

SMURBS

SMart URBan
Solutions
for air quality,
disasters and city
growth



AIR QUALITY



DISASTERS



URBAN GROWTH



MIGRATION



HEALTH



SOCIAL INEQUALITY



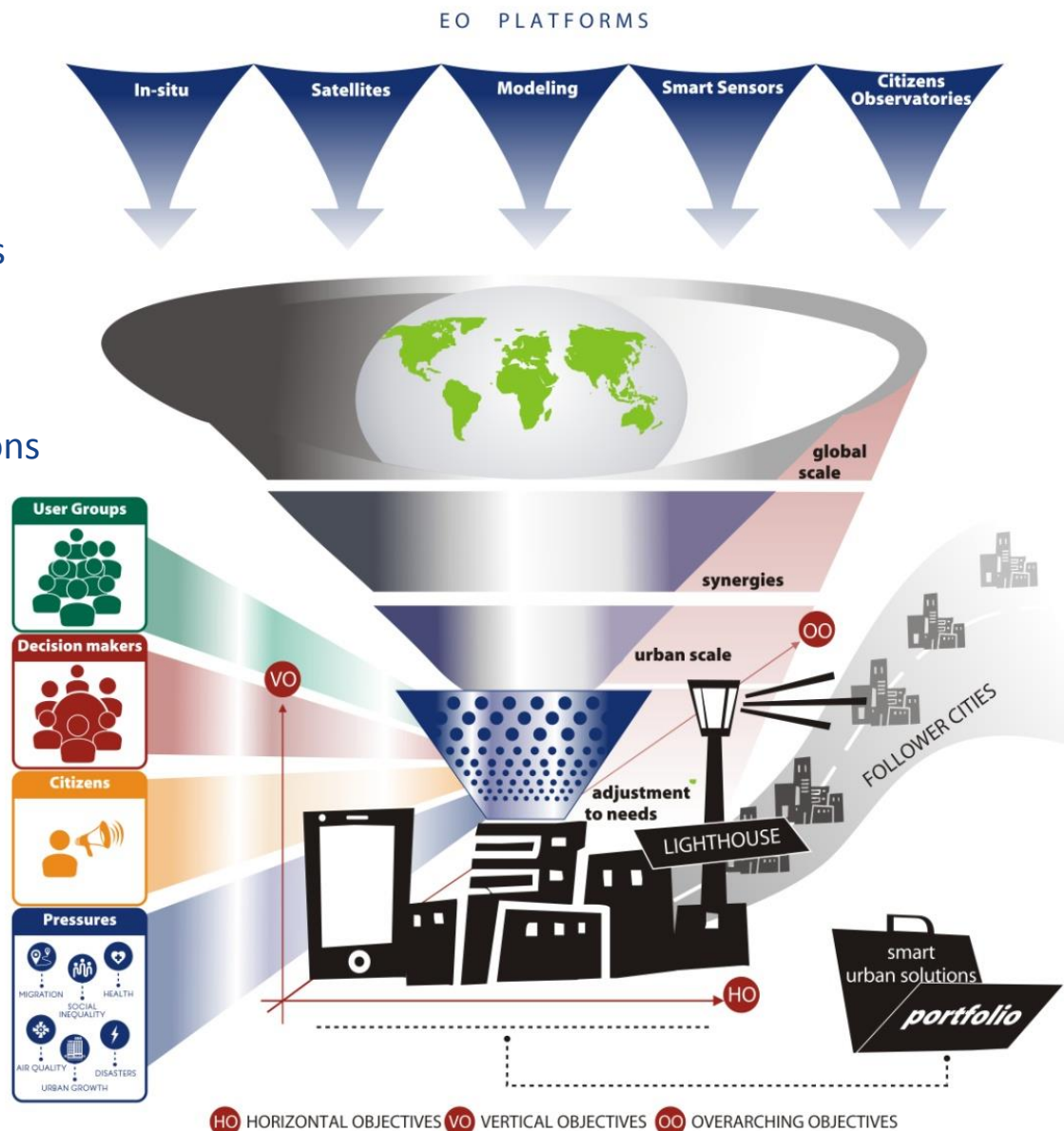
Wrap up & take home

Dr. Evangelos Gerasopoulos,
National Observatory of Athens (NOA), Greece



the concept

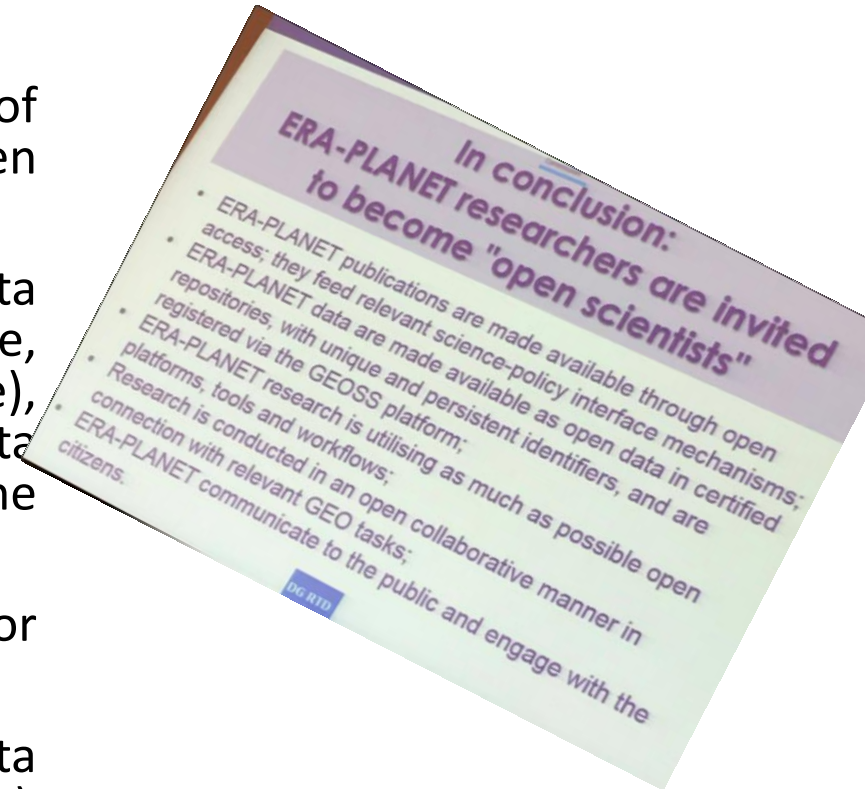
- develop synergies between EO platforms
- converge under the “smart city” banner
- take user needs on board
- tailor solutions to the thematic areas
- deliver a portfolio of smart urban solutions
- test and showcase in pilots
- let the followers amplify the impact



