



Issue 1

1 November 2016

INTEGRATED CLIMATE FORCING AND AIR POLLUTION REDUCTION IN  
URBAN SYSTEMS

# ICARUS Newsletter

## Welcome letter



Dear friends,

### Welcome to the first newsletter of the ICARUS Project!

**ICARUS** stands for **I**ntegrated **C**limate forcing and **A**ir pollution **R**eduction in **U**rban **S**ystems, a 48-month research project started in May 2016 and funded with 6.5 million Euro by the European Union in the frame of the Horizon 2020 research programme. The ICARUS Consortium is made up of 18 institutions from 9 European countries.

**The main objective of ICARUS is to develop integrated tools and strategies for urban impact assessment in support of air quality and climate change governance in EU Member States**, leading to the design and implementation of appropriate abatement strategies to improve the air quality and reduce the carbon footprint in European cities. The project tools and methods will be demonstrated in 9 European cities of variable size selected carefully to represent the mix of urban settings around Europe and cover the whole spectrum of “green urban management” leading to smart, healthy and resilient cities. The key concept that makes

ICARUS stand out is the optimal combination of advanced technological innovations and citizen participation in our research seeking win-win solutions in our cities.

**The ICARUS newsletter will be published twice a year** in order to outline the project activities, disseminate our results and inform users about forthcoming events and other interesting pieces of information. Most importantly, we would like to encourage all interested parties to get engaged with the ICARUS local teams and co-innovate towards solutions that address climate change mitigation and air quality improvement taking into account socio-economic dynamics in the urban environment. We hope that you find this information useful, and we are looking forward to hearing your feedback.

**The ICARUS website is fully functional** and provides useful information on the activities of the project as well as an open forum for dialogue between the civic society and the scientific community.

**Visit our website at:**

<http://icarus2020.eu>

We are looking forward to making your voice matter in revamping our cities and combatting climate change!!

D. Sarigiannis  
Project Coordinator

A. Gotti  
Project Manager

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*“ICARUS is a visionary project that will employ state-of-the-art technologies and propose policy measures to*

*help public authorities develop green cities with clean air, close to zero or negative carbon footprint and maximal wellbeing for the future generations”, says Assoc. Prof. Denis Sarigiannis*

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## Project kick-off

The ICARUS project kicked off on 1, 2 & 3 June 2016 at a launch event & scientific workshop at the Research Dissemination Centre of the Aristotle University of Thessaloniki ([AUTH](#)). Assoc. Professor Denis Sarigiannis, Director of the Environmental Engineering Laboratory ([EnvE-Lab](#)) and Scientific Coordinator welcomed the project partners and marked the beginning of this ambitious 5-year project, a flagship European-funded project in the area of climate change mitigation and air pollution reduction.



The ICARUS kick-off scientific workshop was part of the [GREEN WEEK 2016](#), the biggest annual occasion to debate and discuss European environment policy.

## ICARUS & stakeholder engagement

**ICARUS is designed to develop a vision of smart and sustainable green cities**, seeking to minimize environmental, climate and health impacts in nine European cities of variable size. To this aim, engaging local communities and meeting policy makers and stakeholders is of utmost importance, in order to embrace state-of-the-art perceptions and vulnerabilities of decision makers, and establish interaction between researchers and

stakeholders in all aspects of research, implementation and dissemination.

Originating the strong role of community and city partners, Environmental Engineering Laboratory of Aristotle University of Thessaloniki ([EnvE-Lab](#), [AUTH](#)) – project coordinator, in cooperation with Athens Development and Destination Management Agency ([ADDMA](#)) and Resilient Athens are organizing the **1<sup>st</sup> Stakeholder Engagement Event**, in Athens on **3<sup>rd</sup> November 2016**, hosted by [Europe Direct](#). More than 100 national/regional/local stakeholders, policy makers & regulatory bodies, representatives from engineering & medical sector, industry & SMEs, academic and scientific community, NGOs, international organizations are expected to attend the workshop, while a wide dissemination approach was adopted by inviting an extensive list of local media and the press.

