



Making European cities greener

Towards clean and smart mobility

Horizon 2020

Foreword

Table of Contents

3	Foreword		
4	INEA's contribution to Urban Mobility		
	<i>CIVITAS</i>		
	<i>Smart Cities and Communities</i>		
	<i>The CEF Transport programme</i>		
6	Project's Overview		
8	FLOW	29	U-TURN
10	CREATE	30	ELIPTIC
12	HARMONY	32	GreenCharge
13	MOMENTUM	33	Meister
14	SocialCar	34	ELVITEN
15	MUV	35	STEVE
16	Cities-4-People	36	MORE
17	Metamorphosis	37	MaaS4EU
18	HiReach	38	CoExist
19	STARs	39	GECKO
20	HANDSHAKE	40	CIVITAS ECCENTRIC
21	CityChangerCargoBike	42	CIVITAS PORTIS
22	Prosperity	44	CIVITAS DESTINATIONS
24	SUMPs-Up	46	IRIS
26	SUMP PLUS	47	REMOURBAN
27	Park4SUMP	48	POSTLowCit
28	SUCCESS	49	MI2

Reducing CO2 and pollutant emissions from urban mobility is one of the EU's ambitious goals for creating more sustainable European cities. Currently, over 70% of EU citizens live in urban areas, and over 80% of the EU's GDP is generated in cities. However, urban congestion jeopardises EU goals for a competitive and resource-efficient transport system. Urban transport is responsible for about a quarter of CO2 emissions from transport. Consequently, clean and smart urban mobility has become an important factor for cities to flourish economically and socially, with a high quality of life environmentally.

The transition towards clean and smart mobility builds on four key pillars:

- ◀ A more efficient transport system
- ◀ Low and zero emission vehicles
- ◀ New business models and services for transport
- ◀ Multi-modality and inter-modality – integration of all transport modes

Research and innovation play a key role in developing, testing and launching the next generation solutions in these four areas onto the market. In addition, the long-term potential of disruptive innovations needs to be explored.

INEA, the European Commission's Innovation and Networks Executive Agency, implements important parts of the EU's research and innovation programme Horizon 2020 and the Connecting Europe Facility. The Agency selects and manages projects throughout their lifecycle, from idea to implementation. Between 2014 and 2019, INEA has supported a portfolio of 33 projects in the field of urban mobility and transport with around €175 million of Horizon 2020 funding.

This brochure gives examples of the Agency's projects that develop innovative solutions for urban transport and mobility. They have been selected from a broad project portfolio that covers domains such as sustainable urban mobility planning, demonstration and take-up of innovative transport solutions in living labs, green urban vehicles, and automated road transport in cities.

I hope that you will find this brochure informative and interesting.

Dirk Beckers
INEA Director



INEA's contribution to Urban Mobility

The Innovation and Networks Executive Agency (INEA) is an executive agency established by the European Commission to implement parts of EU funding programmes for transport, energy and telecommunications.

The Agency provides its stakeholders with expertise and high-level programme management, while at the same time promoting synergies between programmes, in order to contribute to economic growth and benefit EU citizens.

INEA supports research and innovation in urban mobility together with the Commission's Directorate-General for Mobility and Transport (DG MOVE) and

the Directorate-General for Research and Innovation (DG RTD). The Agency plays a key role in turning the policies set by the Directorates-Generals into successful projects with tangible results.

The parts of the programmes managed by INEA that provide funding for urban transport and mobility projects are the Horizon 2020 societal challenges 'Smart green and integrated transport', including the CIVITAS initiative, and 'Secure, clean and efficient energy', including Smart Cities and Communities, and the Connecting Europe Facility - CEF Transport, including the Urban nodes priority.

The *Horizon 2020 Smart, green and integrated transport* challenge aims at boosting the competitiveness of the European transport industry and achieving a European transport system that is resource efficient, environmentally-friendly as well as safe and seamless, for the benefit of all citizens, the economy and society.

CIVITAS

The *CIVITAS Initiative* was launched by the European Commission in 2002. It is a network of ambitious cities dedicated to cleaner and better transport in Europe.

Since its launch, the CIVITAS Initiative has had five funding phases in which more than 80 demonstration cities have tested and implemented over 800 solutions as part of integrated *CIVITAS demonstration* projects. The work in each CIVITAS demonstration city is organised and supported by a cluster of local partners.

In addition, as part of the last CIVITAS funding phase, some 30 *research and innovation projects* explore how new technologies and innovative services can support more resource efficient and competitive transport, and how economic and social trends influence the functioning of urban transport systems.

The CIVITAS demonstration projects intervene and assess impacts in ten thematic areas that reinforce each other: Car-Independent Lifestyles, Clean Fuels and Vehicles, Collective Passenger Transport,

Demand Management, Integrated Planning, Mobility Management, Public Involvement, Safety and Security, Transport Telematics and Freight Logistics. Besides impact, they evaluate the measure implementation processes and user responses.

The CIVITAS Initiative acts as a *capacity building and knowledge exchange network* as it offers local practitioners opportunities to learn about innovative transport and mobility solutions first-hand. The CIVITAS FORUM conferences, the Political Advisory Committee, the Thematic and Advisory Groups, the national CIVINETs and the CIVITAS website (www.civitas.eu) are all key elements of the initiative.

INEA is currently managing 3 CIVITAS demonstration projects and 29 CIVITAS research and innovation projects with a total EU contribution of around €180 million. These projects involve some 400 beneficiaries from all over the EU and neighbouring countries, including 17 demonstration cities, reaching about 10% of the EU population.

The *Horizon 2020 Secure, clean and efficient energy* challenge supports the transition to a reliable, sustainable and competitive energy system by overcoming a number of Europe's challenges, such as increasingly scarce resources, growing energy needs and climate change.

Smart Cities and Communities

The *Smart Cities and Communities (SCC)* lighthouse projects demonstrate sustainable, cost-effective and replicable district-scale solutions to increase cities' overall energy and resource efficiency, by addressing the building stock, the energy systems, mobility, climate change, water and air quality. They are positioned at the intersection of energy and transport innovation, enabled by open ICT urban platforms.

These projects aim at bringing profound economic, social and environmental impacts, resulting ultimately in a better quality of life, competitiveness, jobs and growth in cities.

The first SCC call was launched in 2014, and 14 projects have been funded so far in five calls, for a total EU contribution of around €300 million. The 14 ongoing SCC projects involve some 550 beneficiaries from all over the EU, including 40 lighthouse cities and 53 follower cities.



The *CEF Transport programme* supports the construction and upgrade of transport infrastructure in Europe. It also contributes to the deployment of sustainable and efficient mobility solutions, as well as to the combination of transport modes and ICT.

CEF – Urban nodes

The urban nodes priority (under the CEF and Trans-European Transport Network - TEN-T - policies) aims to better integrate long-distance transport with the urban traffic system for both passengers and freight. The objectives of this priority are:

- To cover the missing links and bottlenecks within and between the transport modes of the TEN-T in urban nodes (for example the connection between an airport and the city centre or between international rail stations and urban bypasses)

The CEF Transport programme

- To cover the missing links and bottlenecks by better connecting the TEN-T journeys with the urban ones
- To increase multi-modality, by sustainably shifting from cars to alternative modes for both freight and passengers or by shifting from fossil to alternative fuels, or by improving road safety. This includes public transport optimisation, development of bikes and cargo-bike transport patterns, alternative fuels infrastructure and/or solutions and services, low-noise and low-carbon urban freight delivery, car-sharing and ride-sharing schemes, better use of public space, etc.

Since 2014 the CEF urban nodes priority has been implemented through five calls, which resulted in 44 projects selected for funding with a total EU contribution of €215 million.

Topic Areas



- 1 **TRANSPORT PLANNING AND MODELLING**
FLOW; CREATE; HARMONY; MOMENTUM
- 2 **DIGITALISATION AND SOCIO-ECONOMIC TRENDS**
SocialCar; MUV; Cities-4-People; Metamorphosis; HiReach; STARS
- 3 **ACTIVE MODES**
HANDSHAKE;
CityChangerCargoBike
- 4 **SUSTAINABLE URBAN MOBILITY PLANNING**
PROSPERITY; SUMPs-Up; SUMP PLUS; Park4SUMP
- 5 **URBAN FREIGHT AND LOGISTICS**
SUCCESS; U-TURN
- 6 **ELECTRIC MOBILITY IN CITIES**
ELIPTIC; GreenCharge; Meister; ELVITEN; STEVE
- 7 **NEW TECHNOLOGIES AND SERVICES, INNOVATIVE INFRASTRUCTURE**
MORE; MaaS4EU; CoExist; GECKO
- 8 **CIVITAS DEMONSTRATION PROJECTS**
CIVITAS ECCENTRIC; CIVITAS PORTIS; CIVITAS DESTINATIONS
- 9 **SMART CITIES AND COMMUNITIES LIVING LABS**
IRIS; REMOURBAN
- 10 **CEF URBAN NODES**
POSTLowCIT; MI2

FLOW



Reducing congestion by creating opportunities for more walking and cycling

RUPPRECHT CONSULT-FORSCHUNG & BERATUNG GMBH

€3,781,696

<http://www.h2020-flow.eu/>

01/05/2015

30/04/2018

Coordinator

EU Contribution

Website

There are many tools that assess the benefits of walking and cycling in terms of health, environment and the economy. But what about transportation benefits? How can more walking and cycling actually improve or help to effectively manage traffic flow?

The EU H2020 FLOW project contributed to the paradigm shift wherein non-motorised transport is placed on an equal footing with motorised modes with regard to alleviating urban congestion. The project results confirmed that walking and cycling measures are systematically overlooked in congestion reduction due to the inability of existing transport analysis tools to fully assess their benefits. FLOW has been developing a set of tools to fill this gap:

- A comprehensive impact assessment tool
- A set of five multimodal analysis calculations for assessing different aspects of transport network quality
- Improved macroscopic and microscopic traffic modelling software.

FLOW cities Budapest (HU), Dublin (IE), Gdynia (PL), Lisbon (PT), Munich (DE) and Sofia (BG) actively participated in developing, refining and validating these tools, to analyse the relationship of cyclist and pedestrian movements to congestion in their local contexts.