Feedback from kick-off: SMURBS proactivity & Take home messages

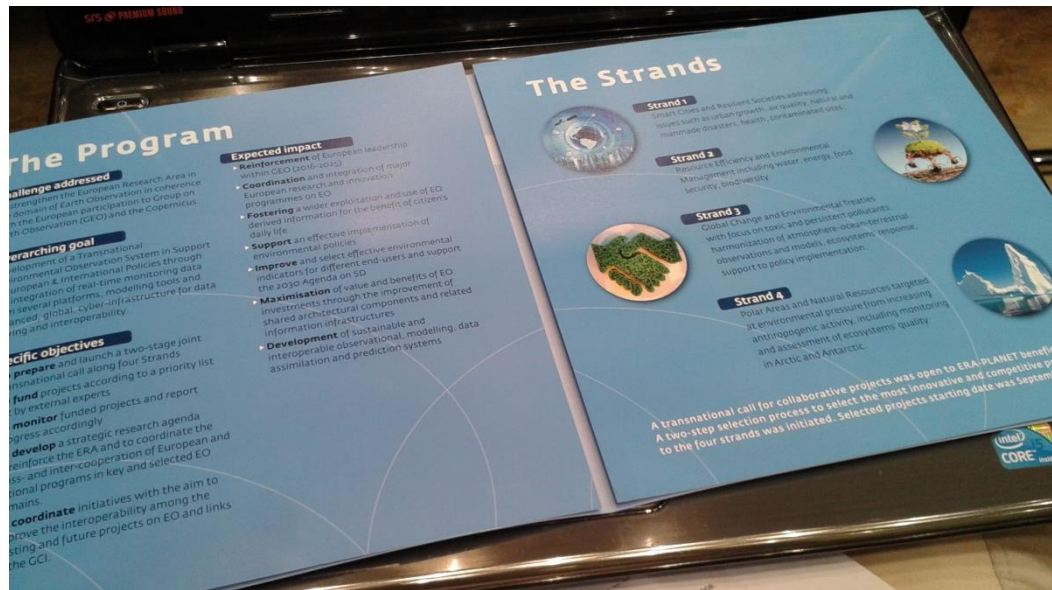
Open science/innovation

- Data Management **Plan** (handling, type of data, methodology/standards, open access, preservation)
- Alignment to **principles**: FAIR Data Management Principles (Findable, Accessible, Interoperable and Reusable), the GEOSS Data Sharing (DSP) and Data management (DMP) Principles and the INSPIRE Directive (2007/2/EC)
- Published/Links to **GCI/GEOSS** directly (or through regional data hubs)
- Availability under an Open Data Commons Open Database License (**ODbL**)
- Conformation to the **Horizon2020 Open Access** mandates, including Gold/Green Open



