

Scouting for the design of new EO-based on climate services tailored to the needs of European public authorities

16:15h-17:30h 14 June 2023

Marc Pattinson

G.A.C Group – Project Coordinator

Philippe Lattes

G.A.C. Group Moderator

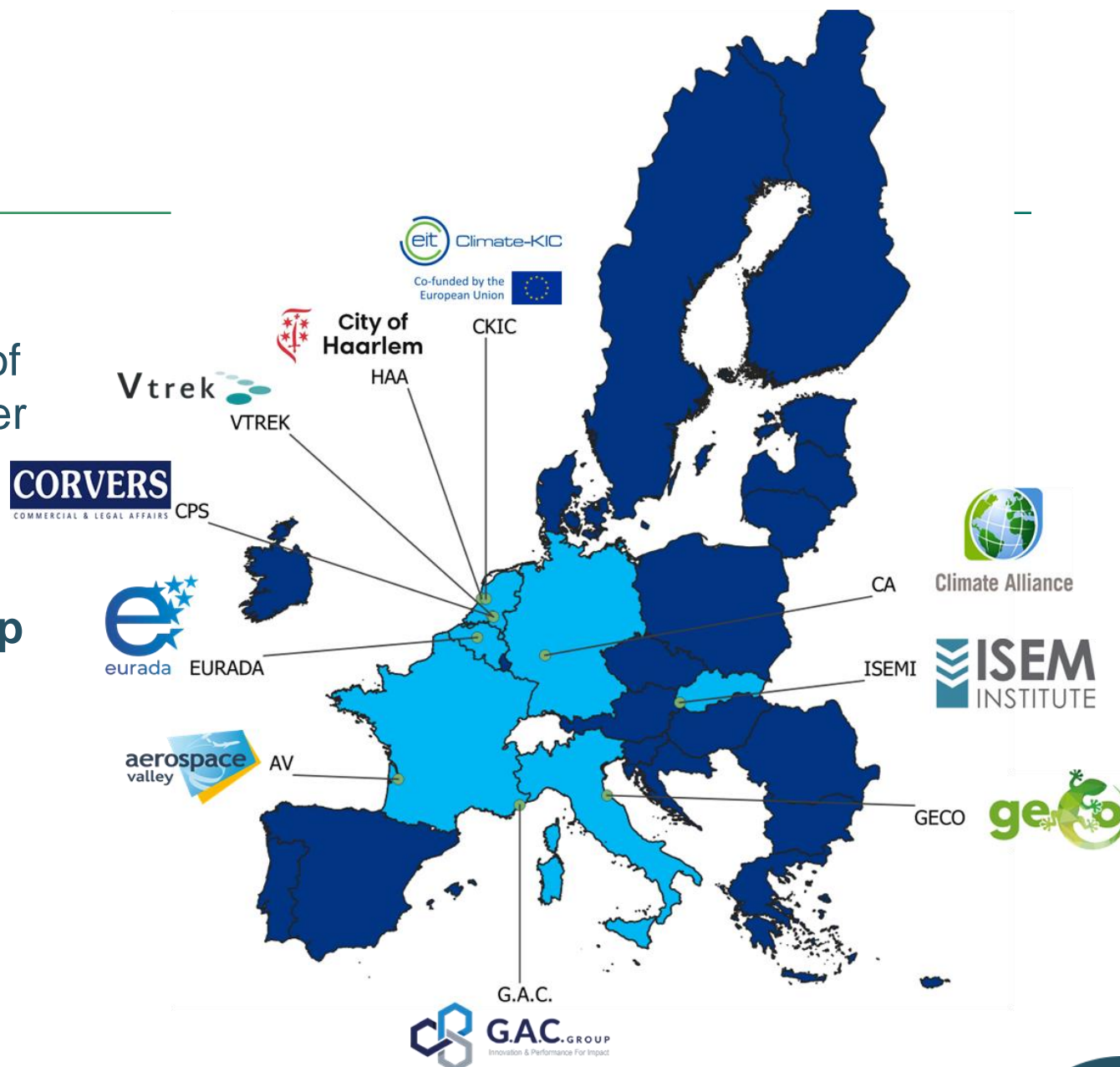


Agenda

Session	Lead	Time
Welcome & introduction	GAC (Moderator, Philippe Lattes)	16:15 – 16:20
PROTECT Project presentation	GAC (Project manager, Marc Pattinson)	16:20 – 16:30
E-pitch: OHB Digital Services	R&D Project Manager, Danijela Ristic-Durrant	16:30 – 16:35
E-pitch: TERRANIS	Chairman EARSC, Marc Tondriaux	16:35 – 16:40
E-pitch: Geosystems Hellas SA	CTO, Christos Kontopoulos	16:40 – 16:45
E-pitch: Latitudo 40	Business Dev and Marketing Specialist, Andrea Montinieri	16:45 – 16:50
E-pitch: Rasdaman GmbH	CEO, Peter Baumann	16:50 – 16:55
Reaction and feedback	Cites (Ixelles, Milan, Helsinki and Haarlem)	16:55 – 17:20
Wrap-up	GAC (Moderator, Philippe Lattes)	17:20 – 17:30

PROTECT ID Card

- PROTECT is a project funded by the European Commission in the framework of the HORIZON EUROPE programme under Grant Agreement Number **101060592**.
- Call info: [Link](#)
- PROTECT is coordinated by **G.A.C Group**
- **10** European partners
- Budget **2M€**
- Start: 1st of June 2022
- End: 31st of May 2024 (**24 months**)



PROTECT in a nutshell : five thematic priorities

PROTECT's mission is to prepare and equip a **community of public authorities/ buyers** to undertake one or more joint, cross border or coordinated **Pre-Commercial Procurement(s)** processes in order to steer the development of the **next generation of climate services based on Earth Observation data**.