At the same time, these six cities developed implementation scenarios and action plans for adding or up-scaling cycling or walking measures that are shown to reduce congestion. Their results are:



- Budapest became the first city in Europe to incorporate its bike share system into its public transport model, to accurately represent daily bike share use
- Dublin determined that pedestrianising the busy public plaza, College Green, would accommodate 700 more people during rush hour
- Lisbon found that reducing the curve radii and pedestrian crossing distances does not increase congestion, and greatly improves pedestrian safety
- Munich showed that reallocating public space for pedestrians and improving pedestrian safety results in travel time benefits that often outweigh the required investment, as well as safety benefits that are likely to equal or outweigh travel time losses for cars
- Gdynia demonstrated that introducing small-scale traffic calming measures and shared space on a street in the city centre will likely not increase congestion
- Assessing their cycle to work campaigns with five major employers, Sofia found that such campaigns result in over 500,000 EUR in estimated savings. The Sofia Cycling Strategy now includes cycling campaigns with employers as a standard measure.

FLOW has developed the following recommendations for transport planners and decision makers based on the insights gained during this Research and Innovation Action:

- Fully consider walking and cycling when developing plans and policies to improve transport system performance as well as through the impact analysis and implementation processes
- Improve existing transport analysis techniques and models to include all modes and to account for the interaction between modes
- Improve communication about multimodal transport analysis and increase transparency in the transport planning process
- Improve data collection for walking and cycling to better understand the movements of these modes (see the results from the FLOW data workshop on the FLOW website)
- Place transport system performance (including congestion) within the larger context of urban liveability, economic viability, safety and health (not above it).

Before FLOW	After FLOW
Politicians fear congestion	Politicians understand congestion
Mono-modal definition	Multi-modal definition
Bias towards vehicles	Balanced focus across modes
Cities only focus on motorised vehicles	Cities able to model motorised and non-motorised transport with the same level of detail
	Macroscopic scale: improved modelling of P+R and bike sharing schemes; improved route choice options by cyclist traffic assignment; etc.
	Macroscopic scale: enhanced modelling of interactions between cars, pedestrians and cyclists; shared space; better depicting of walking and cycling behaviour, etc.





Congestion reduction in Europe – advancing transport efficiency

UNIVERSITY COLLEGE LONDON

€3,870,146

<http://www.create-mobility.eu>



The CREATE (Congestion Reduction in Europe – Advancing Transport Efficiency) project set out to examine how five Western European capital cities (Berlin, Copenhagen, London, Paris and Vienna) have dealt with the growth in car ownership and use over the past 60 years, and how changing policy responses have impacted on congestion, air pollution and CO2 levels. A further five cities, at earlier stages in their car ownership growth curves (Adana, Amman, Bucharest, Skopje and Tallinn) investigated the extent to which the Western European experiences could be adapted to their cultural and geographic contexts.

The study combined a quantitative analysis of changing household travel patterns in each city over time, with qualitative interviews with city officials and politicians, to gain an understanding of the changing regulations, policies and public attitudes – and those things which had accelerated or retarded shifts towards more sustainable transport policies.

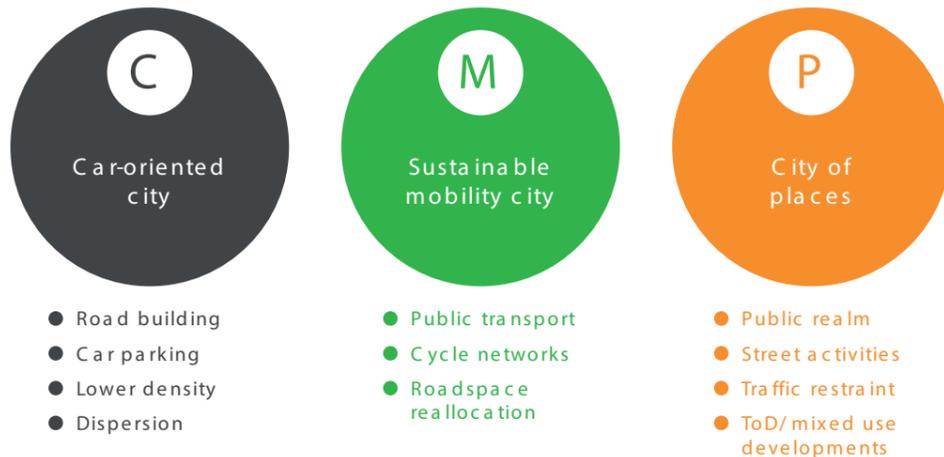


Figure 1



CREATE demonstrated that cities have had very different policy priorities at different points in time (from adapting the city to the car, through to developing high quality places), that have given rise to the introduction of very different policy measures (fig 1)

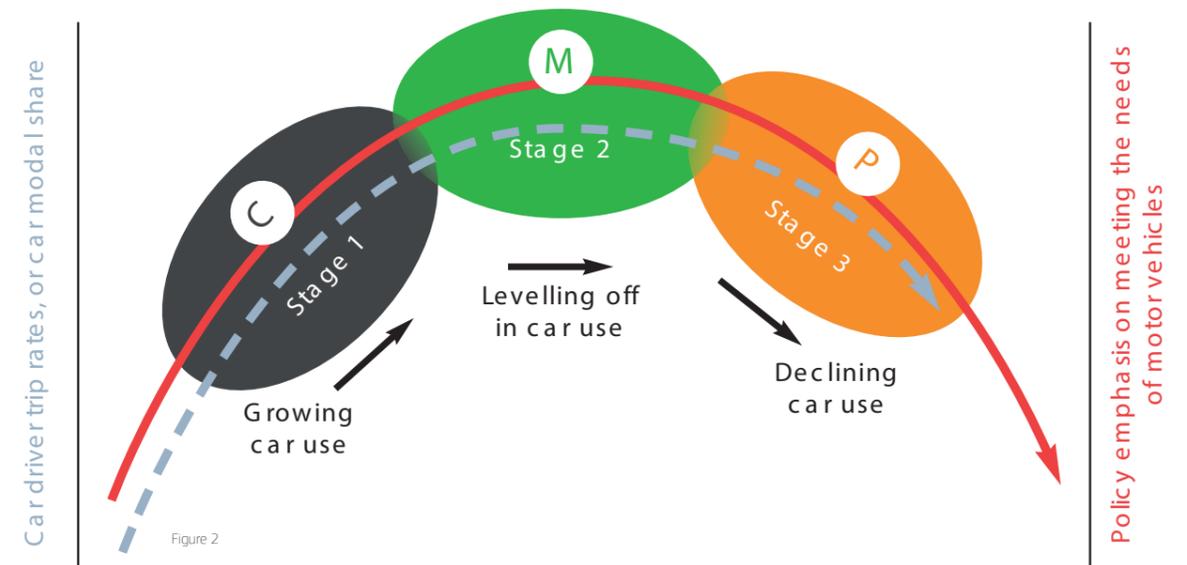
These policy priorities and supporting measures have tended to be introduced sequentially in three stages (Car-oriented in 1960s and 1970s; Sustainable mobility from the 1980s and City of places from 2000s), and have in turn led first to increasing car use and road traffic, then a levelling off and more recently a decline (fig 2).

CREATE has identified policy packages that have been most successful in different contexts in reducing car use, while enhancing the quality of public spaces and improving the provision of public transport, walking and cycling facilities. It has developed a comprehensive set of CREATE guidelines which brings together the various learnings from the project to provide cities with

guidance on how to evolve and implement Stage 2 and Stage 3 policies (see <http://www.create-mobility.eu/>). CREATE has worked with our Central/Eastern European and EuroMed cities to help introduce these policies, which have enabled the authorities to move away from car-based planning.

All CREATE cities have been interested in the question: “what is Stage 4 and how might we plan for it?”; although the future is uncertain, one proposal was the ‘Integrated City’, where Mobility as a Service offers fully integrated transport services, and the widespread adoption of Smart City initiatives encourage more cross-sector investment planning. Cities were particularly mindful of the potential positive and negative impacts of autonomous vehicles – and how these could be regulated in order to serve rather than frustrate future city visions.

Since the completion of the project, CREATE ideas have been applied elsewhere in Europe and in cities in Sub-Saharan Africa and in South America.



© CREATE

Topic: Transport planning and modelling



HARMONY

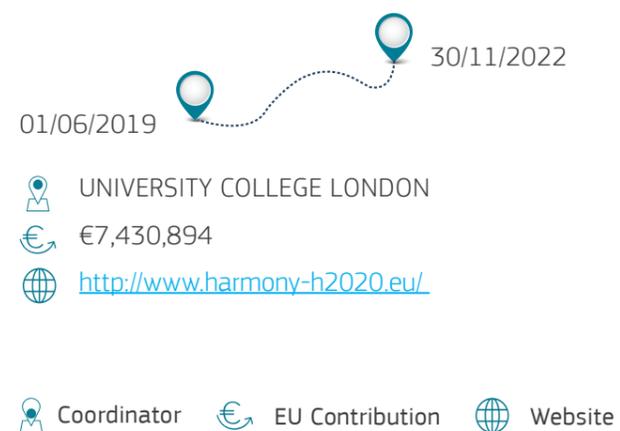
Holistic approach for providing spatial and transport planning tools and evidence to metropolitan and regional authorities to lead a sustainable transition to a new mobility era

HARMONY's vision is to develop a new generation of harmonised spatial and multimodal transport planning tools. These tools comprehensively model the dynamics of the changing transport sector and spatial organisation, enabling metropolitan area authorities to lead the transition to a low carbon new mobility era in a sustainable manner.

HARMONY goes beyond simply designing the planning tools. Stakeholders are actively engaged in co-creation labs to understand their needs in terms of integration of traditional and new transport modes, as well as regional spatial and transport planning. New mobility technologies and concepts, such as electric autonomous vehicles and drones, are demonstrated and integrated with the traditional transport modes to derive the real-world challenges, social acceptance and policy requirements. HARMONY uses the results of the tools and the co-creation labs to offer a complete solution including recommendations for a new generation of Sustainable Urban Mobility Plans (SUMP) ready to tackle the challenges of the new mobility era and regional planning. HARMONY's outputs act as an enabler of the innovation process and its introduction in harmony with the needs and requirements of agglomerations.

HARMONY will test its solutions in 6 metropolitan areas: Rotterdam (Netherlands), Oxfordshire (United Kingdom), Athens (Greece), Turin (Italy), Trikala (Greece), Upper Silesian-Zaglebie Metropolis (Poland).

The consortium consists of 21 organisations from 9 European countries and it is led by University College London. The duration of the project is 3.5 years.



Topic: Transport planning and modelling



MOMENTUM

Modelling Emerging Transport Solutions for Urban Mobility

Disruptive technologies, such as shared mobility, Mobility as a Service (MaaS) and Connected Autonomous Vehicles (CAV), are bringing radical changes in urban mobility. The goal of MOMENTUM is to develop a set of new data analysis methods, transport models and planning support tools able to capture the impact of new transport options on urban mobility, especially MaaS and shared mobility.