The **agenda** of the 1<sup>st</sup> Stakeholder Engagement Event includes an introduction to the ICARUS methodological framework, open discussion and introduction with stakeholders, routes to stakeholder engagement through various communication and dissemination channels, integration of the ICARUS methodology into local/regional/national action plans and policy framework as well as reference to and connection with the Resilient Cities concept. Key speakers are Project Principal Investigator, Assoc. Prof. Denis Sarigiannis ([AUTH](#)), Assist. Prof. Eleni Myrivili (University of Aegean), Chief Resilience Officer, City of Athens Council Member (Urban Sustainability) and Mr. Kostas Georgiou, Project Manager at Resilient Athens. Prof. Rainer Friedrich from University of Stuttgart along with Assoc. Prof. D.

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Sarigiannis will also present the benefits from the stakeholder engagement towards smart, green & healthy cities.

The event aims to exchange views and expertise with stakeholders and the community, initiating win-win strategies, designing policy solutions and promoting research activity that will contribute to reduce air pollution and mitigate climate change in urban systems.

Similar events will be organized in all 9 participating cities for identifying and integrating stakeholders to the ICARUS system. The Decision Support System (DSS) that will be developed during the project will encompass features and requirements customized to the needs of identified stakeholders. The ultimate goal is to inform citizens - in every participating city- about the impact of their life style and benefits caused by their actions, influencing their behavior towards health benefits, well-being and prosperity.

**For details, go to:**  
<http://icarus2020.eu/icarus-stakeholder-engagement-event/>.

## ICARUS at the International Society of Exposure Science 2016

**The use of Agent Based Modelling (ABM) in exposure assessment was thoroughly discussed at the [Annual Conference of the International Society of Exposure Science \(ISES\)](#) that took place from 9-13 October 2016 in Utrecht, the Netherlands. This is an international conference in the area of exposure to physical, chemical and biological agents that brings together experts and practitioners from academia, government, industry, and non-governmental organizations dedicated to the protection of health and environment.**

**The Environmental Engineering Laboratory (AUTH) gave two oral presentations that were well received and gained positive and fruitful feedback.** On October 11, Assoc. Prof. Denis Sarigiannis held a conceptual presentation on exploring and interpreting the exposome concept at the individual level using multi-sensor data fusion and ABM to capture behavioural determinants of exposure profiles.

