform enables Valencia to electronically process records throughout their entire life cycle. Citizens have free, full, and open access to their data.

Through PIAE, Valencia has managed to fully digitalise its municipal administration. Electronic document management enables interoperability and allows for the electronic identification of citizens.

- Savings of up to €60,000 per year on paper cost
- More than two million electronic documents processed each year (83% of all documents)
- 15-20% reduction in processing time
- According to the Spanish Federation of Municipalities and Provinces (FEMP), simplification and reduction of administrative burdens have saved about €170 million for citizens during the first year of operation



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SMART GREEN INNOVATIVE URBAN LOGISTICS FOR ENERGY EFFICIENT MEDITERRANEAN CITIES (SMILE)

The SMILE project, co-financed by the EU's MED Programme, enables Mediterranean cities such as Valencia, Piraeus, Montpellier, Bologna, Barcelona, and Rijeka to assess, implement and monitor efficient and sustainable solutions in the field of urban logistics. The project owes its success not so much to the use of solutions based on cutting edge technology, but to the combination of new approaches to governance and supportive public policies; innovative marketing campaigns; ICT tools focused on urban logistics; and effective low-cost infrastructure. The participating cities have become more aware of the potential of urban logistics in helping them achieve their sustainability objectives, and they could also test in real life scenarios different solutions that produce good results with an outstanding environmental, social, and economic impact. For example, in Valencia's historic centre, the electric bike delivery service has proved to be cleaner, faster, and more reliable than the traditional delivery systems. SMILE has definitely facilitated the recognition of urban logistics as a key element of sustainable urban development.



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VALENCIA SMART CITY PLATFORM

The VLCi Platform enables the city to efficiently manage its public services through the use of indicators. It facilitates the interoperability of municipal services, and offers an integrated overview of the city's operations and management. By using the indicators, the municipality can also provide better service to its citizens. The system shows the pulse of the city and keeps track of its resources. The indicators also enable Valencia to check itself against other cities and to improve its strategic and operational decision making processes over time.

ISO 37120



WORLD COUNCIL
ON CITY DATA

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ZAGREB ENERGY WEEK

Over the past seven years, Zagreb Energy Week has become one of the city's flagship events in the month of May. Under the slogan 'Development we don't want to stop but pollution we can', the organisers call for joint actions that contribute to the implementation of sustainable urban development projects and the preservation of natural resources for future generations.

Financed by the city budget, Zagreb Energy Week is jam-packed with conferences, expert meetings, open door days, seminars, classes and workshops, all of which are dedicated to energy and the environment. These activities allow for rich and effective interaction among the experts in the field, and acquaint the citizens with the subject.

The main goals of Zagreb Energy Week are to raise the environmental awareness of citizens and stakeholders, to emphasise the need to protect the climate and the environment, and to use energy and natural resources in a rational manner. This event brings together a broad range of stakeholders in an effort to highlight the problems we all face, and to identify solutions that may ensure a secure and better future.



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ZARAGOZA, SPAIN

CROSS-DOMAIN

ZARAGOZA CITIZEN CARD

The Zaragoza Citizen Card offers convenient access to municipal services, including payment processing services. To date, over 230,000 citizens (more than half of Zaragoza's adult population) have applied for such a card. This multi-purpose smart card aims to:

- facilitate and encourage citizens' access to public services with a single document
- put a viable mechanism in place for adjusting fees paid for public services to different card user profiles
- reinforce the sense of community. Currently, the holders of this Citizen Card can access and pay for 20 public services. They can choose between prepaid and postpaid plans.

Moreover, the system generates 'big data', whose exploitation helps the city nurture new businesses and improve its urban public services.



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BUILDINGS

LIGHT2CAT

Light2CAT is a successful R&D project co-financed by the EU's FP7 programme that has opened up a whole new domain in the use of photocatalytic construction materials for urban air purification purposes. The innovative technology developed by the project aimed at producing and testing cementitious structures incorporating photocatalytic semiconductors that can be activated by natural solar light rather than by generated UV light.

The new material was tested in real outdoor scenarios in Denmark and Valencia, where it was used in pavements. These tests have shown that this new technology is able to reduce air pollutant levels by a staggering 80%, and can also help prevent water contamination. The project has also had a positive socioeconomic impact, as the innovative light sensitive material is cheaper and uses less energy than the current systems based on ultraviolet light. Accordingly, Light2Cat enables the use of photocatalytic material regardless of the weather conditions.



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ENERGY

SOLA BRISTOL

The SoLa Bristol project trialed in-home battery storage devices charged by rooftop solar PV panels in Knowle West (Bristol) council-owned homes and buildings. Participants were able to store power generated by the solar panels during the day to then use the power when it was needed. They also benefited from a Smart Tariff deal, allowing them to earn money by exporting their stored energy at peak times onto the electricity grid, thereby reducing their peak energy demand.