By taking part in PROTECT activities, public authorities/ buyers will be strategically positioned for an [upcoming Horizon PCP call](#) expected to be launched in fall 2024 with a funding amount of up to EUR 19 million: [\(HORIZON-CL6-2024-GOVERNANCE-01-5: Customisation/pre-operationalisation of prototypes end-user services in the area Climate Change Adaptation and Mitigation\)](#)

Through PROTECT, public authorities/ buyers facing **similar pressing challenges related to climate change** will be connected and supported in the formulation of concrete and realistic **needs for EO-based climate services applicable to 5 selected domains** that can be the subject of future PCP or PPI.

Marine and coastal environments



Energy & Utilities



Sustainable urban communities



Agriculture, Forestry and other land use

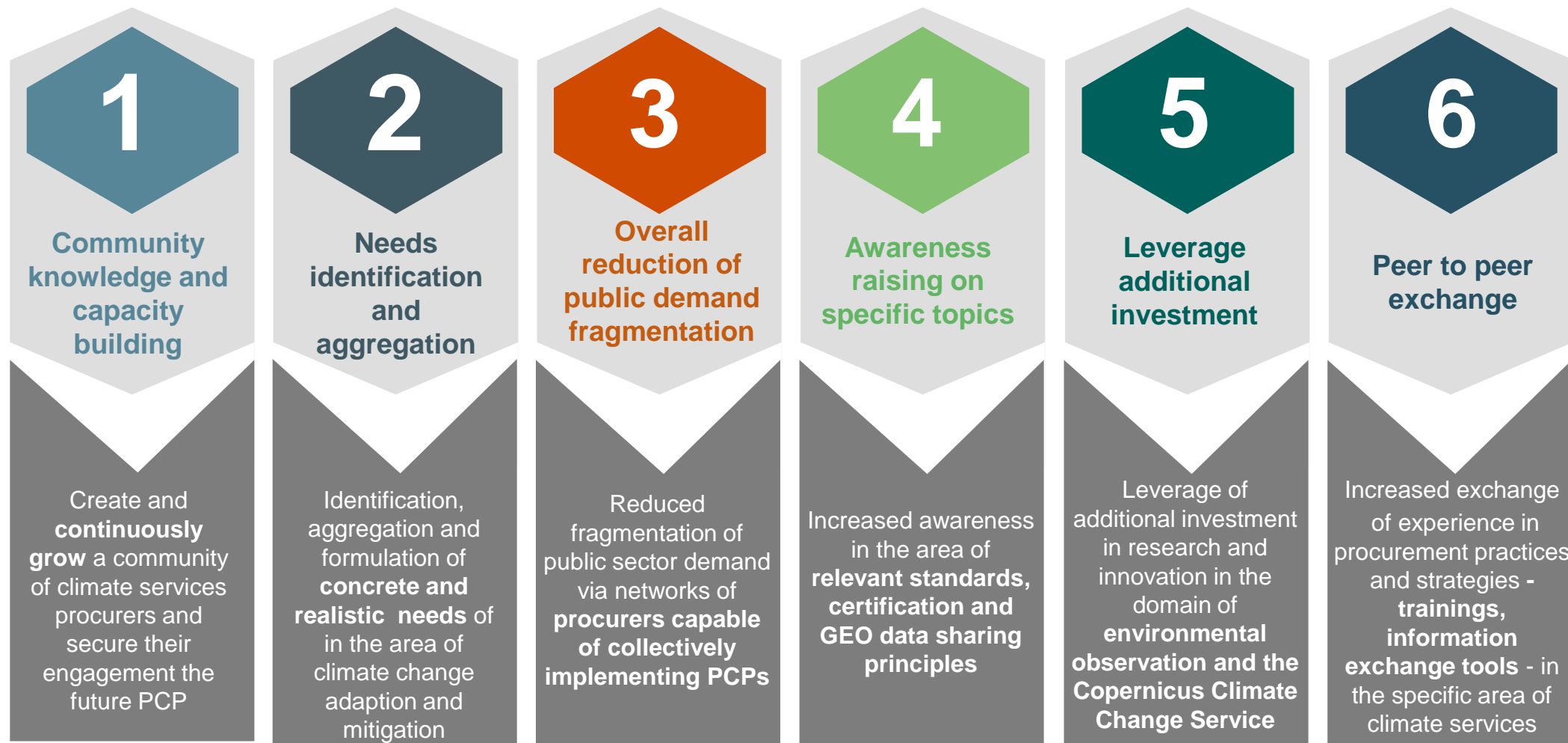


Civil security & protection



PROTECT contributes to achieving 10 of the 17 UN Sustainable Development Goals

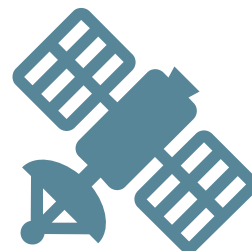
PROTECT specific objectives



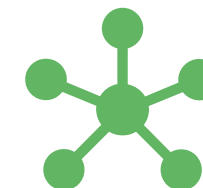
PROTECT key stakeholders



Procurers from national, regional and local public authorities and other procuring organisations from the EU 27 Member States and EEA countries & possibly private procurers



Climate services providers and specifically SMES, start-ups, and developers with ideas for innovative or disruptive climate services using EO that can help adapt and mitigate the effects of climate change



Multipliers & stakeholder associations facilitating the development of climate services through the provision and use of EO data (e.g., EARSC, NEREUS, EURISY, BUILD, PROCEDIN, FIRE Forum, e-shape, Climate Europe2, Harmonia, etc.)