This would support cities to design the right policy mix to exploit the full potential of emerging mobility solutions. The project aims to deliver:

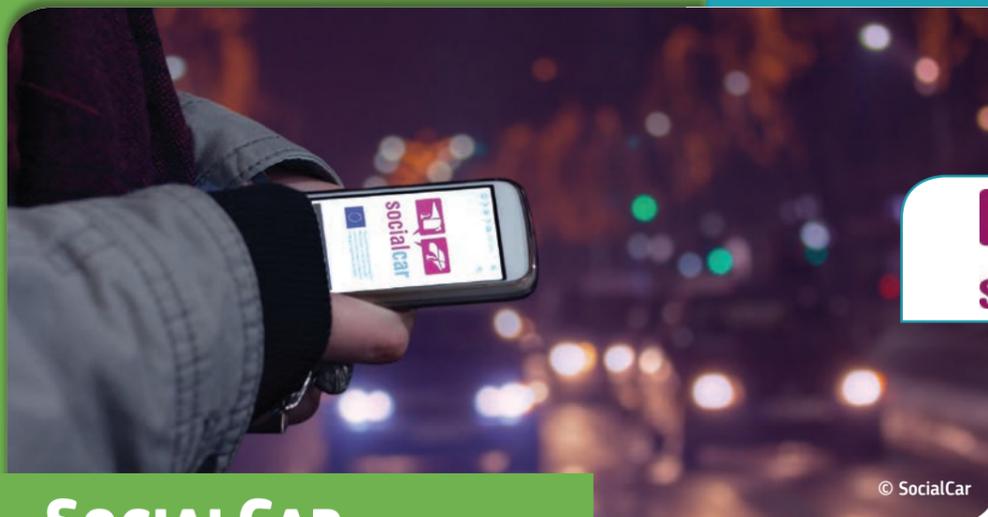
- A set of plausible future scenarios for the next decade to be taken into account for mobility planning in European cities, considering the introduction of disruptive technologies
- Characterisation of emerging activity-travel patterns of the existing forms of transport, such as shared mobility, by profiting from the increasing availability of high-resolution spatiotemporal data from ICT devices
- Data-driven predictive models of the adoption and use of new mobility concepts, in particular MaaS and shared mobility, their interaction and complementarity with public transport
- Transport simulation and planning support tools able to cope with the new challenges faced by transport planning, by enhancing existing tools

with the analysis methods and travel demand models developed by the project

- A demonstration of the potential of the newly developed methods and tools by testing the impact of a variety of policies and innovative transport services in different heterogenous European cities (Madrid, Thessaloniki, Leuven, and Regensburg), and evaluating the contribution of the proposed measures to the strategic policy goals of each city
- A set of guidelines for the practical use of the methods, tools and lessons learnt delivered by the project in the elaboration and implementation of SUMP and other planning instruments.



Topic: Digitalisation and Socio-economic trends



© SocialCar

SOCIALCAR

Open social transport network for urban approach to carpooling

SocialCar is a Horizon 2020 European research project completed in 2018 and aimed at enhancing the public transport network by a wider variety of on-demand services. SocialCar developed a suite of services, studies and business models tested in 10 European cities with the concrete generation of multimodal trips: the unique feature of the system is to discover and propose to users travel itineraries combining both public transport and carpooling or other on-demand services, enhancing the potentialities of the whole mobility network in cities. By developing data processing flows and algorithms, the project responded to the challenge of matching travel requests with the integrated public-private transport supply.

The project produced tangible results summarised as follows:

- An integrated software platform and the Mobile App RideMyRoute made available as Open Source (in Github, Apple Store and Google Play) for further developments
- A novel data exchange protocol especially designed for carpooling, documented in public project deliverables
- A deep evaluation framework and related assessment reporting the outcomes of project experimentations

- Several business models for potential product roll-out, along with market framework analysis
- The financial assessment elaborated for the 10 project sites with a dedicated tool publicly available and easily configurable.



Coordinator EU Contribution Website

Topic: Digitalisation and Socio-economic trends



© MUV

MUV

Mobility Urban Values

MUV stands for “Mobility Urban Values” and is a digital platform turning sustainable mobility into a sport game.

You play using a mobile app available on Android and iOS stores (muvapp.eu).

You get points every time you move in a sustainable way: walking, cycling, using public transports and carpooling.

With MUV you become a sustainable mobility athlete.

You train yourself but you also compete with other MUVers in your neighbourhood.

City teams play against each other in the context of the MUV Sustainable City Tournament.

This game can make your neighborhood a better place.

MUV promotes indeed a shift towards more sustainable and healthy mobility choices by engaging in a positive way local communities, local businesses and policymakers.

Citizens become sustainable mobility champions and are rewarded for joining challenges in the game.

Local organisations and shops become sponsors and get access to an innovative communication system to reach (new) customers.

City planners and mobility managers become trainers and lead MUVers to the final victory. Moreover, they are provided with data about human-transit collected through the app (anonymised and aggregated) and environmental data collected by a set of monitoring stations installed around the MUV neighbourhoods.

The MUV service is open and has been co-created and tested with the communities of six neighbourhoods in the following cities: Amsterdam, Barcelona, Fundão, Ghent, Helsinki and Palermo. Ten additional cities have joined the MUVement through the first Open Call (September 2018) and a new one is ready to be announced.



Coordinator EU Contribution Website

Topic: Digitalisation and Socio-economic trends



CITIES-4-PEOPLE

New approaches for community-driven sustainable mobility innovations at neighbourhood and urban district level

Cities-4-People (2017-2020) promotes a people-oriented transport and mobility (POTM) approach using five pilot cities as a testbed, namely Budapest (HU), Hamburg (DE), Istanbul (TR), Oxford (UK) and Trikala (GR). The project focuses on the needs of citizens at neighbourhood level and fosters the development of innovative and sustainable mobility solutions. Each pilot area sets up a collaborative space, the Citizen Mobility Lab, where citizens can meet with local authorities, mobility providers and academics and co-design solutions that have a low ecological footprint and respond to local urban mobility challenges.

This process entails numerous activities, which span from research to piloting. The project starts with mapping mobility challenges in each of the cities. Based on the results, citizens are invited to co-define the intervention areas, after which Citizen Mobility Communities are brought together to envision possible solutions to the specific challenges of the neighbourhood. Through a series of dedicated events (warm-ups, presentation days, hackdays, quadruple helix stakeholder workshops) and the use of the Citizen Mobility Kit (a living tool comprising a mix of online and offline resources), the communities move from ideas to concepts to the selection of three solutions per neighbourhood. These are first prototyped, then refined and finally

tested. All interventions are monitored and assessed according to the Core-Outcome-Set methodology. In each pilot city, the solution with greatest potential is improved through a second cycle of dedicated events, subsequently piloted and assessed. A Deployment Toolkit and Replication Guide is created at the end of the project to enable other cities and stakeholders to take up Cities-4-People's assets and ensure their sustainability.

Ultimately, the legacy of Cities-4-People will mirror the many layers of the project: there will be new knowledge, fresh input for policy making, five vibrant communities, and fifteen+ sustainable and scalable POTM solutions.



Coordinator
 EU Contribution
 Website

Topic: Digitalisation and Socio-economic trends



METAMORPHOSIS

Transformation of neighbourhoods in a child-friendly way to increase the quality of life for all citizens

The concept of roads has been around for a long time, much longer than we have had cars, but a shift of paradigm in the last century transformed the colourful multi-functionality of cities into the mono-use of motor vehicles, leaving behind people and making streets planned for cars - to establish the "right" rules for the use of city space. The vision of the Horizon2020 METAMORPHOSIS project is to redesign this space with a focus on children and transform neighbourhoods into more liveable spaces for all.

Indeed, children have direct experience of street use every-day and are spontaneous ambassadors of what sustainability represents with regard to streets: free, cohesive and safe places where people can enjoy time and build social relationships. METAMORPHOSIS listens to their voice and creates activities with them for this transformation to take place.

Thanks to temporary interventions in public spaces, citizens, city planners and expert stakeholders face an alternative use of public space and may experience an increased number of children on the street and a reduction of car trips. The so-called "crystallisations points", hybrid zones, parklets or temporary street openings bring people back to the

street and improve their quality of life; whereas bike share points, empowerment of active mobility and use of educational innovation tools enable a behavioral shift in their mobility habits and contribute to a more equal accessibility to street use.



Coordinator
 EU Contribution
 Website

Topic: Digitalisation and Socio-economic trends

WHAT we do

Explore and develop new business models for COLLECTIVE PASSENGER TRANSPORT

Small scale, modular and easily replicable mobility services provided at affordable prices or with minimum subsidies



Informal ride-sharing and van pooling



Community transport services



Innovative ride-hailing mobility services



On demand flexible public transport



© HiReach

HiREACH

High reach innovative mobility solutions to cope with transport poverty

HiReach aims to address the mobility needs of different groups vulnerable to transport poverty and social exclusion - such as people with reduced mobility, children, young and elderly people, women, migrants and ethnic minorities, those on a low income or unemployed - to favour more inclusive and flexible mobility solutions. The project also analyses geographical and spatial elements affecting transport poverty to figure out mobility options that can simultaneously combine the needs of several groups in different target areas like urban-peripheral, peri-urban, rural and remote or deprived territories.

HiReach is working in 6 European study regions: Counties of Esslingen and Göppingen (Germany), Naxos and Small Cyclades (Greece), Inner Area Southern Salento (Italy), Guarda and Torres Vedras (Portugal), Buzau (Romania), North and South-East Luxembourg.

By combining different attributes of available transport concepts and bottom-up initiatives with new operational schemes and IT applications, HiReach explores viable business models for small scale, modular and easily replicable mobility services that can be provided at affordable prices and/or with minimum subsidies. Thus, the project will contribute to substantiate and make clear the difference between a genuine sharing economy that can solve

mobility poverty challenges and a profit-making collaborative economy that needs fair regulation of transport service providers.

The HiReach mechanism is based on the creative work of start-ups and innovative entrepreneurs, but also on social innovation through the direct involvement of different social groups as developers, co-users and co-owners of the proposed solutions, in order to explore, generate and test inclusive mobility solutions.



TRT TRASPORTI E TERRITORIO SRL
 €2,024,875
<http://www.hireach-project.eu>

Coordinator EU Contribution Website

Topic: Digitalisation and Socio-economic trends



STARS

Shared mobility opportunities and challenges for European cities

The STARS project - Shared mobility opportunities And challenges for European cities - aims to explore and boost the use of car sharing in Europe.