Western Power Distribution partnered with Bristol City Council, Siemens, the University of Bath, and Knowle West Media Centre to deliver the project, which came to an end in March 2016.



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DOCKLANDS 21: SMART AND SUSTAINABLE ENERGY COMMUNITY

Docklands21, recognised as a smart and sustainable energy community, is an initiative that aims to provide businesses with the right tools to improve energy consumption, showing them how to maximise resources and helping them to optimise their energy-related operations. Centred in the International Financial Services Centre (IFSC) and the Silicon Docks area of Dublin city's docklands, Docklands21 will work with all sectors of the community beginning with business.

Forty firms, representing 51 premises and 31,000 employees with a combined energy bill in 2014 close to €20 million, have already undertaken 193 different conservation projects over the past four years. Docklands21 is developing a plan to save an additional >6GWh of their energy consumption and rolling out support services to the 40 firms already involved.

By inspiring companies, communities, institutions, and professional services, and doing business in a sustainable way, Docklands21's ambition is for Dublin's docklands to be recognised as one of the most resource efficient areas in Europe by 2021.

Working towards this ambition, as well as providing a positive economic benefit, Docklands21's activities are helping to save money, shape new business models, and drive long-term business competitiveness.

Docklands21 is led by the International Sustainability and Investment (ISI) Centre and supported by both the Sustainable Energy Authority of Ireland (SEAI) and Dublin City Council.



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SPATIAL ENERGY DEMAND ANALYSIS

In 2015, Codema (Dublin's energy agency) published the Dublin City Spatial Energy Demand Analysis (SEDA) for Dublin City Council, the first of its kind to be delivered in Ireland at city level.

SEDA involves the mapping of local energy demand and matching it to the best local resources in order to find the most sustainable solutions for energy consumption now and in the future. Doing this allows the council to make decisions on how energy will be provided for in the city and presents opportunities for energy and CO₂ savings in line with EU targets.

The research analysed and mapped the results of over 200,000 households, 20,000 commercial properties and 1,000 local authority energy accounts in the city. For the very first time, this report was able to provide detailed information in over 2,000 small areas in Dublin city on:

- total energy demand
- total heat demand
- heat demand density
- total electricity use
- total fossil fuel use
- total annual energy costs
- average building energy ratings (BERs) in each area
- areas at risk of fuel poverty

Each area can now be visually mapped in order to highlight urgent issues and find solutions.



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CHECK YOUR HOUSE OPEN SOURCE APP

We have developed Check Your House to help the citizens of Ghent and to encourage them to make their home more energy efficient. With this app, citizens can determine where their home is losing energy and where they can save money by installing energy efficiency measures. After answering a few simple questions, the app suggests a few personalised steps along with an overview of the estimated investment needs, the available subsidies, and the annual energy savings to be expected.

Through its integrated communications strategy, the city advises and guides its citizens in making well thought out choices. Additionally, an Energy Centre serves as a contact point for free practical advice.

Our energy cards (heat map and solar map) are also integrated in the Check Your House app. The solar map is a unique tool in Flanders, which enables residents to evaluate the solar potential of each roof. The heat map shows the quality of their roof insulation.

Since Ghent wishes to share the benefits of this solution with other municipalities, we have made the source code available via the city's Github account.



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IURBAN: INTELLIGENT URBAN ENERGY TOOL

The iURBAN tool addresses increasing market demand for cheaper and cleaner energy services. It is being designed with the direct involvement of end-users—local residents, energy companies, and public administration.

Municipalities or other local or regional authorities or organisations typically operate a number of large buildings with many employees and/or visitors, such as schools, kindergartens, public libraries, and the city council itself. While several people frequent these buildings, they do not pay for the energy they use, which increases the risk of wasteful consumption.

The iURBAN smart Decision Support System (smartDSS) enables municipal cities to critically analyse consumption patterns within the buildings and detect sources of inefficiency (e.g. heating or lights left on overnight or during weekends), or power-hungry devices that might be turned off or replaced. Furthermore, optimal heating patterns can be set through smart heating devices, or energy managers can be given special training to keep wasteful consumption low in the building.

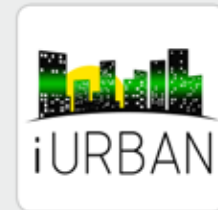
The system also helps building managers identify areas where they need to invest in insulation, the lack of which is a leading cause of energy loss, especially in less developed countries. In general, these tools can raise awareness of the impact of consumption patterns and might positively influence behaviour.

Private customers might especially benefit from these services as their use reduces their overall energy bills. If demand for energy perceptibly peaks at certain times of day or on certain days of the week, or if energy-hungry appliances such as heat pumps or air conditioners are in operation, it might be financially rewarding to introduce certain demand-side management measures.