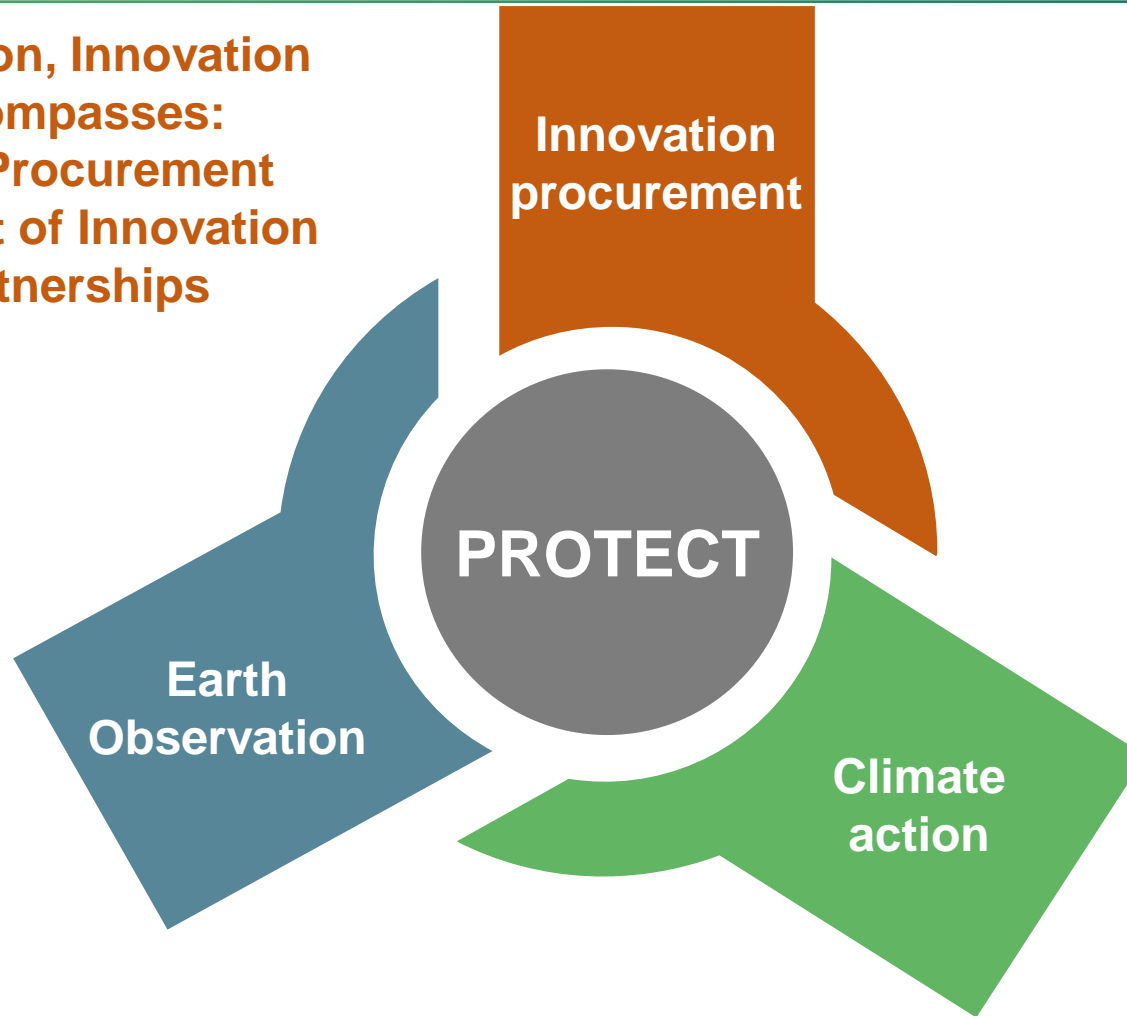
Key thematic areas

As per the EC definition, Innovation procurement encompasses:

- Pre-Commercial Procurement
- Public Procurement of Innovation
 - Innovation Partnerships

PROTECT looks at three EO data collection modalities:

- Space-based observation
- In situ observation
- Citizens' observation



PROTECT shall steer the development of solutions and services in the area of both Climate change Adaptation and Climate Change mitigation

Key achievements so far (M12)

Identification of challenges and enabling frameworks for PCP & preliminary needs for EO climate services

Jun 22 - Jun 24



Jun 22 - ongoing

[Survey Link](#)

Building PROTECT's visibility and connecting with key stakeholders

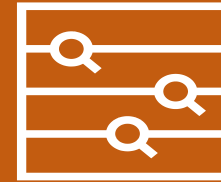
[Survey Link](#)

Sep 22 - Mar 23



Smart City Expo World Congress

Conference on 17 Nov 2022, Barcelona



200+ providers identified

Mapping of EO climate service providers

Taxonomy of climate services



68 members already !