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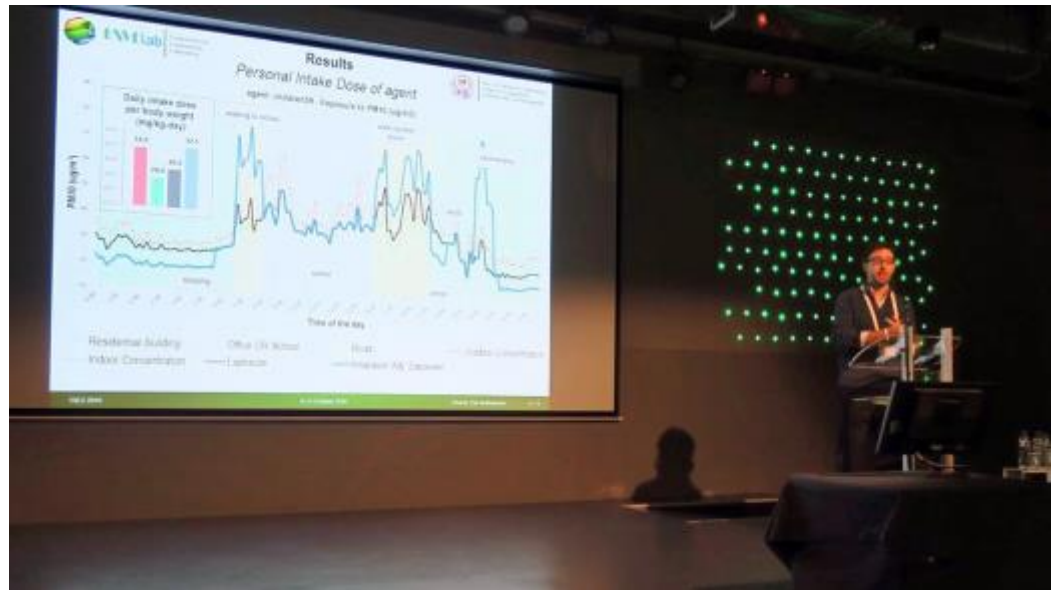
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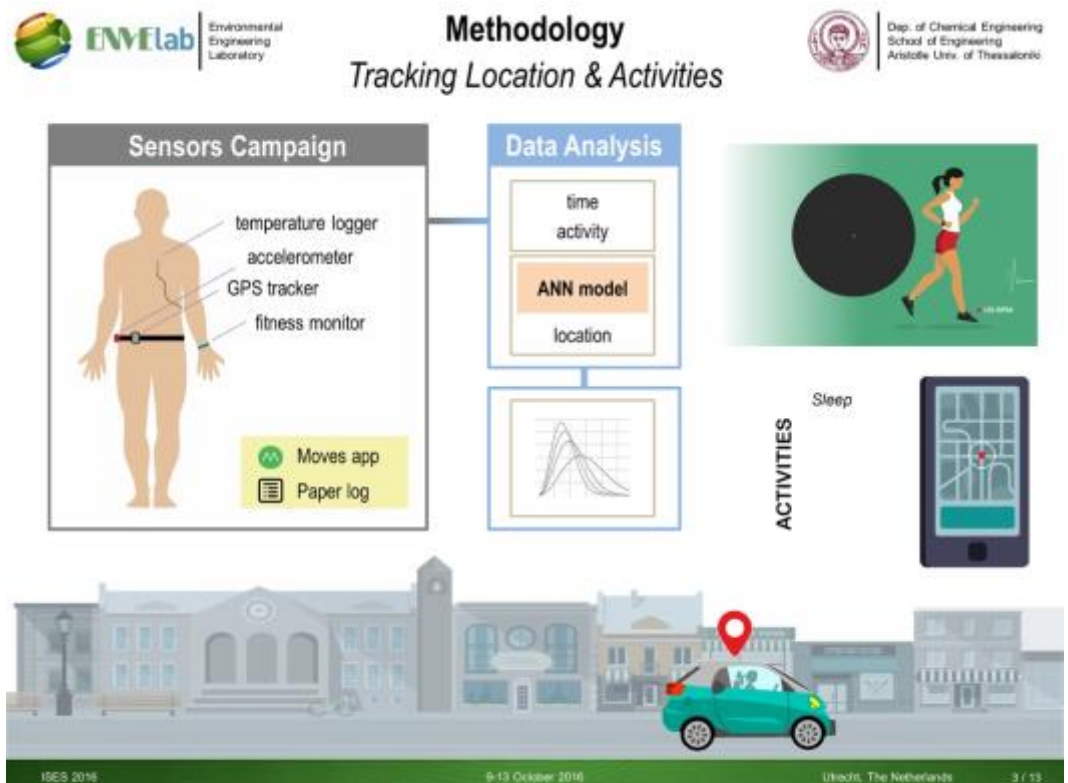
On October 13, Dimitris Chapizanis, PhD candidate (EnvE-Lab – AUTH) showcased the first results of the personal

exposure assessment model for the city of Thessaloniki, Greece, currently under development.



It was agreed that ABM proves to be a powerful tool for exposome research. It allows the derivation of statistically robust exposure estimates at the population level from a limited number of individual exposure profiles, while avoiding the inherent bias of probabilistic exposure modelling based

on Bayesian statistics. ABMs incorporate explicitly socio-economic determinants of exposure and support the enhanced use of multi-sensor systems for exposome characterization at high degree of granularity. **More about ISES 2016 and EnvE-Lab here:** <https://ises2016.org>.



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## ICARUS exploits synergies with two EU projects in air quality

The ICARUS project was invited at the Workshop “[Improving air-quality and carbon footprint in cities: Enhancing synergies among EU-funded R&I projects](#)” which was organized by DG Research & Innovation in collaboration with the Executive Agency for Small and Medium-Sized Enterprises (EASME), on 11 October 2016 in Brussels, as a side event of the European Week of Regions and Cities (10-13 October 2016). This year the [European Week of Regions and Cities](#) focused on the urban dimension of promoting a European Networking Platform for experts in regional and local development. Some of the topics discussed at the event were the exchange of good practices in economic development and social inclusion, cross-border cooperation, public-private partnerships, regional innovation and community-led local development.