THE IURBAN SOLUTIONS



IURBAN CONSORTIUM



Integrated Multilevel Scalable

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TRANSPORT

TRAFFIC MANAGEMENT CENTRE

The Dublin Traffic Management and Incident Centre is a single control room that handles traffic management for the Greater Dublin Area.

Powered by 130 CCTV cameras located across the city and in neighbouring local authorities, this traffic management system uses sensors at intersections to detect how many vehicles are in each lane, as well as the number of pedestrians.

Traffic lights can then be adjusted dynamically to respond to congestion. In the event of road traffic incidents, they can manually override automatic traffic lights to intervene and alleviate congestion.

The data generated is being used to develop and deploy new technologies to further automate and detect anomalies and black spots in the roads network.

The Traffic Management Centre works in cooperation with public transport service providers An Garda Siochana, AA Roadwatch, and other stakeholders, who can access the systems and disseminate the relevant information back to their people on the ground. This streamlines communication and allows for better management of incidents as they arise.



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CITY-WIDE TRANSPORT REPORTING SYSTEM (CITREPS)

The project is transforming the provision of real time transport information within central Milton Keynes, delivering a fully integrated smart city system by gathering and distributing real-time data about the “busy-ness” of the city, focusing on availability of public parking, public transport, and emerging network hazards. Live data will be shared through an intuitive app, enabling efficient use of infrastructure and increasing availability without building new capacity.

The project complements the recently completed MK:Smart project, rolling out sensor networks and combining these with front-end interfaces. This will deliver the first real-time, city-wide data feed on the end-to-end transport network.

The initial goal is to provide complete coverage of all car parking bays in Milton Keynes in order to give citizens a single viewpoint of the city’s entire parking estate. By providing citizens with city-wide, space by space, live car parking occupancy data, we can increase the utilisation of car parking spaces within the city and save huge sums of money by not having to build more car parking spaces.

In this initial phase, we estimate that the system will monitor around 30,000 parking spaces (20,000 in central Milton Keynes, and a further 5,000-10,000 on the city’s outskirts).



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GIRA NAPOLI APP

Gira Napoli is an app developed by LUSI-Lab, the IT laboratory of the Department of Physics of the University of Naples Federico II.

Based on an agreement with the Naples Mobility Company (ANM) and Napoliservices, the app offers free real-time public transport information to citizens and tourists (buses, trams, subways, and funiculars), along with guidance about the main tourist attractions.

The app allows users to:

- find bus stops on a map and track the real-time position of public transport vehicles
- view vehicle arrival times at any particular stop
- find the nearest transit stops
- find the main tourist attractions along their route
- download further information and pictures about these sights



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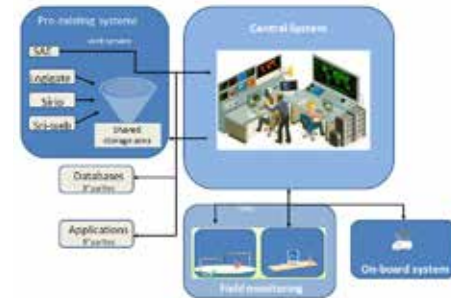
NAPOLI AREA URBAN SMART INNOVATIVE DISTRIBUTION CENTRE FOR ART CITIES (NAUSICA)

Based on a dynamic open architecture approach, the NAUSICA system aims to bring on board operators and other stakeholders (administration officials, businesses, citizens) in the use of a cooperative mobility system that relies on the shared use of infrastructure and services in order to rationalise urban freight delivery.

The platform will:

- track freight
- give real-time information about loading/unloading sites
- plan routes
- give real-time traffic information
- simulate the impact of traffic interventions

The system is able to integrate data from the city's other traffic control and management systems, such as the system that controls access to restricted traffic zones (ZTL) or the public road transportation support system.



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TRAFFIC LIGHTS HOTLINE

Upwards of 100,000 cyclists ride across Utrecht every day, and many of them feel that traffic lights could be configured better, and that some are actually not necessary at all.

To utilise the knowledge and experiences of all road users, the municipality launched an online service ('hotline') in February 2015, asking citizens to indicate which traffic lights could be deactivated (for part of the day) and which traffic lights' settings should be adjusted.

Within two months, almost 5,000 reports were received. The recommendations were remarkably clear, with several locations mentioned a lot more often than others, making the outcome very useful for the municipality. Based on these reports, traffic lights were deactivated at six intersections, and switched off outside peak hours at two other locations. Traffic light settings continue to be adjusted throughout the city.

The municipality made sure to respond to the reports, detailing the planned improvements at each affected intersection, and explaining why other suggestions had to be rejected. Both the reports and the responses are publicly available online.

The hotline has been such a success that the municipality decided to make this a permanent service for the city. The system enables intelligent traffic flow management and contributes to traffic safety. Its educational importance cannot be underestimated either.