Building the [PROTECT Community](#) of public authorities/ procurers

Preliminary Challenges/Needs identified by stakeholders

Sustainable urban communities



Thermal monitoring and predicting waste fires to avoid spontaneous ignition in waste storage and air pollution, using automated notification of risk of fires based on the modelling of certain conditions (like the level of humidity, air temperature, height of the pile of waste, etc.).

Civil security & protection



Identifying illegal dumping of waste in water and sending automated alerts to law enforcement agencies to prevent the flow of waste causing cross-border damages, and producing standardized reports that can serve as proof of responsibility in (criminal) judicial proceedings.

Preliminary Challenges/Needs identified by stakeholders

Marine and coastal environments



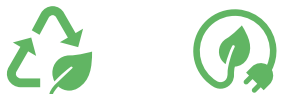
Rapid and reliable mapping of flooded areas for planning, preventing, predicting and post event intervention and cooperation.

Agriculture, Forestry and other land use



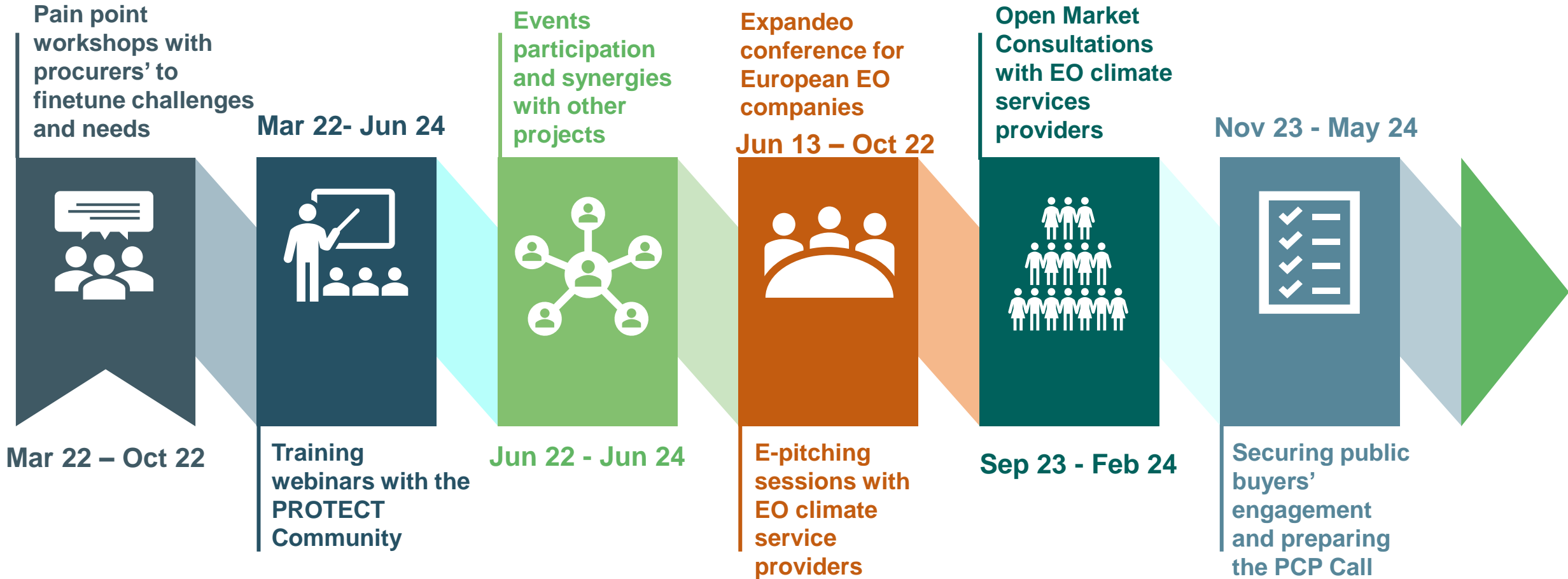
Detecting climate vulnerability in the face of challenges like salinity affecting reproductivity of vegetation, through automated analysis that supports the decision of experts in preparing resilience plans.

Energy & Utilities



Predicting the demand for sweet water from different users aimed at connecting the supply and demand of water for diverse uses (such as farming) in the water value chain to tackle periods of drought.