Exchange knowledge – links – collaborations

- Collaboration among ERA-PLANET strands

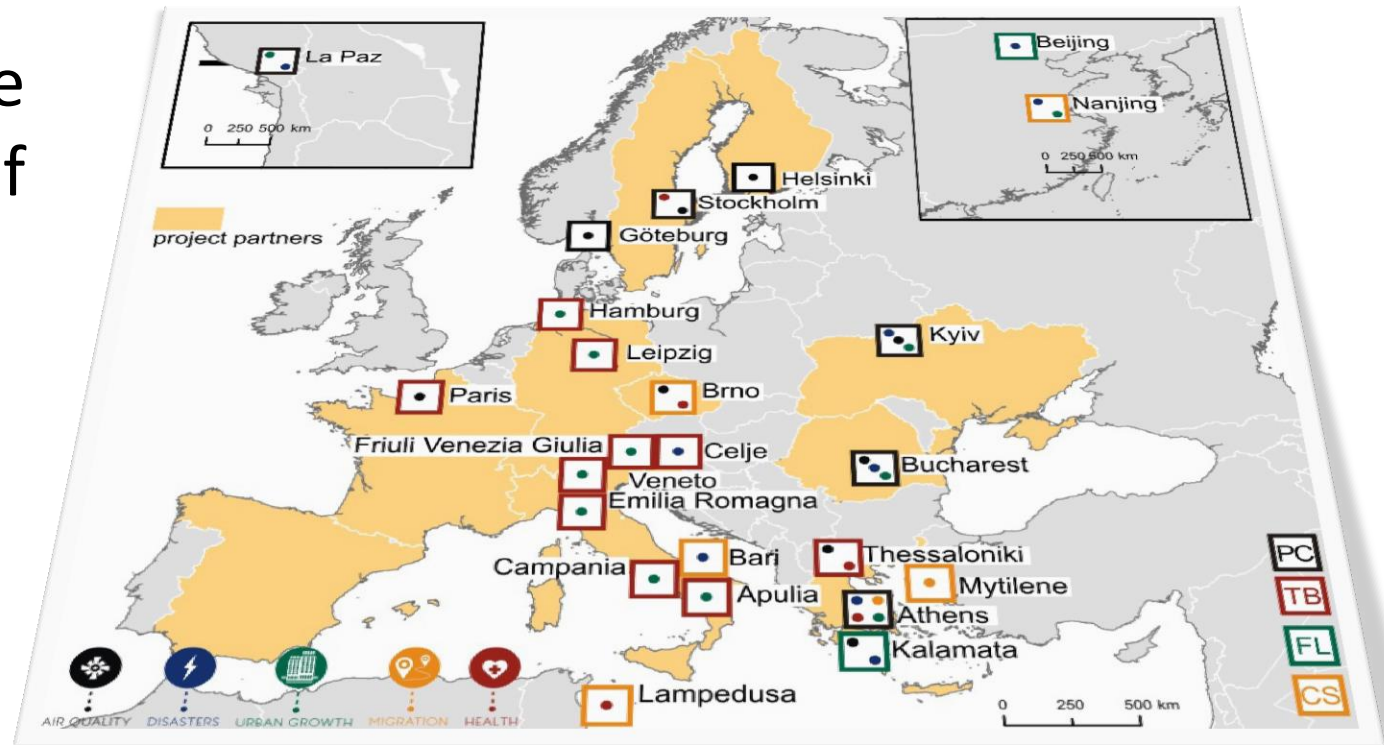


- Links to GEO-Essential: urban EVs

- iCUPE: urban settlements in the Arctic environments
- Not a plain replication: collaboration