It will analyse the car sharing market, measure the benefits of different services and compare their costs. The project will also study user profiles and behaviour.

For the first time, STARS will also look into the implications and impacts of car sharing rather than on the implementation of the service itself. Impacts on other transport modes (private car, bike, walking, taxi, public transport...) and on the car industry will be assessed, and impacts in terms of congestion, greenhouse gases, accessibility and social cohesion will also be quantified.

Thanks to the knowledge gained via the project, a policy toolkit that includes guidelines and recommendations has been designed. It will help European mobility stakeholders and policymakers make the right decisions and implement the best car sharing services that will maximise environmental and social benefits and help make European cities better and more affordable places to live.



Coordinator EU Contribution Website

Topic: Active modes



2020
CIVITAS
Handshake

HANDSHAKE

Enabling the transferability of cycling innovations and assessment of its implications

Many European towns and cities face alarming levels of congestion, air and noise pollution, and a scarcity of public space. This decreases the quality of life and makes urban environments dangerous and inefficient for non-car users to navigate.

Cycling is a powerful way to tackle these problems and to transform cities into more sustainable, equitable and economically prosperous places.

CIVITAS Handshake is supporting cities to become cycle-friendly for all by working with three world-renowned Cycling Capitals – Copenhagen (Denmark), Amsterdam (the Netherlands), and Munich (Germany).

They will share their expertise and proven cycling solutions with 10 aspiring cities from across the EU: Bordeaux (France), Bruges (Belgium), Cadiz (Spain), Dublin (Ireland), Greater Manchester (UK), Helsinki (Finland), Krakow (Poland), Riga (Latvia), Rome and Turin (Italy).

Three transfer processes foster this empowerment: transition management, novel assessment and evaluation, and immersive study activities. A city-to-city mentoring programme underpins this all.

Over 60 solutions are being deployed across four thematic areas: awareness and education; infrastructure and services; modelling and assessment; planning, regulations, and standards.

This will see cities identifying and applying innovative solutions linked to topics as diverse as intelligent transport systems, socio-economic assessments, nudging, communication, governance, and bike lanes, parking and sharing.

By helping to establish the conditions cycling needs to become an everyday, inclusive mode of transport, Handshake will boost cycling's modal share, increase public safety and health, encourage more equitable and people-friendly use of public space, and reduce congestion and pollution. Ultimately, this will enhance cities' attractiveness, economic competitiveness and liveability for all.

01/09/2018   28/02/2022

 ISTITUTO DI STUDI PER L'INTEGRAZIONE DEI SISTEMI (I.S.I.S) - SOCIETA' COOPERATIVA

 €4,998,594

 <https://handshakecycling.eu/>

 Coordinator  EU Contribution  Website

Topic: Active modes



CITYCHANGERCARGOBIKE

Enabling the full potential of bikes to transport freight and more passengers

Our cities are facing complex challenges related to urban mobility, which are predicted to worsen as the volume of traffic caused by commercial delivery services and private trips increases. Earlier projects have demonstrated that cargo bikes have a huge potential to tackle these challenges as they can improve the image and general levels of cycling, replace over 50 % of transport related trips in cities, as well as enhance air quality and safety levels. At present however, this innovative solution is not fully deployed in any European cities.

City Changer Cargo Bike (CCCB) exploits the limitless potential of cargo bikes promoting their usage amongst public, private, and commercial users. Supported by the Horizon2020 programme, CCCB brings together 20 partners including cities, research institutes, NGOs, and industries from all over Europe in the quest to achieve a faster, cost-effective and larger scale deployment of this sustainable mobility option. By assessing best practices across Europe, CCCB will raise awareness and support the uptake of cargo bikes and cargo bike initiatives. In doing so, the project will foster exciting developments that offer more sustainable logistics operations, improve public spaces, engage citizens, and reduce traffic congestion.

The expected results of the project are:

- Increased awareness amongst public, private and commercial stakeholders
- The use of innovative tools for the take-up, scale-up, and transfer between forerunner and follower cities
- The establishment of favourable framework conditions for cargo bike use
- A wide roll-out and transferability through Forerunner cities, Follower cities (within the consortium) and External follower cities
- Reduced congestion, emissions; increased safety; improved public space and its usage.

The project has already produced a number of important guidelines and brochures, which can all be downloaded on its website.

01/09/2018   31/08/2021

 FORSCHUNGSGESELLSCHAFT MOBILITAET Austrian Mobility Research FGM - AMOR Gemeinnutzige GMBH

 €3,808,645

 <http://www.cyclelogistics.eu/>

 Coordinator  EU Contribution  Website

PROSPERITY



Prosperity through innovation and promotion of Sustainable Urban Mobility Plans

Thanks to support from several earlier European initiatives, there is now a clear concept for Sustainable Urban Mobility Plans (SUMP) right across the European Union. Nonetheless, take up of SUMP in some countries has remained low. The reason for this is clear: there is a gap between the needs and demands of the cities that develop and implement SUMP, and the higher levels of government who can

and should prepare the ground for the cities to develop and implement SUMP. The main aim of CIVITAS PROSPERITY has been to close this gap.

The majority of the activities of the project took place in Southern, Central-eastern and Eastern Europe where SUMP were and remain something new. The low take up of SUMP was the result of several factors: different cultures, different planning traditions, and a lack of understanding as to why a SUMP is an innovative and useful tool and not just a tick-box exercise. In these regions the communication of the SUMP concept, building political and internal buy-in for SUMP, and a common understanding of the concept are at least as important to develop as producing the SUMP document itself.

The main concept of PROSPERITY was to get the national level involved actively in supporting cities to develop SUMP. This happened in two ways: firstly, in regular international peer-to-peer exchanges between the national and regional level authorities of different countries, where they could learn about each other's



national SUMP activities. Secondly, in a development process in each project country, in which the national level interacted - and still interacts - with the cities and other important stakeholders in a national SUMP task force.

Ministries, agencies and cities met 55 times to exchange experience on their national and regional programmes and to learn how their own programme could be started or improved by their own national SUMP Task Force. In all 13 countries of focus, national / regional SUMP supporting programmes (or roadmaps for a programme) have been designed with the support of and contributions from the highest level of administration in these countries / regions.

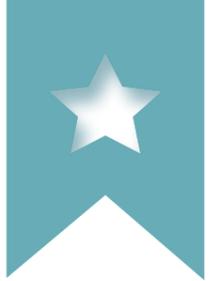
To spread the SUMP message to cities, and to build capacity, national four-day face-to-face training sessions in national languages were carried out in 10 countries for a total of 8 different training topics with more than 300 trainees. Training materials in several languages were produced. In addition, 6 webinars were carried out which reached more than 350 participants

from 28 countries. On top of this, 32 city level coaching events were held in 11 cities where experts and SUMP champion city representatives gave tailored advice to those cities on selected SUMP topics.

PROSPERITY also organised the 5th international SUMP Conference in Dubrovnik in 2017 which had around 400 participants, and the project was presented at more than 40 international conferences and workshops.

Among other results, PROSPERITY developed 16 multi-language innovation briefs, three thematic SUMP guidelines and three good practice video clips. A particularly effective output is a series of interviews with "SUMP ambassadors" - 26 politicians, experts, representatives of cities and academics from several countries - to help convince other stakeholders to deal with SUMP.

All results, products and other materials, including the interviews, are available free of charge on the project website.



SUMPs-Up



European programme for accelerating the take up of Sustainable Urban Mobility Plans

Since September 2016, CIVITAS SUMPs-Up has been working to accelerate the uptake of Sustainable Urban Mobility Plans (SUMPs) across the European Union. However, while the number of SUMPs and their advocates are growing steadily, uptake levels vary greatly depending on the location.

A comprehensive needs assessment conducted at the start of the project, including answers from 328 cities, has confirmed this. To bridge this gap, SUMPs-Up has focused on countries with low SUMP adoption rates and where the negative effects of transport are most severe, assisting planning authorities to overcome barriers to SUMP development and implementation.

A series of publications provide planners with expert guidance on crucial SUMP topics. Three manuals advise cities how to select measures systematically - each one is tailored to a different city profile. After measures have been chosen, a plan is needed to apply them: a report walks mobility planners through the steps of developing a SUMP Action Plan.

The project has also been instrumental in creating the improved and updated second edition of the EU SUMP Guidelines, due for release at the CIVITAS Forum in October 2019. Five



SUMP-related topic guides will complement this.

Moving beyond the written word, the CIVITAS Tool Inventory - which SUMPs-Up helped develop - is a rich online resource with over 180 tools. Local authorities can use it to pinpoint the tool(s) best suited to tackle their urban mobility issues.

More than 200 mobility practitioners were offered the unique opportunity to attend more than 60 learning activities, including seven online courses, six webinars, eight workshops and study visits. These detailed the different phases of the SUMP process, whilst providing best practice examples and prompting cities to review their own planning practices.