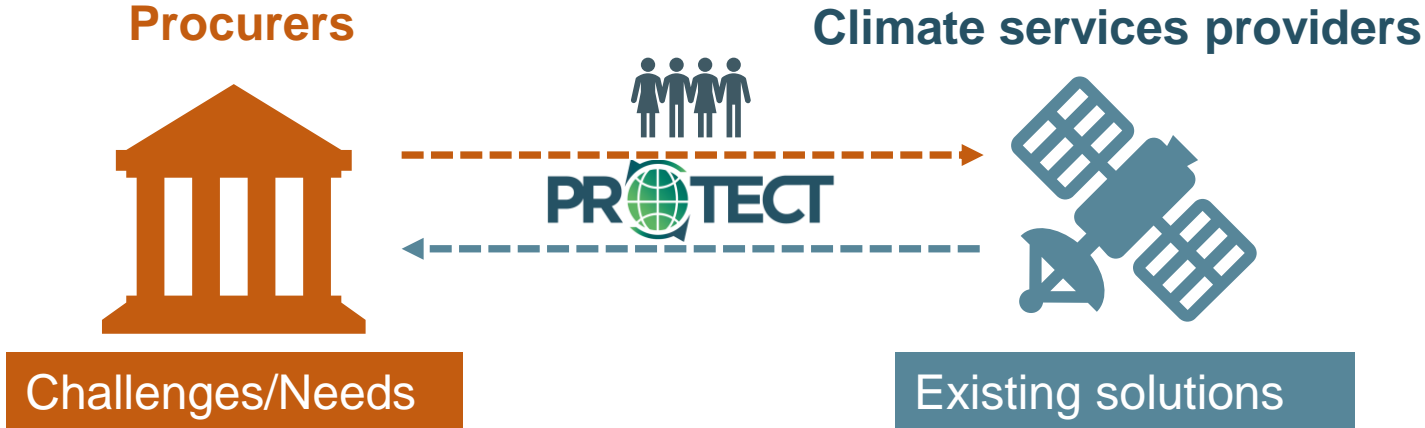
Upcoming activities



PROTECT E–Pitching session



The market suppliers (specifically start-ups and SMEs) will present how their existing solutions could tackle the procurement challenges selected.



PROTECT E-Pitching Presentation



E – Pitching Presentation – Expandeo

Wednesday 14th June, Brussels

Danijela Ristić-Durrant

OHB Digital Services



OHB DIGITAL is part of the OHB Group - one of Europe's leading technology and space companies



SPACE SYSTEMS

OHB System AG

OHB Italia S.p.A.

OHB Sweden AB

Antwerp Space N.V.

LuxSpace Sarl

OHB Czechspace s.r.o.

OHB Hellas mon. E.P.E.



AEROSPACE

MT Aerospace AG

Rocket Factory
Augsburg AG

Aerotech Peissenberg
GmbH & Co. KG



DIGITAL

OHB Digital Connect
GmbH

OHB Infosys GmbH

MT Management
Service GmbH

OHB Teledata GmbH

OHB Cosmos
International GmbH

OHB Digital Services
GmbH

GEOSYSTEMS GmbH

MT Mechatronica SpA

Blue Horizon Sarl

OHB Digital Solutions
GmbH

>40

years of experience in
technology projects

~1 bn

€ revenues

10

locations across
Europe

~3.000

experts across the
OHB group



Dr. Danijela Ristić-Durrant

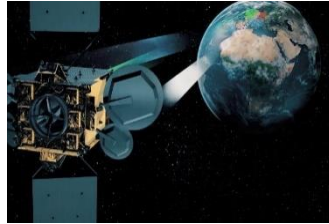
OHB Digital Services GmbH

Mail: info@ohb-ds.de

Web: www.ohb-ds.de

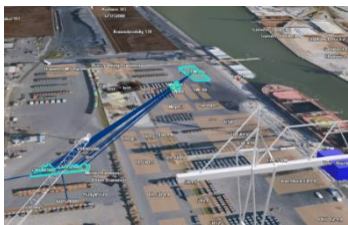
OHB Digital's portfolio - Our competences in different areas for your projects

SOLUTIONS



We develop individual solutions for our customers by **exploiting our competencies from space**

PRODUCTS



We develop **disruptive user-driven data products and services** – based on space projects, but targeted to all industries



- Agile software development
- Individual **Cloud Solutions**
- Professional Services
- Archive and processing systems for **Big Data analyses**



- Development of services based on **satellite data** and modern **AI/ML technology**
- Own real-time capable system for airborne earth **observation & monitoring**



- Planning and implementation of **security concepts** for IT infrastructures and networks incl. hardware and software
- **Cyber security** strategies and risk assessments

Potential service offer – fit with Pre Commercial Procurement approach

- **Earth Observation data services** for the integration of green spaces and monitoring of heat zones in a sustainable urban context
- **Urban Green View Services:**
 - *Monitoring of tree vitality; individual trees/green areas*
 - *Monitoring of Urban Heat Island effect*
 - *Analysis of urban green/heat changes/dynamics*



- **Generic Platform for City Climate Services** for citizens and city administrations
- **CityCLIM Services:**
 - *Unique-resolution Advanced Full-Physics Urban Weather Forecasting*
 - *Heat and Pollution Warning*
 - *Analysis Urban Climate Profile*
 - *Impact of manipulated urban local characteristics*
 - *EO-based simulation of heat pattern*

E – Pitching Presentation – Expandeo

Wednesday 14th June, Brussels

Marc TONDRIAUX

TERRANIS



Presentation of TerraNIS



- **SME founded in 2014** by three Airbus Defence & Space executives

- Specialized in the design of geoinformation services based on **Earth Observation**



- 3 business segments: **Viticulture, Agriculture and Land Management**, each with a dual expertise in the field/remote sensing



- 19 employees: experts in **agronomy, viticulture, geomatics, remote sensing and artificial intelligence**

- Headquarters in Ramonville near **Toulouse**, subsidiary in Santiago de **Chile**, sales representative in Madrid, **Spain**

	Services agri
	Oenoview
	Greencity
	Parametric insurance / Forest fires
	TerraNIS premises