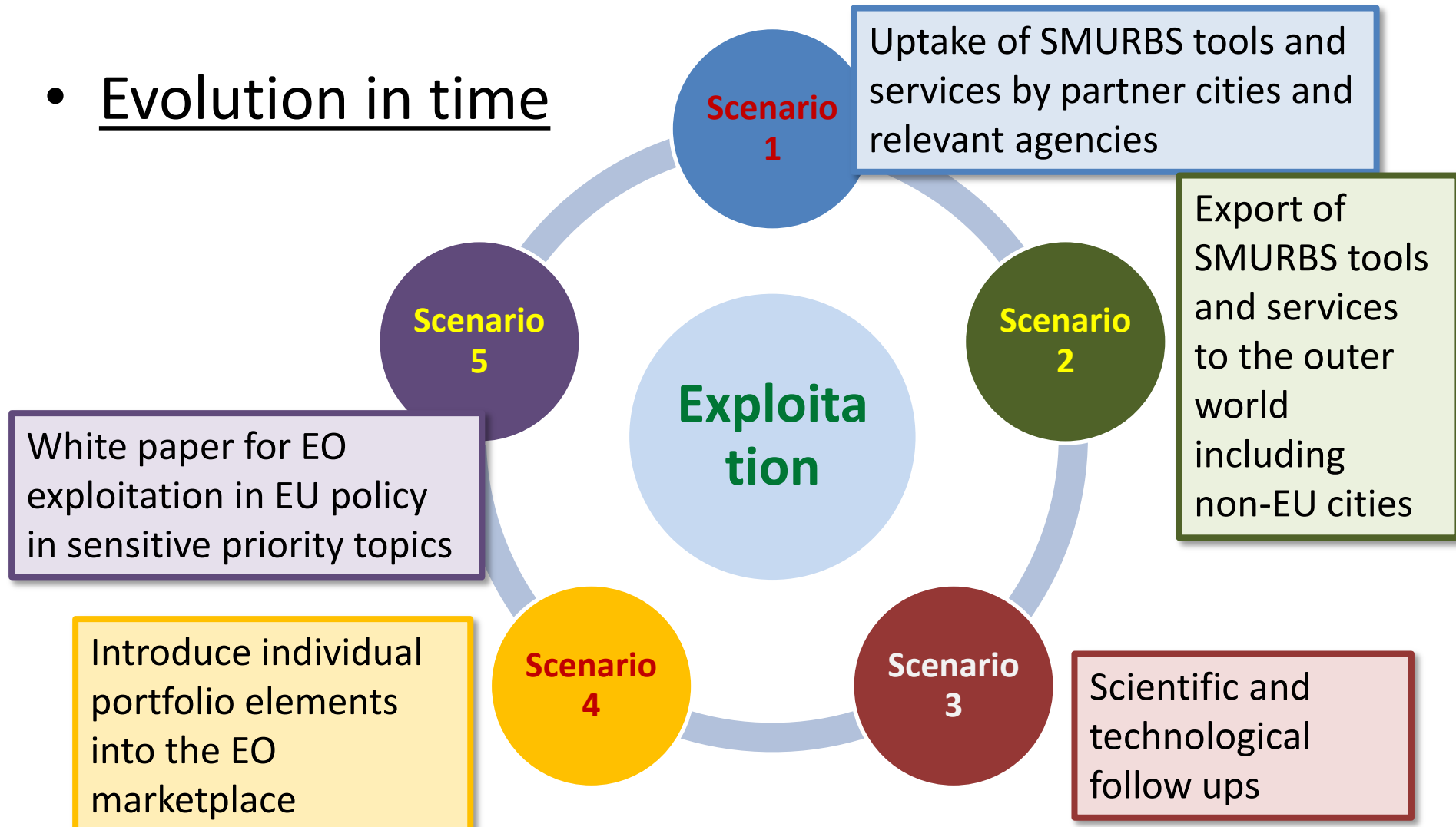
Smart-city network

- Flexibility-
Refinement
of the
network of
pilot
cities/imple-
mentations



Sustainability of SMURBS

- Evolution in time



Exchange knowledge – links – collaborations

- Uptake from <http://www.geoapi.org/> initiative.

GeoAPI

GeoAPI provides a set of Java language programming interfaces for geospatial applications.

The interfaces developed by the GeoAPI project include many of the data structures and manipulation methods needed for geographic information system applications. In a series of packages, GeoAPI 3.0 defines a core set of interfaces for metadata handling, for geodetic referencing, projection and conversion. The "pending" part of GeoAPI defines interfaces for the handling of georeferenced imagery, for the construction and manipulation of vector geometry and topological data structures, and for the description and use of geospatial "feature" entities. Beyond this core, GeoAPI-pending further defines interfaces for data access and storage including sophisticated filter queries, and for display.

The GeoAPI interfaces closely follow the abstract model and concrete specifications published collaboratively by the International Organization for Standardization (ISO) in its 19100 series of documents and the Open Geospatial Consortium (OGC) in its abstract and implementation specifications. GeoAPI provides an interpretation and adaptation of these standards to match the expectations of Java programmers. These standards provide GeoAPI with the richness which comes from the expertise of the specification writers. Clients benefit from the potential for inter-operability which comes from using a well defined, standardized data model. Implementors benefit from having a pre-defined set of well considered, formal boundaries to modularize their development work.

The GeoAPI interfaces provide a layer which separates client code, which would call the API, from library code, which implements the API. These interfaces are not an implementation. This follows a similar pattern to the well known JDBC API which provides a standardized interface to databases. Clients can use the JDBC API without concern for the particular implementation which they will use. Various groups have implemented different subsets of GeoAPI, see the [list of known implementations](#) for details.

GeoAPI provides also JUnit tests that implementors can use for testing their implementations, and various [examples](#) in the public domain.

- SMURBS looking at EuroGEOSS: “Innovation” to address fragmentation

City scale applications nested in the European domain

Paradigm:
Exploit ACTRIS
current
involvement for
QA/QC of the
COs data

ACTRIS Data Centre
- an atmospheric data portal

SEVENTH FRAMEWORK PROGRAMME

User Manual | About

HOME DATASETS PRODUCTS AEROCOM DOWNLOADS HELP files EMEP (13 files) EUSAAR (5 files)

Online analysis and plotting of ACTRIS data Data discovery and download across data archives

Variables [90] Only ACTRIS Variables: ☒

[ALL]
aerosol absorption coefficient
aerosol backscatter coefficient
aerosol backscatter coefficient hemispheric
aerosol extinction coefficient
aerosol optical depth
aerosol scattering coefficient
attenuation coefficient
benzene
butanal

Locations [52]

[ALL]
Alert
Annaberg-Buchholz
Appalachian State University, Boone (NC)
Aspvaeten
Barrow
Beo moussala
Birkenes
Birkenes II
Bondville

Database / Network [7]

[ALL]
ACTRIS-INSITU
CREATE
EMEP
EUCAARI
EUSAAR
GAW-WDCA
NILU-EBAS

Type [1]

[ALL]
insitu

Platform [1]

Matrix [4]

Kart Hybrid

North Atlantic Ocean

aerosol absorption coefficient

<http://actris.nilu.no>

Use WEB as a platform - EU open science cloud

<https://ec.europa.eu/research/openscience/index.cfm?pg=open-science-cloud>

European Open Science Cloud



19 April 2016

Giving a major boost to Open Science in Europe, the Commission today presented its blueprint for cloud-based services and world-class data infrastructure to ensure science, business and public services reap benefits of big data revolution.