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E-PARTICIPATION

BRISTOL APPROACH TO CITIZEN SENSING

The Bristol Approach to Citizen Sensing is about placing people at the heart of innovation and understanding the issues they care about. The underlying aim is to enable people to solve problems together by harnessing new 'smart city' technologies, without pushing technology or pre-determined solutions onto them.

Citizen sensing is a process where citizens build, use, or act as sensors: individuals identify and gather information (data) that will help them tackle an issue. The sensors could be bespoke temperature sensors built from scratch, or gadgets that already have sensors, such as smart phones. The idea is to empower people and communities to take positive action by using technology for social good. The approach was tested between November 2015 and August 2016, and is now being expanded through REPLICATE, our Horizon 2020-funded Smart Cities and Communities project. Our first citizen sensing programme explored the issue of poor quality rented accommodation, which resulted in damp sensors (created as delightful green frogs) deployed across homes in Bristol. This programme is a collaboration between Bristol City Council, Knowle West Media Centre, and Ideas for Change.



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FIX YOUR STREET

Fix Your Street is a crowdsourced community reporting service of non-emergency problems like litter, graffiti, broken lights, or road defects.

It enables citizens to submit reports about graffiti, leaks and drainage, potholes and damage to roads and paths, street lighting, and public green areas.

It was launched in August 2011 by South Dublin County Council and has since been extended nationally for use by any local authority interested in crowdsourced reporting tools.

How it works:

- Use the app, email, tweet #fysie, or fill in the contact form on the site to report a problem in your area
- Reports are moderated before being logged with the council's internal logging system, where resources will be assigned to address the issue
- You will be notified by email (if requested) when your issue has been resolved



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BETTER REYKJAVIK AND MY NEIGHBOURHOOD

Better Reykjavik is an online consultation forum that connects the city of Reykjavik with its citizens. Through this collaborative problem solving tool, citizens can submit ideas about the municipality's services and administration. They can also discuss and prioritise these ideas in different categories. The most popular ideas, along with the top five ideas overall, are entered into the city council's monthly agenda.

My Neighbourhood is a tool that enables citizens to participate in the annual budgeting process. Once the city assesses the costs and feasibility of each project, citizens are invited to vote on the ideas. Each voter starts out with the same budget figure, and he or she has to select the ones that matter most in his neighbourhood. This tool helps citizens understand the realities of budgeting. Cooperative democracy engages citizens, politicians, and administration officials in a dialogue and improves the decision and policy making processes in the city.

Since its launch in 2010, Better Reykjavik has inspired more than 70,000 people to propose and discuss over 4,500 ideas. To date, a total of 420 ideas have been approved by citizens via My Neighbourhood.



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TAMPERE, FINLAND

E-PARTICIPATION

T-SENIORITY: ONLINE SERVICE TO ASSIST THE ELDERLY

Tampere participated in the T-Seniority EU project in 2008-2010. T-Seniority focused on accessibility, ageing, and social integration by reinforcing both European and existing national initiatives.

During the T-Seniority project's Tampere pilot, an interactive service channel and model were created to improve senior citizens' quality of life, support their independent living at home, and alleviate loneliness. Seniors were able to receive a variety of social and health care services via SeniorLine, a user-friendly touch screen videoconference service. Seniors were developing the service model in cooperation with project workers. The service model enabled online meetings with relatives, nurses, doctors, home care personnel, and peers.

T-Seniority's goal was to promote the emergence of an inclusive European information society that is consistent with the sustainable development goals and that prioritises better public services and quality of life. Therefore it is fully in line with the EU's i2020 strategic framework.

The service model created during the T-Seniority pilot will be extensively used by Tampere's home care services in the near future.



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VALENCIA APP

Part of Valencia's smart city strategy and developed entirely by the city council's information and communication technology service, this mobile app, using open data, offers a wide range of services to improve the lives of citizens, and enables companies and developers to showcase their offers and solutions. This app for Android and iOS has been available to download since January 2014.

The app enables users to:

- subscribe to electronic information resources
- access municipal government information (news, events calendar, service providers' database, municipal campaigns)
- consult interactive maps of Valencia online (social services, food markets, gardens, transport, festivities point of interest, waste containers)
- access augmented reality content
- perform procedures (obtain registration certificates, keep track of their tax position, request an appointment, etc.)
- find facilities and services within 300 metres of their actual position (public car parks nearby with spots available; public bicycle services with available bikes; containers; parking for people with disabilities; monuments and museums; schools; etc.)
- receive GPS notifications: Valencia App can detect traffic density in real time using GPS and can send alerts
- receive and send alerts whenever there is a traffic incident using georeferenced digital photos
- 'Shuttle Applications': a manager of all mobile applications developed by the city of Valencia or private industry



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