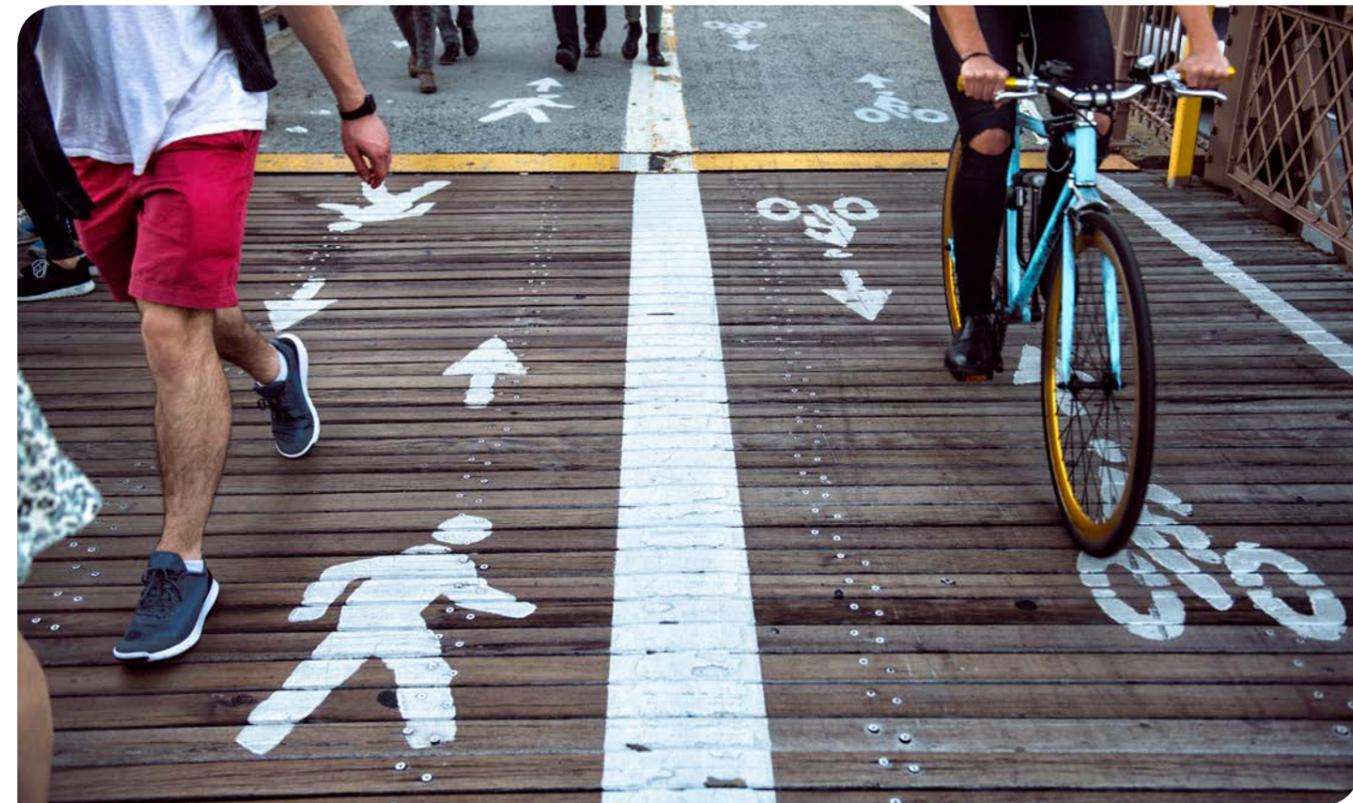
Yet the most effective change is often achieved in the presence of people. By the project's end, nearly 100 planning authorities from throughout and beyond the EU will have tested the most effective concepts, approaches and methods in SUMP practice through the SUMPs-Up Learning Programmes.

These intensive, participant-driven capacity building programmes have accompanied and supported planning authorities through various stages of the SUMP development process, utilising 15 webinars, 15 moderated e-courses, 15 workshops, and 10 peer reviews.

A new, enthusiastic SUMP community has been created that is ready to spread the SUMP message and knowledge to a new generation of towns and cities.

Although SUMPs-Up's chapter in the EU SUMP story will soon close, its work is helping SUMPs to be embraced as the EU mobility planning standard. With its rich selection of materials and role in forming the next wave of SUMP advocates, the project's end marks only the beginning of its impact.

All SUMPs-Up materials are available on its website.



Topic: Sustainable Urban Mobility Planning



2020
CIVITAS
Cleaner and better transport in cities
SUMP-PLUS

SUMP PLUS

Sustainable Urban Mobility Planning: pathways and links to urban systems

This new three-year project is designed to address urban mobility-related challenges and maximise opportunities for Sustainable Urban Mobility Plan (SUMP) and Sustainable Urban Logistics Plan (SULP) uptake.

It will do this by building on the strengths of existing SUMPs and SULPs and developing a rigorous evidence base through a co-created City Laboratories approach.

This will be put into practice in six EU cities: Alba Iulia (Romania), Antwerp (Belgium), Greater Manchester (United Kingdom), Klaipeda (Lithuania), Lucca (Italy) and Plataniias (Greece).

The experience from these diverse locations will help SUMP-PLUS develop and apply transition pathways towards more sustainable cities, whilst considering the need to strengthen links with other urban development-related policy fields.

Methodologies and analytics will also be delivered demonstrating how to customise pathways to cities with different characteristics, capabilities, resources and aspirations.

SUMP-PLUS's four primary policy objectives are to:

- Develop and apply context-specific mobility transformation pathways that enable cities to map out implementation pathways
- Demonstrate how cities can develop stronger ties with other policy areas necessary for holistic urban

development, such as education, health and land-use planning, whilst reflecting technological and contextual developments

- Identify solutions that increase efficiency and sustainability in the freight and passenger sectors
- Devise and demonstrate new partnerships and business models that help meet mobility objectives in a cost-effective way, through suitable public-private partnerships.

Achieving this entails numerous steps: developing appropriate urban governance arrangements and advanced analytics; extensive stakeholder engagement and output co-creation; producing guidance suitable for various target groups; and maximising impact through targeted dissemination, capacity building, knowledge transfer and exploitation



Coordinator EU Contribution Website

Topic: Sustainable Urban Mobility Planning



2020
CIVITAS
Cleaner and better transport in cities
PARK4SUMP

PARK4SUMP

Strategic integration of innovative parking management solutions into SUMP policies

Park4SUMP is an EU-funded Horizon 2020 project dedicated to showing how cities can adapt parking management policies and deploy effective and innovative solutions as part of their Sustainable Urban Mobility Plans (SUMPs).

Park4SUMP project's methodology is built around tailor made advice and support to cities in Europe, delivering 6 key outputs:

- 16 partner cities will improve their parking policies and pilot implementation of more than 50 parking management good practice solutions
- 14 national governments will increase their knowledge as to how high-level government laws and regulations facilitate or hinder the use of innovative and effective parking management in their cities
- External follower cities will benefit from capacity building and exploitation of results to improve integration of parking and SUMP policies and implement about 300 parking management approaches
- A parking policy and management audit tool, PARKPAD, will be developed and piloted in 16 Park4SUMP cities
- PARKPAD audits in all partner cities and an additional 10 (external to the consortium) cities
- Tailor made Park4SUMP training programme (national training events and webinars) for local, regional and national authorities in 16 countries.

A real game changer in urban parking management will be the development of a new tool, PARKPAD. It provides an audit process that helps cities to review their parking policies and the organisational set-up for them, and to achieve consensus on these improvements. PARKPAD will result in a Parking Policy Quality Report. From this common starting point, the stakeholder group and the auditor will jointly create an agreed PARKPAD Action Plan as part of the city's SUMP, comprising innovative, effective and locally acceptable package of parking management measures.

Park4SUMP also coordinated the editing of a Practitioner Guide on Parking and SUMP, to be launched at the Civitas Forum 2019 in Graz.

The project invites cities in Europe to take part in its National Parking Policy and Management training activities, webinars and PARKPAD auditor training events starting from Autumn 2019.



Coordinator EU Contribution Website

Topic: Urban freight and logistics



SUCCESS

Sustainable Urban Consolidation Centres for construction sites

Construction related transport is a big component of urban traffic and can be highly disruptive to daily life. The SUCCESS project has investigated an alternative approach where, instead of transporting goods and materials directly to a site, they were taken first to a construction consolidation centre (CCC).

The idea of a consolidation centre is related to the possibility of aggregating different loads dropped off by carriers and making deliveries to the construction site using cleaner vehicles with a higher load factor.

SUCCESS' insights were built on data collected from four separate construction projects, in Luxembourg City, Paris, Valencia and Verona.

The simulations showed that an improved supply chain management could reduce the number of freight vehicles between 42 and 54%, noxious emissions between 8 and 41%, and the distance travelled between 20 and 42%. Furthermore, small deliveries can be entirely eliminated and the load factor can be increased by 41% to 232%.

Proper management of a CCC can make it a viable business, with a payback of less than a year in the best-case.

The project developed an open toolkit, including a cost/benefit analysis tool to assess the impact of a CCC, and a tool to identify the ideal location for a centre.

The project's work is already having a practical impact, with CCCs implemented in cities such as Florence and Brussels.



Topic: Urban freight and logistics



U-TURN

Rethinking urban transportation through advanced tools and supply chain collaboration

Vertical collaboration schemes such as backhauling between manufacturers and retailers is a widely implemented practice. However, horizontal collaborative logistics - developed when suppliers, retailers and third-party logistics (3PLs) with different supply chains cooperate with competitors and with non-competitors - has gained a lot of attention. Their enhancement can facilitate and accelerate the transition to a modern logistics system by effectively minimising operational costs, ameliorating environmental impact and increasing efficiency. The U-TURN project has provided evidence of their advantages and implementation challenges on food distribution through five pilots:

- Horizontal collaborative logistics by using shared vehicles in the Attika area: The Barilla and NESTLE case
- Horizontal collaborative logistics by using an Urban Consolidation Center in the Attika area: The AB Vassilopoulos and Metro - MyMarket case
- Horizontal collaborative logistics by using the U-TURN platform in the Attika area: The case of four 3PL companies
- Horizontal collaboration among fresh food local producers in the Milan urban area
- Using e-cargo bikes for online groceries home delivery in the London urban area: The Sainsbury case

- Collaboration in urban distribution of online grocery orders in London urban area.

Based on the pilots' outcomes, it can be concluded that there is theoretical and practical evidence that collaboration improves economic, environmental, and social sustainability of food distribution in cities.

The improvements achieved by collaboration depend on the operating conditions and distribution parameters examined in line with model assumptions put forward in each pilot.



ELIPTIC



Electrification of public transport in cities

The H2020 project ELIPTIC combined two very crucial aspects of sustainable urban mobility: 1) the electrification of transport as a path to zero emission mobility and 2) public transport as the backbone of space-efficient mobility. With these practical and political research aspects, the City of Bremen coordinated the ELIPTIC project - involving 33 partners from 8 EU countries representing research, industrial suppliers, operators, networks like UITP and POLIS.

The topic of electrifying public transport is very high on the agenda of cities and at the national and European level for good reasons. These include reducing local air quality problems, reducing greenhouse gas emissions and tackling transport problems.

ELIPTIC evaluated various approaches and technologies for electrifying public transport and demonstrated that further take-up of electric vehicles can be done cost-efficiently by integrating multi-purpose charging into existing public transport infrastructure. ELIPTIC received funding of €5.9 million with which it realised 20 different use cases in the form of both practical operations and feasibility studies.

The overall concept and main assumption underpinning ELIPTIC are that further take-up of electric vehicles can be supported cost-efficiently



All images © ELIPTIC



by 1) integrating existing electric public transport infrastructure and 2) using it more efficiently.

One of the three technical pillars dealt with the use of existing electric public transport systems (including light rail, metro, tram and trolleybus) for the electrification of multimodal mobility.

Another pillar dealt with increasing the efficiency of the electrical system, for example, through the use of energy storage or reversible substations.

The third pillar was a multi-purpose use of electric infrastructure, especially looking into how recharging infrastructure can be used for other types of electric vehicles and which technical, legal and fiscal barriers need to be addressed.