By bolstering and interconnecting existing research infrastructure, the Commission plans to create a new European Open Science Cloud that will offer Europe's 1.7 million researchers and 70 million science and technology professionals a virtual environment to store, share and re-use their data across disciplines and

borders. This will be underpinned by the European Data Infrastructure, deploying the high-bandwidth networks, large scale storage facilities and super-computer capacity necessary to effectively access and process large datasets stored in the cloud.

Exploit DIAS platform

<http://www.diasjp.net/en/>



Data Integration and Analysis System Program

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[About](#)

[Data & Apps](#)

[Themes](#)

[Results](#)

[News](#)

History

[Home](#) > [About DIAS](#) > [History](#)

DIAS History of Development

Data Integration and Analysis System (DIAS) originated from global environment data repository in the 1980's lead by Late Prof. Mikio Takagi at the Institute of Industrial Science, The University of Tokyo. It has continued to develop with the support of numerous projects.

The phase I project of Data Integration and Analysis System (DIAS) launched in 2006, and a prototype was developed in 2010. This project established the world's first platform providing scientific information to evaluate the impact of climate change and plan its adaption measures on fields such as the water cycle and agriculture, which is based on the diverse and massive integrated data regarding earth observation, climate change prediction, etc.

Phase II started from 2011, with the name changed to the Data Integration & Analysis System Program (DIAS-P). During this phase, the further advancement and expansion of functionality were carried out to apply DIAS as a social and public infrastructure.

Phase III has been underway since 2016, as the Program to Promote the Development of Earth Environmental Information Platform. This project focuses on developing and operating the long-term stable system as a social platform with the aim of providing the service and operating the applications, which would help solve various social problems, including climate change adaptation and mitigation.

About DIAS

[About DIAS](#)

[System Infrastructure](#)

[Data Archive](#)

[Testimonials](#)

[About EDITORIA](#)

[Talent Development](#)

[History](#)

[Administration](#)

[Partners](#)

Exploit MyGEOSS

<http://digitalearthlab.jrc.ec.europa.eu/app/57752>

SenseEurAir



This app enables the general public (amateurs or professionals) to receive information about the quality of ambient air, and notifies them in case of an exceedance of pre-set pollution thresholds. It displays data from the air sensing networks that publish their data using Sensor Observation Services compliant with the INSPIRE Directive. SenseEurAir

MIGRATE – MIGRation pATterns in Europe



A Web-based gaming application to raise awareness about migration in Europe.

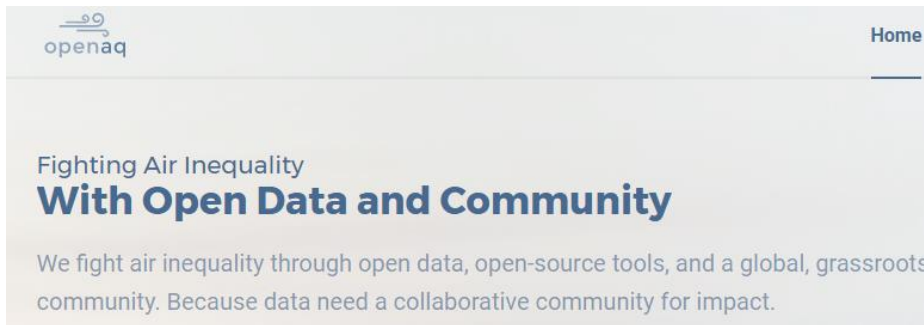
Atmos



A mobile app that combine sensor data about environmental pressure, temperature, luminosity and humidity levels with public to report on current meteorological conditions and make short term predictions.