TerraNIS current services offer

Agriculture



Field crops



Land Use



Viticulture



Soutenu par



Potential service offer – fit with Pre Commercial Procurement approach



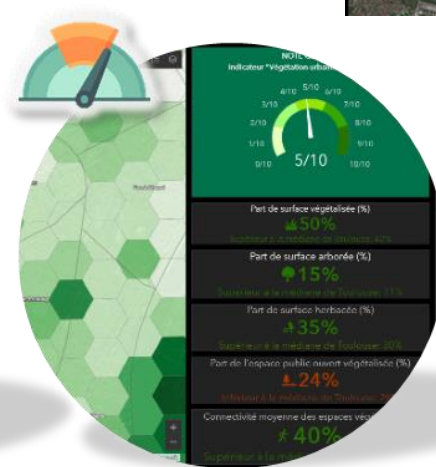
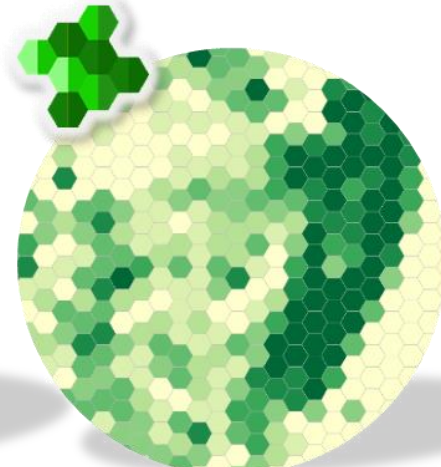
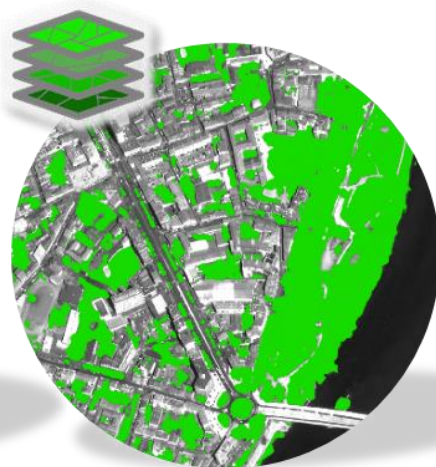
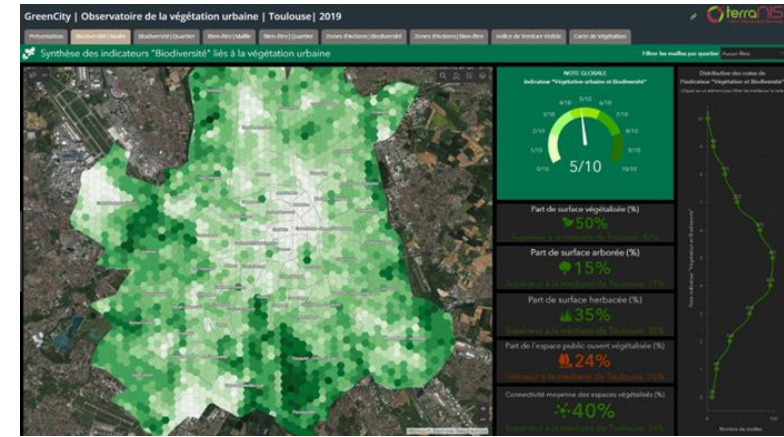
Visualize



Analyze



Optimize



E – Pitching Presentation – Expandeo

Wednesday 14th June, Brussels

Christos Kontopoulos
Geosystems Hellas SA



Company Presentation

01

COMPANY

Geosystems Hellas S.A. was established in 2009 and is based in Athens with a branch in Heraklion, Greece



02

Partners

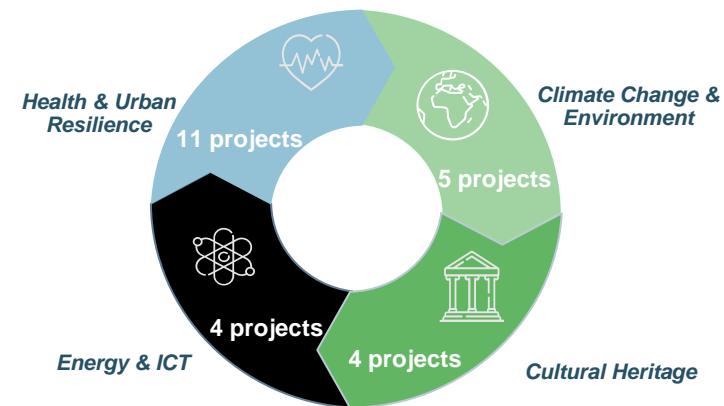
Nowadays a Greek SME with a German minority shareholder from **OHB SE**



03

International Collaborations

Participates in numerous national and European **R&D projects**



04

QUALIFICATIONS

ISO 9001:2015
ISO 27001:2013
ISO 22301:2019
ISO 14001:2015
NATO SECRET-EU SECRET



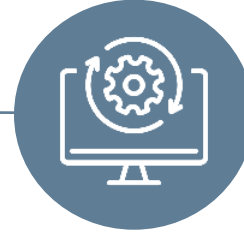
Current company service offer



COMMERCIAL & INDUSTRIAL PROJECTS

Provision of added value services in the Space Market including Earth Observation and Navigation Applications

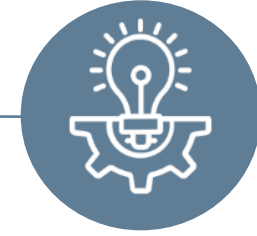
Consultant in Greece and Cyprus on complex subjects' integration on Earth Observation, IoT, and 4/5G