The workshop aimed to enhance cooperation among the three (3) sister projects ([ICARUS](#), [CLAiR-CITY](#), [iSCAPE](#)), co-funded by Horizon 2020, and to create synergies and links with other relevant initiatives such as the [Partnership on Air Quality \(PAQ\)](#) of the [Urban Agenda of the EU](#).

Nearly 50 stakeholders from several Member States & City Authorities representatives, members of the Covenant of Mayors and officials from various General Directorates of the European Commission (DG REGIO, DG ENV, DG JRC, DG GROWTH) attended the event.

The ICARUS team was represented by the following participants:

- Dr. Alberto Gotti (AUTH) (representing the ICARUS Project Coordination)
- Prof. Luigi Manzo - EUC (scientific contact of the City of Milan/Pavia)
- Dr Thomas Maggos - NCSR (scientific contact of the City of Athens)
- Prof. Rainer Friedrich - USTUTT (scientific contact of the City of Stuttgart)
- Dr. Theodoros Nikolakopoulos - UPCOM (industrial partner - SME from Belgium)

During the morning session, Dr. Gotti (AUTH) on behalf of the ICARUS team, presented the ICARUS project, illustrating its main objective, the methodological framework and tools to be applied in order to identify and assess appropriate abatement strategies for improving the air quality and reducing the carbon footprint in nine European Cities.



In the afternoon round table sessions, the three sister (3) projects were extensively discussed and views were exchanged in order to enhance synergies and maximise the support from EASME. From the discussion emerged that reducing the carbon footprint and air quality in cities and urban areas is an extremely relevant hot topic between the projects and potential major synergies and mutual benefits were identified among the PAQ and the projects. The projects co-create

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knowledge with a number of local stakeholders and are currently developing specific tools to tackle carbon footprint and air pollution. Therefore, replicating and adopting innovative tools in cities and local authorities participating in the PAQ holds enormous potential. This will eventually maximize the impact of all 3 projects, while at the same time will give concrete assistance to the PAQ, supporting and enhancing its work. Moreover, mutual interest was expressed in keeping ‘alive’ the exchange of knowledge and the interaction between the PAQ and the Projects. To this aim, a future common event will be organized, as a follow up.

Although it appears too early for the identification of specific activities among projects, it is worth mentioning that possible synergies are feasible in terms of exploitation of results. In particular, exchange of information could be seen as

## ICARUS and MESAEP

ICARUS will hold a special session on solutions for climate change mitigation and air pollution reduction at the 2017 Symposium of the [Mediterranean Scientific Association of Environmental Protection \(MESAEP\)](#), which will be

a good start for creating complementary products that might mutually reinforce each project, rather than create competition. In this perspective, a specific service of the European Commission called Common Exploitation Booster is available, through dissemination and exploitation, for supporting these projects (<http://exploitation.meta-group.com/SitePages/default.aspx>).