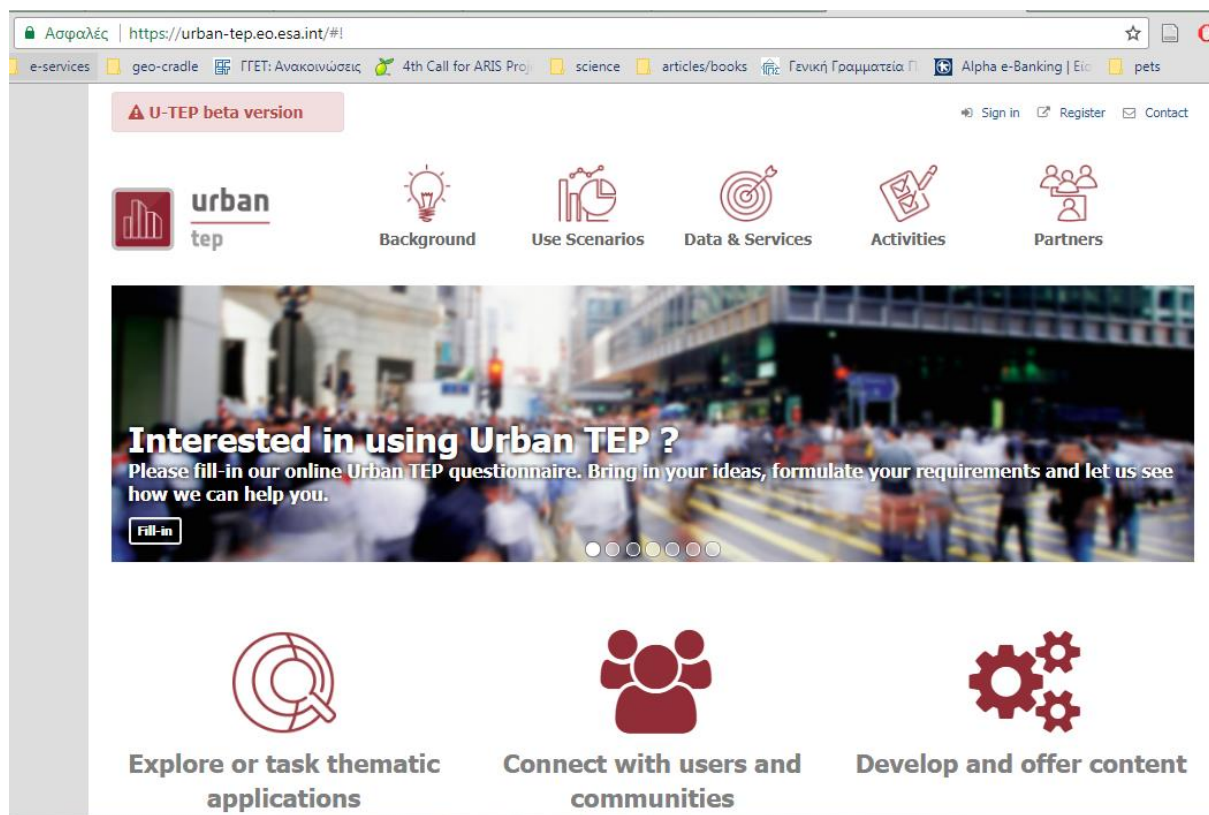
Links with relevant activities

- Link-Network with similar projects, initiatives, infrastructures e.g. Open_AQ, AIRNow, EO4SDG



Create links with ESA's urban TEP

<https://urban-tep.eo.esa.int/#!>



Keep up with GEOSS evolve



[Who we are ▶](#)
[What we do ▶](#)
[News ▶](#)
[Get Involved ▶](#)

GEO 2017-2019 Work Program

GEOSS-EVOLVE

Overview

Activi

Developing and sustaining the Global Earth Observation System of Systems (GEOSS) is critical to achieving the Mission and Vision of GEO. From the beginning GEOSS was conceived as a “system of systems”, a loose confederation of existing and future observation and data management systems supplementing but not supplanting their own mandates and governance arrangements. While the initial focus of GEOSS involved supporting nine Societal Benefit Areas (SBAs) of application, it was recognized that GEOSS should serve a broad range of global user communities including managers, policy makers, researchers, engineers, civil servants, governmental and non-governmental organizations in further application areas. The success of GEOSS depends on interoperability as a key principle among the different and autonomous systems so that the GEOSS can operate as a whole.

Much progress has been made during GEO’s first decade in developing a distributed infrastructure allowing discovery and access to millions of datasets, many of which follow the GEOSS Data Sharing Principles and are full and open access. This infrastructure