ELIPTIC analysed 20 concepts of electrifying public transport in 11 cities (Barcelona, Bremen, Brussels, Eberswalde, Gdynia, Lanciano, Leipzig, London, Oberhausen, Szeged and Warsaw) to develop tailor-made solutions and recommendations. The research results were subject of intense exchange with further cities and

operators all over Europe – through city “twinning” and a user forum. In this way, ELIPTIC extended its already significant practical impacts.

ELIPTIC delivered not only the technical research results set out in the work plan, but it also achieved political success. One example is the ‘factor 100’ campaign – condensing research results to a clear and simple message which was even delivered on beer coasters: “Did you know that it takes 100 electric cars to achieve the impacts of one (18m) bus (but there is not 100 times the funding for electric buses)”. “Factor 100” was the starting point of an initiative from Bremen which called for a €100 million national funding programme for electric buses in Germany. In May 2017, the initiative was unanimously adopted by the German Conference of Ministers for Environment and in August 2017, the German government announced the funding programme, which allows the procurement of 400-500 e-buses per year in German cities starting in 2018.





GREENCHARGE

A zero emission transport system based on electric vehicles running on green energy

The overall objective of the GreenCharge project is to convincingly demonstrate how technological solutions and associated business models can be integrated and deployed to overcome barriers to wide-scale adoption of electric vehicles (EVs).

The project takes important steps towards achieving one of the dreams of a modern city: a zero-emission transport system based on electric vehicles running on green energy, while air pollution, traffic jams and parking problems become things of the past.

Electric motors may make the wheels go round, but money makes the world go round. GreenCharge is therefore devising and testing business models that encourage the use of electric vehicles and the sharing of energy resources, allowing all those involved to cooperate in an economically viable way.

GreenCharge is testing all of these innovations in three pilots in Barcelona, Bremen and Oslo. Together, these pilots cover a wide variety of factors: vehicle type (scooters, cars, bikes), ownership model (private, shared individual use), charging locations (private residences, workplaces, public spaces, transport hubs), energy management (using solar power, load balancing at one charging station or within a neighborhood, battery swapping), and charging support (booking, roaming, priority charging).



Coordinator EU Contribution Website



MEISTER

MEISTER

Mobility environmentally-friendly, integrated and economically sustainable through innovative electromobility recharging infrastructure and new business models

The three major barriers for the deployment of electric vehicles (EVs) in Europe – the high cost of vehicles, the low level of consumer acceptance, and the lack of recharging stations – form a vicious circle. The MEISTER project, funded by H2020 and formed by 11 partners from 4 EU countries, proposes to break this circle by designing, validating and promoting innovative business models to make it more attractive for operators to install charging infrastructure and for potential customers to use it.

MEISTER aims to change this market paradigm by delivering a set of tools to foster e-mobility large scale adoption by:

- Demonstrating innovative, sustainable business models to lower installation and operation costs of charging infrastructure
- Optimising usage of infrastructure by the smart combination of charging and parking services
- Integrating EVs within Sustainable Urban Mobility Plans (SUMP)
- Providing interoperable platforms and services to users for an easy, convenient and barrier-free access to charging, billing and smart grid services, including an increase of the use of renewable energy systems (RES) and self-generation to power EVs.

These solutions will be tested and validated in 3 urban areas: Malaga (Spain), Berlin (Germany), and Gothenburg (Sweden). The MEISTER pilots will involve 51,500 users, 1,000 EVs and 660 charging points.

The MEISTER approach can be transferred to cities across the EU. It expects to increase the EVs demand by 15%, reduce the installation costs of charging points by 20%, help reduce charging prices by 20%, increase by 30% the usage of RES to charge EVs, and reduce the CO2 emissions in 199,750 Tons



Coordinator EU Contribution Website

Topic: Electric mobility in cities



ELVITEN

Electrified L-Category vehicles integrated into transport and electricity networks

ELVITEN familiarises users with light electric vehicles (EL-Vs). The project has designed and organised one-year long demonstrations of electric bicycles, scooters, tricycles and quadricycles in six European cities: Trikala, Berlin, Malaga, Genoa, Bari and Rome. The vehicles are available for commuting and leisure trips by private users and for delivery of light goods.

A variety of tools has been developed to support and motivate users to use EL-Vs instead of fossil fuel vehicles. These include the Digital Coach app, which advises about driving behaviour, the Booking app, that allows users to book vehicles and charging points, the Incentive app, to collect usage points and earn awards, and the Serious game app, that provides useful information about the advantages of using EL-Vs.

The project collects logs of trips done with EL-Vs, and traces usage and users' experiences and opinions after their trips based on the apps and services. The analysis of the collected data will result in guidelines for service providers, planning authorities and vehicle manufacturers to improve the integration of EL-Vs in the transport and electricity networks.



01/11/2017

INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS

€7,840,649

<https://www.elviten-project.eu/en/>

Coordinator EU Contribution Website

31/10/2020

Topic: Electric mobility in cities



STEVE

Smart-tailored L-Category electric vehicle demonstration in heterogeneous urban use-cases

STEVE is developed as a stepping stone towards a vision of future mobility that provides sustainable, seamless, automated and personalised travel on demand.

STEVE combines the forces of 21 partners from 7 European countries, coordinated by Infineon Austria, with a total budget of € 9.5 million.

Understanding how a city's mobility system should evolve is complex. The STEVE project intends to maximise the impact of the demonstrations in different European cities, generate vital data for the next generation of EL-Vs, and support the mind-shift necessary for a successful integration of EL-Vs in the urban transport system.

STEVE will run four demonstrations in four different STEVE cities: Turin and Venaria in Italy, Villach in Austria and Calvià in Spain. In each city, well-defined target groups (ageing urban population, tourists, commuters, students...) will be involved to test either the STEVE(JAC) EL-V quadricycle (seen in the picture) or other forms of EL-Vs, mainly, e-bikes.

Since each city has a different focus and differs in its objectives, a common methodology framework, which covers these prerequisites, will be established. The Assessment Plan will inherit concepts from established methods (e.g., the FESTA and AMITRAN methodologies) and other EC projects (e.g.,

SilverStream), to derive a common method tailored to the objectives and needs of STEVE.

The STEVE demonstration activities will be based on a stepwise approach in order to realise its set of objectives. Two iterations are foreseen to learn from the experiments and apply the corrective actions along the course of the project. The scientific and technical objectives, as well as the specific objectives of the STEVE cities, affect different impact categories, namely environment, user behaviour and mobility.

01/11/2017

INFINEON TECHNOLOGIES AUSTRIA AG

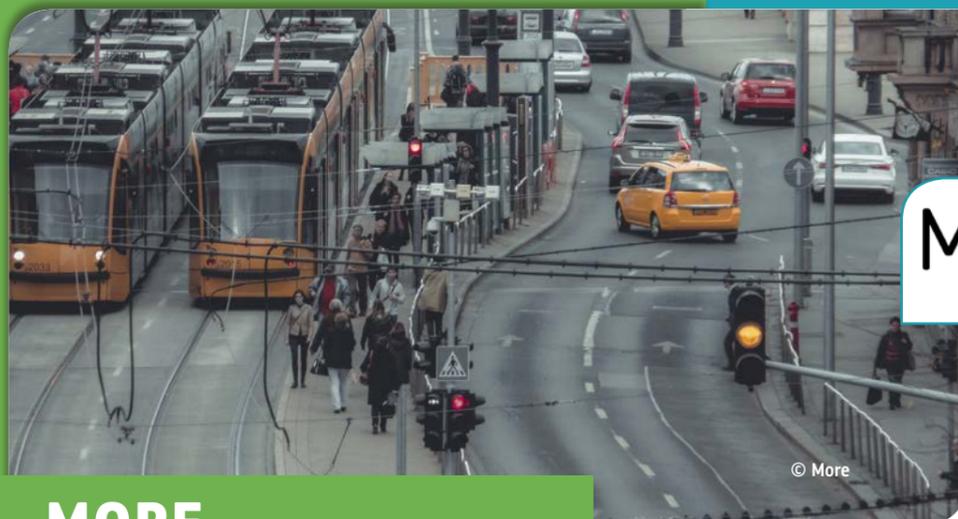
€9,517,870

<http://www.steve-project.eu/>

Coordinator EU Contribution Website

31/10/2020

Topic: New technologies and services, innovative infrastructure



MORE
Multimodal Optimisation
of Roadspace in Europe

MORE

Multi-modal optimisation of road-space in Europe

The MORE project examines the challenges faced by main roads in cities that feed into the European road transport network, resulting from the many competing demands on their limited road space and capacity. It looks into how these might be better addressed through improved planning, design, operation and management. These demands come from 'Link' users (people in various methods of transport that are travelling along these corridors to reach other areas) and 'Place' users (people who live in, work in or visit buildings alongside the street, or who engage in social and economic activities on the footways).

MORE is examining current – and future – user needs and conflicts on selected main roads in five European cities (Budapest, Constanta, Lisbon, London and Malmo), and how these might be addressed more comprehensively and imaginatively.

It is developing four tools:

- Methods to help develop more innovative design options
- Enhanced tools for public engagement in identifying problems and developing new street designs
- Improved modelling tools to simulate how street movements and activities are influenced by different designs
- Enhanced methods to assess alternative design

options and to decide what are the best solutions in particular contexts.

MORE is taking a very broad and comprehensive approach. It is treating the whole street as a complex 'eco-system' and looking at how better outcomes could be achieved by dynamically managing the use of road and kerb-space, or using electronic road signs and markings.



Coordinator EU Contribution Website

Topic: New technologies and services, innovative infrastructure



MaaS4EU

MAAS4EU

End-to-End approach for Mobility-as-a-Service (MaaS) tools, business models, enabling framework and evidence for European seamless mobility

The main goal of MaaS4EU is to provide quantifiable evidence, frameworks and tools to enable the MaaS concept, by addressing challenges under four pillars:

- Business: MaaS4EU designs prototype business models for a cross-company MaaS enterprise involving multiple actors within the EU single market
- End-Users: MaaS4EU explores the needs, preferences, demand and acceptance of various end-user groups for MaaS services and products via MaaS living labs and real-life demonstrations
- Technology & Data: MaaS4EU designs and develops an open platform. Any Mobility Service Provider could use the platform to test, develop and scale its services
- Policy: MaaS4EU proposes the required "MaaS Policy Framework" providing guidelines for a co-operative transport ecosystem of MaaS across Europe.

The impact of MaaS services on end-users' short-term (activity patterns) and mid-term (car-ownership) travel choices are monitored and evaluated to provide feedback to authorities about the advantages and disadvantages of the concept.

MaaS4EU designs prototype business models involving multiple actors within the EU single market (Public and Private mobility service providers, Payment and security platforms, and People).