SOFTWARE DEVELOPMENT AND SUPPORT

Reseller & Consultant in Greece, Cyprus for Hexagon Geospatial & Hexagon Airborne Solutions

Subjects: Photogrammetry, Remote Sensing, Coastal & Marine, Geodetic & Environmental Monitoring projects



RESEARCH & INNOVATION PROJECTS

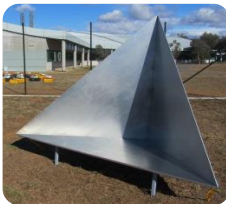
R&D projects more than 15 ongoing projects (HORIZON, ESA, National)

Earth Observation, Bid Data – Data Fusion – Machine Learning/Deep Learning techniques for European and National projects

Potential service offer – fit with Pre Commercial Procurement approach

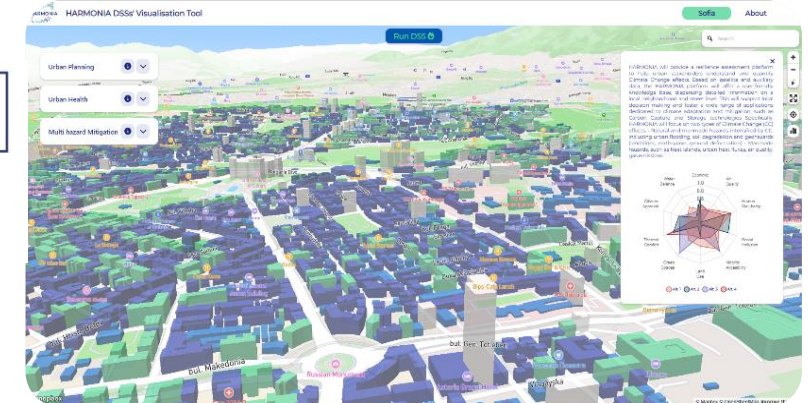
Critical Infrastructure monitoring system

- Multiparametric Microsensor monitoring system
- Integrated system for monitoring the tectonic activity
- InSAR reflectors (with thermal expansion/contraction control)



A novel Urban Planning Application

- Enhance urban resilience and efficiently mitigate Climate Change effects
- Urban Planning Decision Support System to support policy-makers
- Web Visualization Tool for the end-users' interaction



E – Pitching Presentation – Expandeo

Wednesday 14th June, Brussels

Andrea Montieri

Latitudo 40

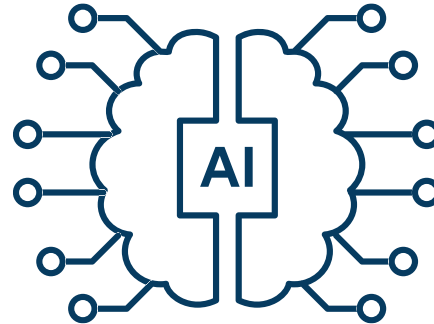


Company Presentation

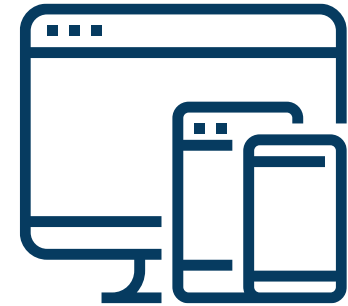
DATA FROM SPACE (Remote Sensing)



ARTIFICIAL INTELLIGENCE AS A SERVICE



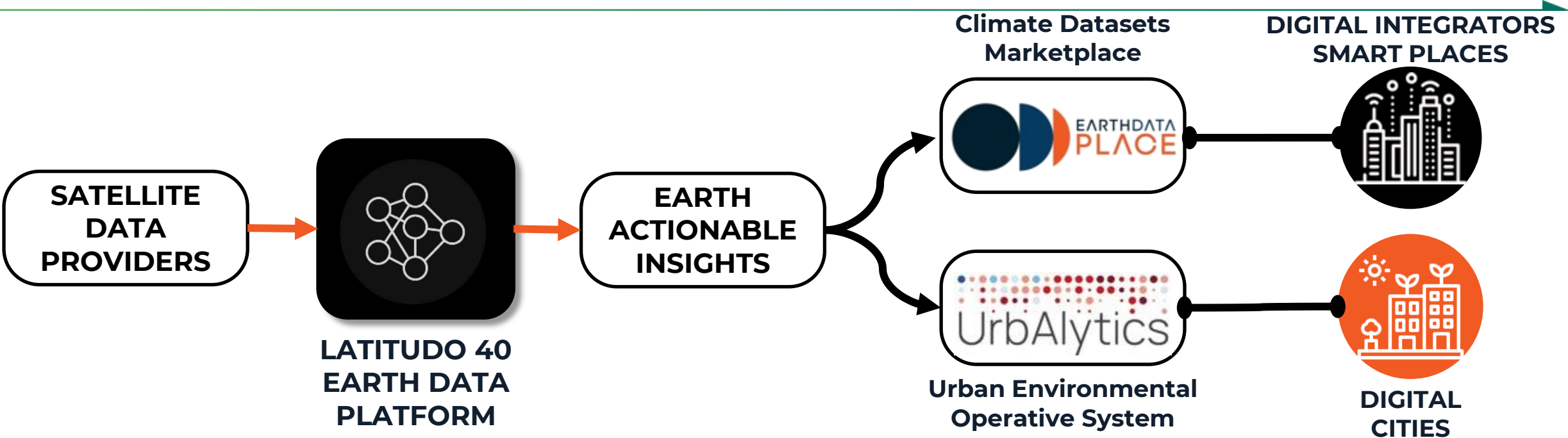
GEOSPATIAL DASHBOARD & MARKETPLACE



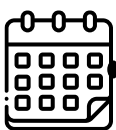
Latitudo 40 is a startup in the field of **Earth Observation**, our mission is to simplify access to **satellite remote sensing imagery** to support efforts to mitigate the effects of climate change.