Maximise Impact

Dissemination

Communication

Exploitation

SMart URBan Solutions

AIR QUALITY DISASTERS URBAN GROWTH
MIGRATION HEALTH SOCIAL INEQUALITY

Tweet 43 Ακολουθεί 107 Ακόλουθοι 45 "Μου αρέσει" 8 Ακολουθείτε

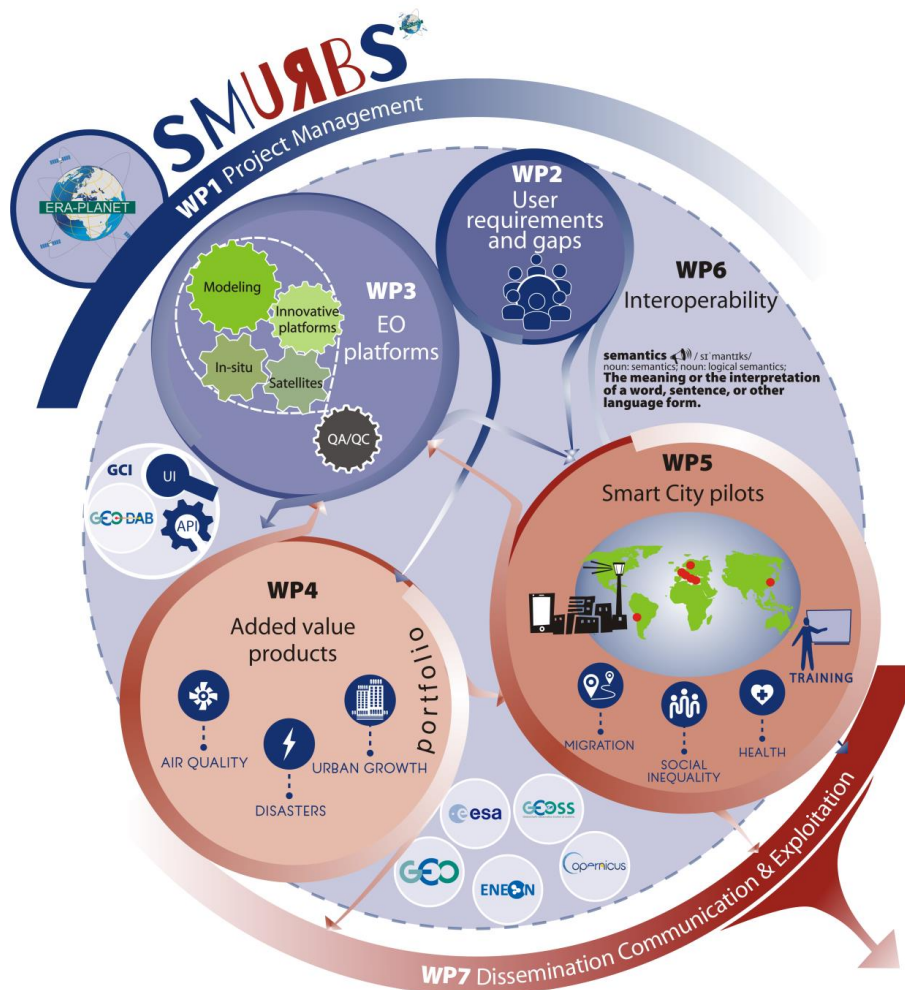
Smart cities initiatives

Twitter account Website (M4) Research Gate

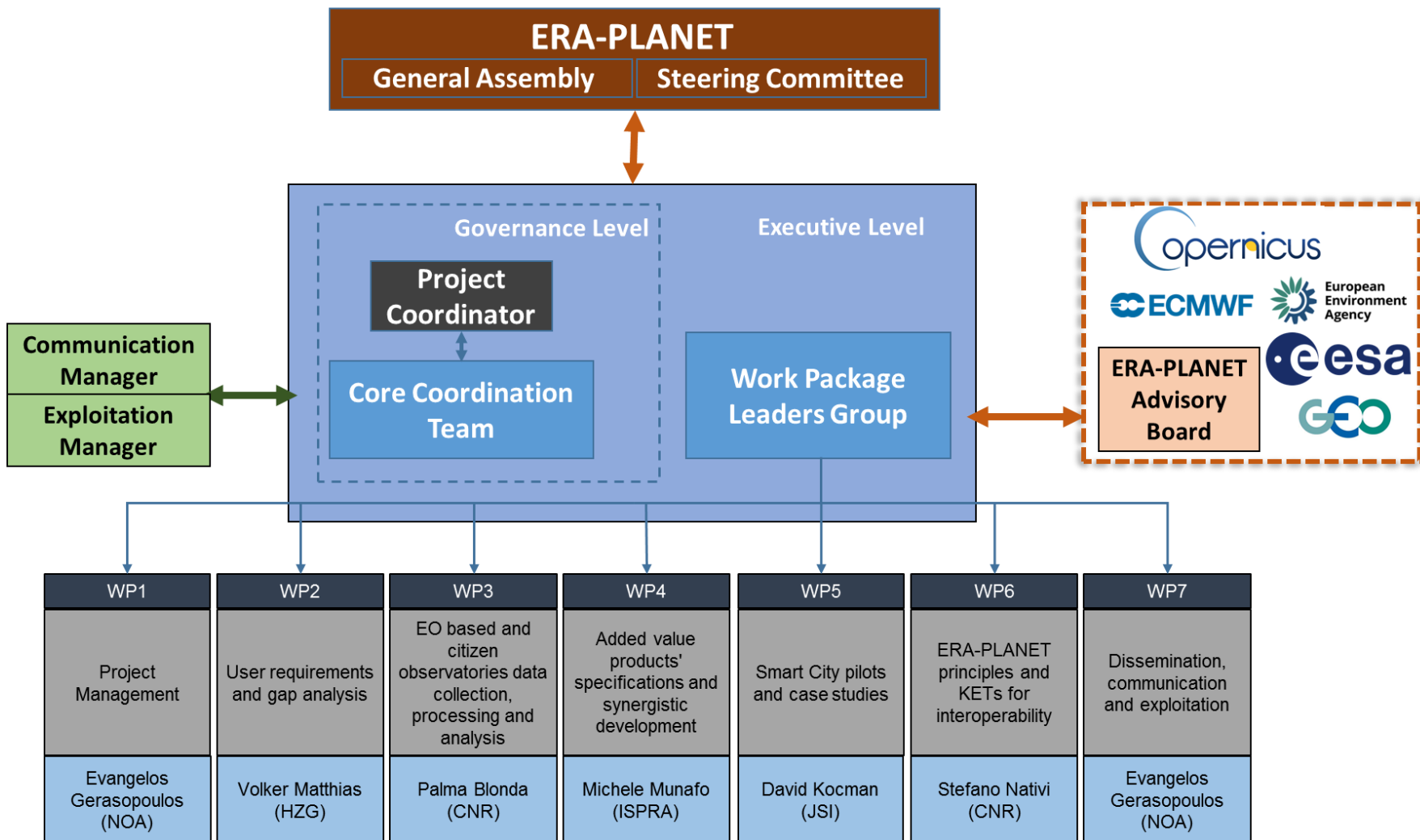