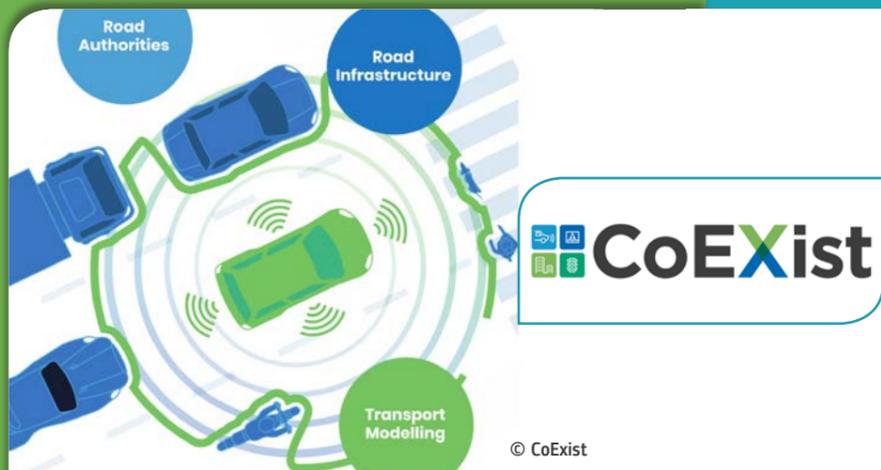
MaaS4EU also supports travellers in selecting the mobility plans that best fit their needs considering the modes included in their MaaS purchased services, their daily activities, the real-time availability of the different services, and overall environmental impact.

The holistic MaaS4EU solutions are demonstrated and validated in real life via Living Labs at three pilot areas (Greater Manchester, Greater Luxembourg, Budapest).



Coordinator EU Contribution Website

Topic: New technologies and services, innovative infrastructure



CoEXIST

'AV-Ready' transport models and road infrastructure for the coexistence of automated and conventional vehicles

Connected and automated driving (CAD) will have significant impacts on most transport and urban planning related activities of a city. To ensure that the roll out of connected and automated vehicles (CAVs) is in line with sustainable urban mobility goals, local authorities will have to play a key role and should take the lead with proactive planning approaches.

The mission of CoEXIST is to systematically strengthen the capacities of road authorities and other urban mobility stakeholders in preparation for the transition towards a shared road network, with an increasing share of connected and automated vehicles at progressively higher automation levels.

Following a trans-disciplinary approach, CoEXIST has developed an automation-ready framework to support local authorities in reducing uncertainties and building up their capacity to make structured and informed decisions about CAV deployment in a mixed road environment.

The project has developed functionalities for microscopic and macroscopic modelling tools, enabling them to consider different types of CAVs. Through their application in eight strategically selected user cases in Helmond (Netherlands), Milton Keynes (United Kingdom), Gothenburg (Sweden) and Stuttgart (Germany), CoEXIST will assess to what extent road infrastructure is automation-ready and

whether the introduction of CAVs improves traffic performance, space efficiency, and safety.

This will help identify adaptation and design recommendations, towards an optimal exploitation of the potential benefits of CAD in urban mobility.



Topic: New technologies and services, innovative infrastructure



GECKO

Developing regulatory frameworks and governance models for the transition to a new mobility

GECKO's overall goal is to provide authorities with tools and recommendations for new regulatory frameworks to lead the transition to the new mobility era of cooperative, inclusive, competitive, sustainable and interconnected mobility across all modes.

The project has six objectives:

- Provide a comprehensive and coherent picture of disruptive technologies, new mobility services and business models that are currently available or will be available in the future (up to 2040)
- Review and map regulatory policies and governance models
- Assess and monitor the necessary characteristics and requirements of regulatory schemes and governance levels which are deemed necessary to accommodate disruptive mobility solutions
- Provide recommendations to policy makers
- Establish channels for consultation, communication, co-operation and collaboration among stakeholders to co-design regulatory approaches
- Disseminate the GECKO findings and tools.

GECKO will develop three products that will support authorities in creating the most appropriate regulatory framework and governance model. The Knowledge Bank will present a state of play on innovation and new mobility services, while the Regulatory Frameworks Dashboard will assess the economic,

technological and social impacts of disruptive technologies and business models on regulatory and governance frameworks. Finally, a Compliance Map will visualise the results of the Dashboard using a set of case studies.

GECKO will allow for the effective introduction of innovative new mobility technologies and business models, while at the same time safeguarding an adequate level of security, safety, data privacy, and social protection.



CIVITAS ECCENTRIC



Innovative solutions for sustainable mobility for people in suburban city districts and emission of free freight logistics in urban centres

Within CIVITAS ECCENTRIC, the cities of Madrid, Stockholm, Munich, Turku and Ruse are working together to overcome challenges related to mobility in suburban districts and achieving city logistics that are clean, silent, and CO₂ emission-free - two important areas that have historically received less attention in urban mobility policies. European cities have created liveable and attractive city centres, but there remains a conflict between providing high-quality public space and meeting the accessibility requirements of freight deliveries. Higher car usage in suburban areas also represents an issue that has gone largely unsolved.

To address this situation, CIVITAS ECCENTRIC has demonstrated the potential and replicability of 50 new mobility solutions in five "Living Lab" areas in close partnership with the private sector. The measures have been divided into six thematic work packages, which are:

- Inclusive urban planning, new parking policies and mobility management
- Mobility as a Service
- Enabling safe walking and cycling
- Efficient and clean public transport solutions
- Promoting the uptake of clean vehicles
- Towards better and cleaner urban freight logistics.



All the ECCENTRIC measures have been closely described in factsheets, which are available on the CIVITAS website and which include information on solutions, expected results and business models. The factsheets will be revised by the end of 2019, once the evaluation of the measures is done and the real impact of each new solution can be confirmed. The factsheets and other promotional material have been distributed in dozens of local, national and international mobility events, creating interest towards the new solutions and sustainable mobility in general.

At the end of project in spring 2020, a reader-friendly final report will be published including presentations of the cities and their measures. The report will be available in English, German, Spanish, Bulgarian and Finnish.

During the project, several cities have been recruited to follow and later also to replicate the actions of the CIVITAS ECCENTRIC cities. The follower cities are closely engaged in the project activities, regularly attending technical site visits, workshops, and webinars to understand how the ECCENTRIC measures could work for their city too. Cities such as Budapest, Granollers and Uppsala have joined the group of about 20.

During the last year of the project in 2020 replication

packages will be produced including all the essential information to support implementation of these new mobility solutions in any city.

Even though the project is in progress until autumn 2020, some common drivers and barriers have already been identified by the project partners.

The drivers are:

- Alignment with policies and objectives
- High visibility through communication
- Pressure from public opinion
- Economic incentives
- Existing networks and infrastructure

The barriers are:

- Issues with land ownership and allocation
- Rapidly changing landscape of mobility services/options/supply
- High segmentation of users/needs/preferences/capacities
- Lack of political support
- Long-term financing.



CIVITAS PORTIS



PORT-cities: integrating sustainability

STAD ANTWERPEN

€16,376,775

<https://civitas.eu/portis>

01/09/2016

31/08/2020

Coordinator

EU Contribution

Website

Port cities deal with some unique challenges, from getting cruise ship passengers to the city center, to routing truck traffic, to docking ships. Given their multi-modal nature – road, air, rail and sea – they are the perfect place to try out new solutions encompassing all aspects of mobility.

CIVITAS PORTIS is implementing a number of initiatives in five geographically, culturally and climatically diverse port cities in Europe, located on the North Sea (Aberdeen and Antwerp), the Mediterranean Sea (Trieste), the Black Sea (Constanta), and the Baltic Sea (Klaipeda), as well as in a follower port city in China (Ningbo).

The five living laboratories are testing 49 innovative mobility solutions ranging from newly-emerging technologies to policy-based and soft measures in four areas: better city-port cooperation; healthier and more sustainable port cities; integrated, clean mobility systems; and more efficient freight transport.

The living laboratories are not the only ones who will benefit from these measures: CIVITAS PORTIS helps cities work together to generate and build innovation, while assessing how effective their efforts are. It transfers the most useful innovations to other port cities and marketplaces. The brand new second edition of the CIVITAS PORTIS innovation brochure is available for download on the CIVITAS PORTIS website.



All images © CIVITAS PORTIS

Topic: CIVITAS demonstration projects

Project Highlight

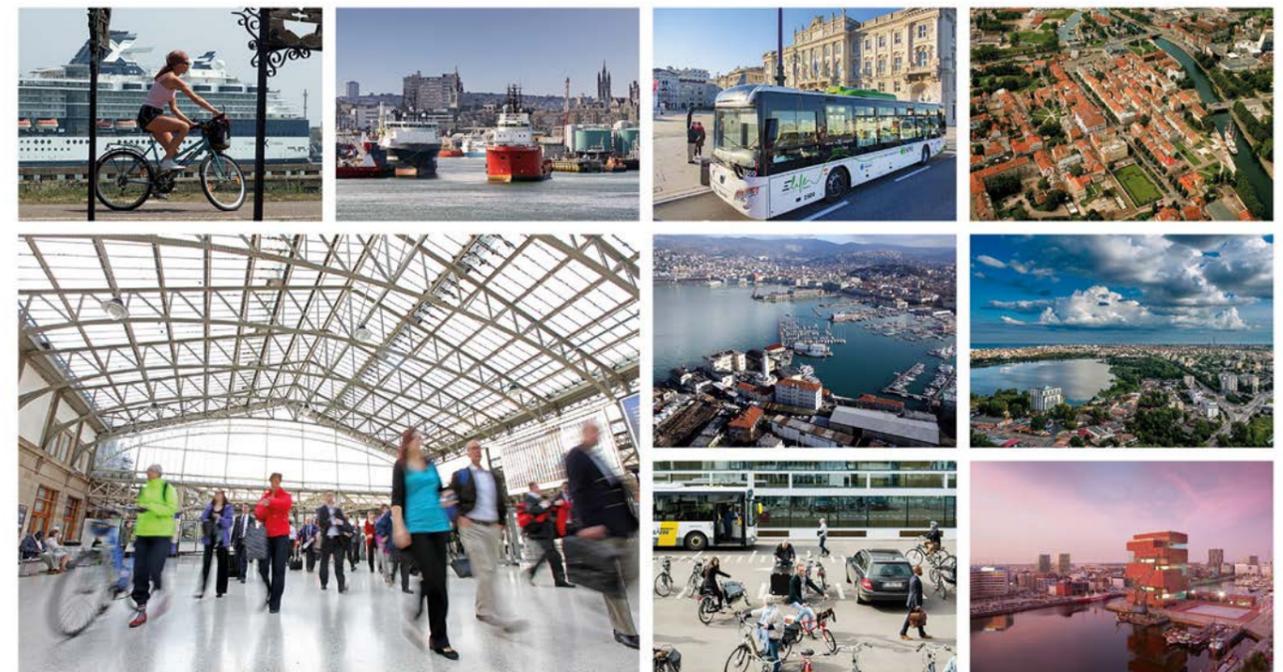


CIVITAS PORTIS has already brought about some significant changes with consistent gains for public transport, walking and cycling in all cities' living laboratories.