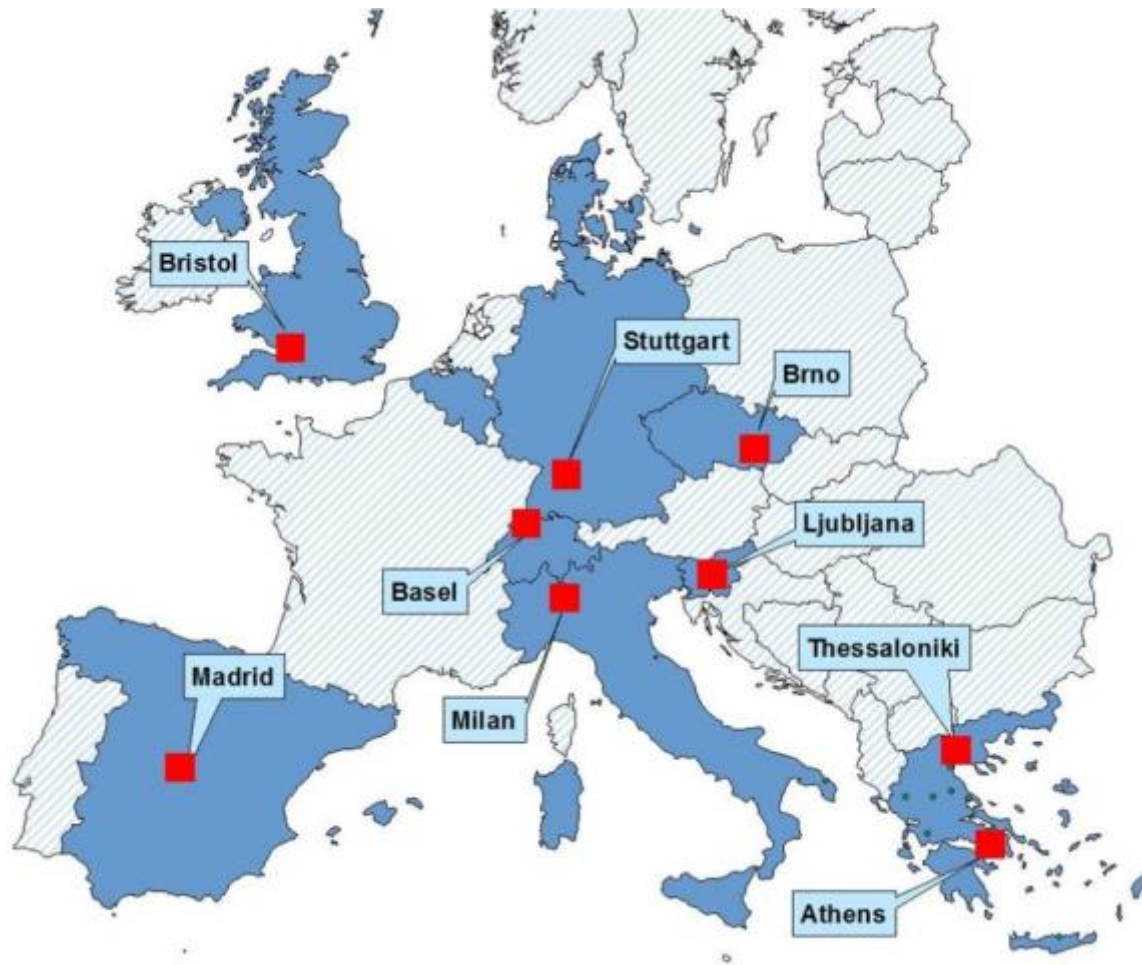
The closing discussion offered the opportunity for delegates to address further questions and discuss projects’ future plans. In general, all participants agreed that the meeting was a successful milestone in the ICARUS journey and the delegates left reinvigorated to meet the upcoming challenges.

held in Rome in September 2017. More news will be announced soon, so stay tuned for details on the date, venue, programme and registration! **Visit [www.mesaep.org](http://www.mesaep.org)**.



This project has received funding from the European Union’s H2020 Framework Programme under grant agreement No – 690105.

## ICARUS Participating Cities



The ICARUS methodology will be applied in nine European cities of variable size starting from relatively small (**Basel, Brno, Ljubljana**) to mid-size (**Stuttgart, Bristol, Thessaloniki**) to large cities (**Athens, Milan and Madrid**).

The ICARUS cities have been selected carefully to represent the mix of urban settings around Europe and cover the whole spectrum of “green urban management”. The selection was made also on geo-demographic criteria so that the variable socio-economic dynamics across the EU can be clearly captured and taken into account. All cities have ambitious plans to bring local government and the local communities together to start implementing a new vision of green city making them appropriate to demonstrate the ICARUS methodology.

## ICARUS Partners



ARTEMIS ENGINEERING  
CONSULTANTS AEROSURVEY



University of  
**BRISTOL**



**cmcc**  
Centro Euro-Mediterraneo  
sui Cambiamenti Climatici



**DEMOKRITOS**  
NATIONAL CENTER FOR SCIENTIFIC RESEARCH



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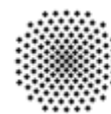


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**MESAEP**

Mediterranean Scientific Association  
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