Users of services



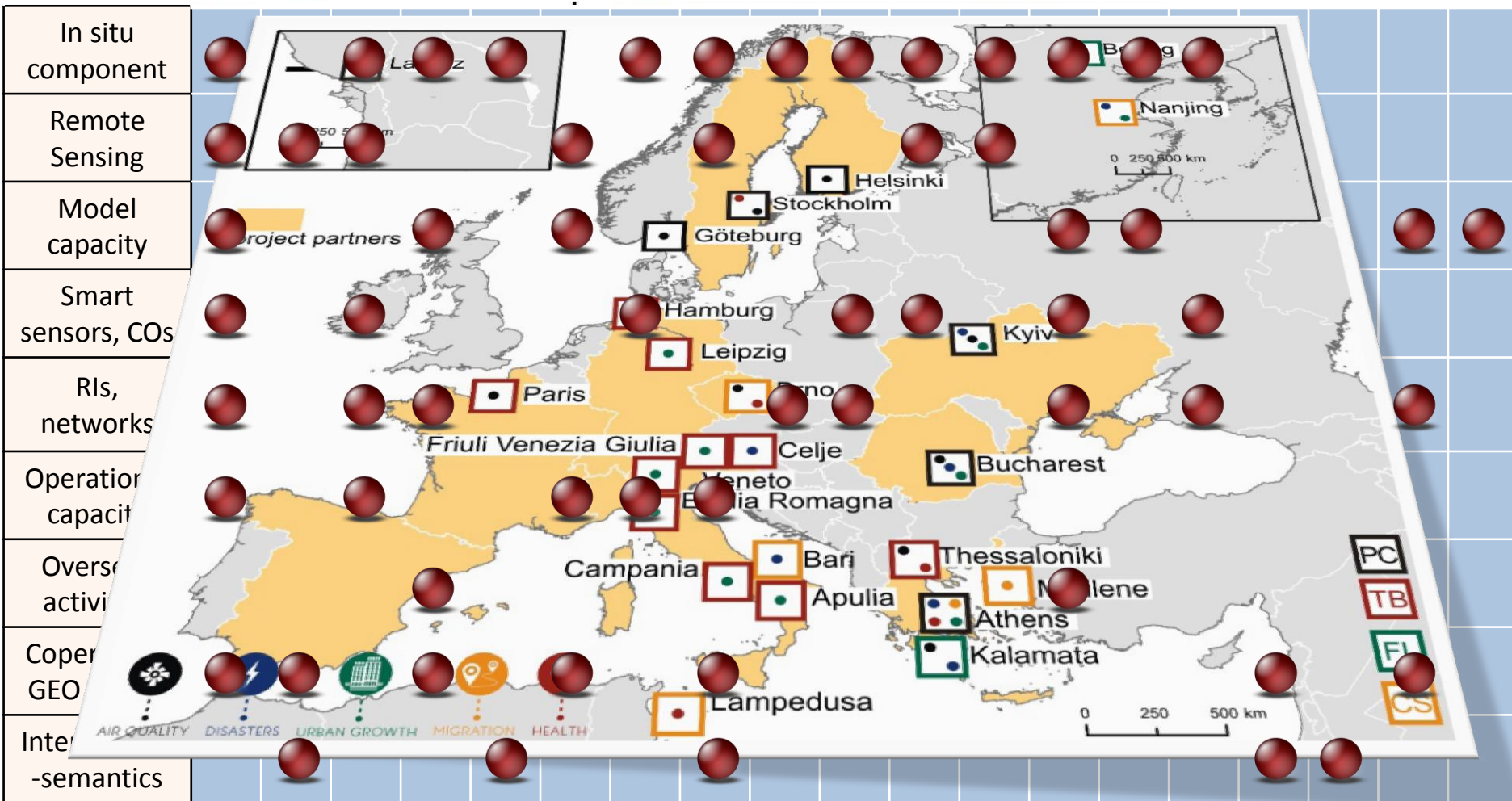
Overall concept



Management structure



the fellowship of SMURBS



me

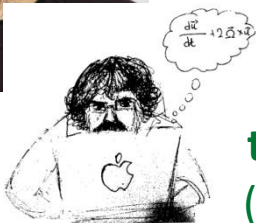
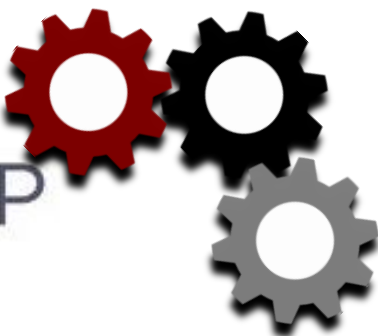


coordinator
(Evangelos)



co²-ordinator
(Eleni)

CORE
GROUP



theorist
(Orestis)



communication & admin
(Georgia)



comm. & dissemination
(Eleni)