The umbrella brand, «Smart Ways to Antwerp», involves a huge number of partners and stakeholders working together to create a shift towards sustainable mobility, aimed at informing, raising awareness, supporting the development of innovative mobility solutions and achieving behavioural change. In Aberdeen, the way people approach travelling in and around the city has been re-defined and road space for collective and active travel modes has been recovered. Trieste is developing a sustainable urban mobility plan, centered on new opportunities arising from the recent incorporation of the «Porto Vecchio» area, a city within the city.

Real civic involvement and participation in the field of sustainable mobility has been set up in Constanta, while in Klaipeda, the transport system has been improved and alternative transport modes have been promoted. All of the measures implemented thus far are already having positive effects on the modal split of the cities involved.

Thanks to improved mobility and the re-development of public spaces, CIVITAS PORTIS will also contribute significantly to employment opportunities and economic growth in the ports and their surrounding areas. The living laboratory areas are expected to attract more than 300 new businesses and at least 3,300 new jobs.



CIVITAS DESTINATIONS



Innovative and holistic mobility solutions for (island) touristic destinations

CIVITAS DESTINATIONS is a four-year CIVITAS Innovative Actions project. Its main aim is the integration of sustainable tourism and mobility strategies to respond to travellers' and residents' needs, provide high quality and sustainable environments, and support economic development. In total, a series of 80 innovative measures and solutions are being tested in six European insular regions that experience a significant influx of tourists, resulting in great pressure on the transport systems of their islands.

Madeira (Portugal)

The Action Plan for Sustainable Mobility was approved, with the cooperation of local municipalities and stakeholders from the tourism and transport sectors. Systems to improve the mobility planning are being tested. New commercial campaigns were developed to increase the use of public transport, by both tourists and residents.

Valletta (Malta)

Malta's Local Councils worked together in the SUMP development, with a competition to propose measures for more sustainable mobility. A Green Mobility Award is being tested to encourage travel operators to implement sustainable mobility measures with their guests, employees and the general public. E-bike and car sharing are being promoted.

Limassol (Cyprus)

The cycling and walking networks were expanded, bicycle parking facilities added, routes created or adapted, and map panels and signage installed. A new law to regulate the safety of cycling was approved and enforced by Parliament. Sheltered EV (electric vehicle) charging stations have been installed in order to promote electric car sharing connecting Limassol-airports-ports.



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CIVITAS demonstration projects

Project Highlight



Elba (Italy)

The implementation of the Elba shared mobility agency addresses the transport needs of residents and tourists, coordinating different shared mobility services and integrating with the conventional public transport services. Moreover, a combined offer of "accommodation + mobility services" is now defined as an option available for Elba tourists.

Las Palmas de Gran Canaria (Spain)

The Bus Rapid Transit implementation is the backbone of a new commercial strategy to attract more tourists and citizens to public transport. A new 1-day and 3-day unlimited travel card for tourists was introduced with hoteliers' cooperation (besides the usual selling points, these passes can also be purchased at 8 collaborating hotels). The expansion of the city bike sharing system has led to a growing number of users (after one year of operation, over 24,000 users, 27% of them are foreign tourists).



Rethymno (Greece)

The first dockless e-bike sharing system was launched with 300 e-bikes available in the city to enhance sustainable mobility. The first municipal e-vehicle and the first electric mini-bus were introduced in Greece, as well as the first 3 public EV-chargers in Crete. Free of charge, they are promoting electromobility, and leading the way for other Greek cities.



Topic: Smart Cities and Communities Living Labs



IRIS

Integrated and replicable solutions for co-creation in sustainable cities

IRIS aims to integrate and demonstrate smart solutions in urban environments in order to promote sustainability and co-creation in European cities. The project supports the Lighthouse cities of Utrecht (Netherlands), Göteborg (Sweden) and Nice Côte d'Azur (France) and their Follower cities Vaasa (Finland), Alexandroupolis (Greece), Santa Cruz de Tenerife (Spain), and Focsani (Romania) to address their urgent need to deliver energy and mobility services that are cheaper, better accessible, reliable, and contribute to a better and more sustainable quality of urban life.

The integrated solutions are a successful blend of social innovation, engineering and ICT excellence which connect the interests of many different stakeholders in innovative business models. This allows for upscale and replication to develop sustainable cities across Europe and world-wide. For this purpose IRIS is organised around 5 key challenges, referred as Transition Tracks, focusing on (i) Energy Positive Districts, (ii) Smart Energy Management, (iii) Smart e-Mobility, (iv) a digital integrated City Innovation Platform and (v) Citizen engagement and co-creation.

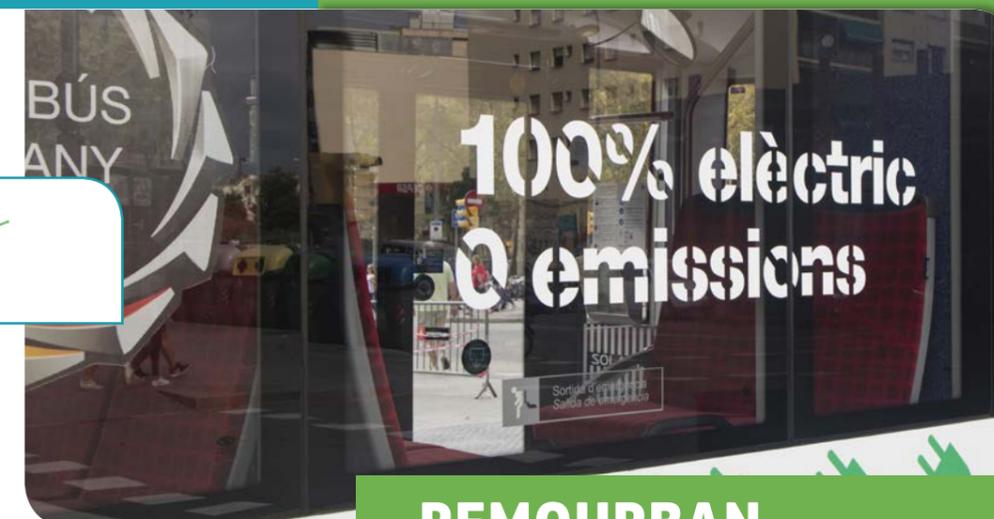
The project's goal is to unlock the intelligence of communities in order to adopt sustainable energy, mobility and ICT practices. The expected impacts of IRIS are an open innovation ecosystem motivating

citizens to participate in; more effective urban planning and governance of integrated solutions; the exploitation of validated innovative business models based on multi-stakeholder collaboration; more stable, secure and affordable energy and mobility services for citizens, as well as an improved air quality.



Coordinator EU Contribution Website

Topic: Smart Cities and Communities Living Labs



REMOURBAN

Regeneration model for accelerating the smart URBAN transformation

REMOURBAN is a 5-year EU-funded project aimed at designing and validating a sustainable urban regeneration model in the Lighthouse cities of Nottingham (United Kingdom), Valladolid (Spain) and Tepebaşı/Eskişehir (Turkey) combining actions in the fields of energy, mobility and ICT.

Sustainable mobility is one of the pillars of the REMOURBAN project. Actions in the Lighthouse cities include the adoption of clean energy for vehicles, the improvement of transport infrastructure and the reduction of energy consumption and CO2 emissions.

The cities of Nottingham, Valladolid and Tepebaşı increased the number of electric buses on their bus network and invested in enhancing the charging infrastructure for public and private electric vehicles. With nearly 60 electric buses, 13 of them obtained with the help of REMOURBAN, Nottingham is now one of the cities with the largest electric bus fleet in Europe. The city also started an e-vehicle based last mile delivery service. Valladolid added to its public fleet 5 public e-buses and 2 municipal car-sharing e-vehicles, while 45 new private e-vehicles have been deployed for city services, taxis and last mile delivery, saving 74,842 tons of CO2 emissions in 2018. Tepebaşı included 4 new e-buses and implemented a new e-bike infrastructure that now counts 30 e-bikes and 45 charging stations.

All mobility actions deployed in REMOURBAN are supported by ICT, with smart applications and monitoring devices



Coordinator EU Contribution Website

Topic: CEF Urban Nodes



POSTLowCIT

Low-noise and low-carbon freight delivery for postal operators to ensure last mile connections through optimised urban and long distance transport

The overall objective of this Action is the development of an efficient urban freight delivery service for Correos – the Spanish universal postal operator – by using alternative energy vehicles. The overall aim is to contribute to the reduction of pollutant emissions, mainly CO₂ and NO_x, and the noise associated with urban and long-distance traffic.

The Action consists of a feasibility study to draw an Action Plan towards 2030, which includes the development of a distribution control system to ensure smooth last mile connections. This is accompanied by the deployment of electric vehicles and softer modes in urban areas, and vehicles powered by gas for long distance transport between urban nodes.

The Action will be implemented in four main urban nodes within the Mediterranean corridor in Spain, namely, Madrid, Barcelona, Sevilla and Valencia.



Coordinator EU Contribution Website

Topic: CEF Urban Nodes



MI2

Mobilité Intégrée pour l'Ile-de-France

Along the Paris TEN-T urban node, the Action is a pilot project whose objective is to enforce the policy of Ile-de-France Sustainable Mobility Authority (Syndicat des Transports d'Ile-de-France, STIF) to support multimodal traffic regulation and optimise road and public transport traffic management.

Activities will rely on various data sets (real-time, predictive data) using big data tools and contributing to the open data process. They will also rely on various tools to help users to choose the most appropriate transport mode.

These tools are developed by private stakeholders and gathered by a unique traveller information service, which will enrich the Ile de France mobility data portal in order to build the biggest source of mobility data in the world.

The following services are expected:

- Predictive multimodal navigator integrating dynamic carpooling and interconnection between personal devices and in-car system
- Urban Mobility advisor tool to help passengers in choosing the most convenient mode
- Mobility assessment tools to assess passengers and freight mobility public policies
- Transport network operation services to increase the efficiency of public transport management.



Coordinator EU Contribution Website

INEA

Making implementation happen

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