We want to put **artificial intelligence** at the service of **human intelligence** to learn from the **PAST**, monitor the **PRESENT** and, above all, **DESIGN A BETTER FUTURE FOR THE NEXT GENERATIONS.**

Current company service offer



8 YEARS ENVIRONMENTAL AND CLIMATE TRENDS



RISKS AND PROBLEMS (AUTOMATIC ANALYSIS)



COMPARE - KPI - ACHIEVEMENTS (WEEKLY, MONTHLY)



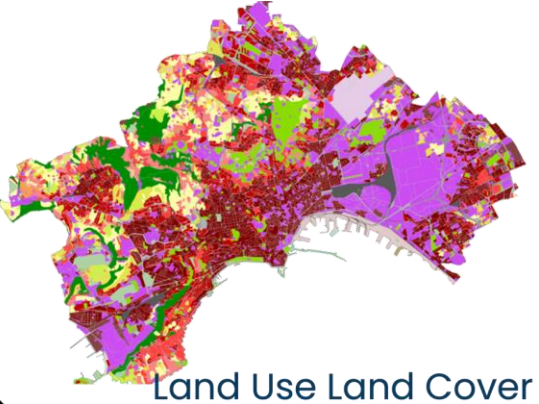
MITIGATION SOLUTIONS, IMPACT SIMULATION



Potential service offer – fit with Pre Commercial Procurement approach



Super resolution of Sentinel 2 images from 10m to 1m with a unique AI-based algorithm



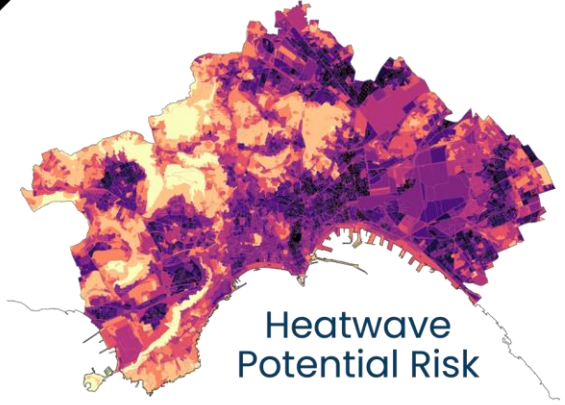
Land Use Land Cover



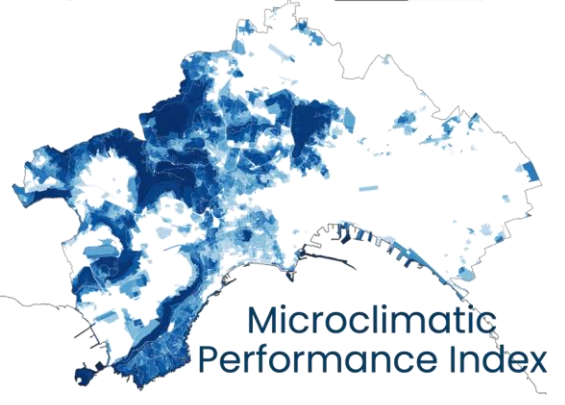
Tree Cover Density



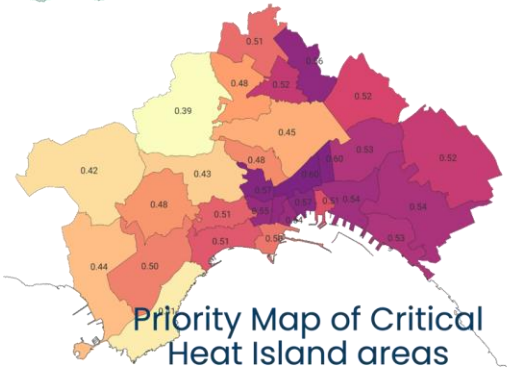
Park Cool Islands



Heatwave Potential Risk



Microclimatic Performance Index



Priority Map of Critical Heat Island areas

E – Pitching Presentation – Expanded: **rasdaman Datacubes**

Wednesday 14th June, 2023, Brussels

Name **Peter Baumann**

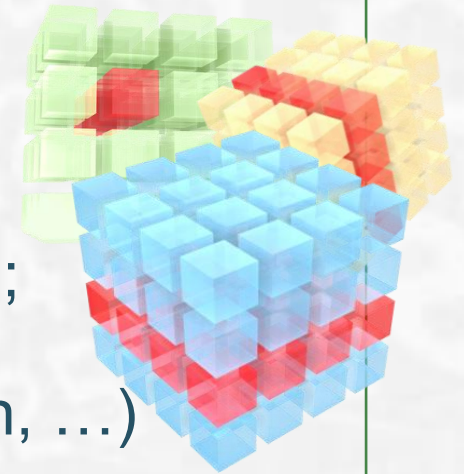
Company **rasdaman GmbH**

rasdaman
raster data manager

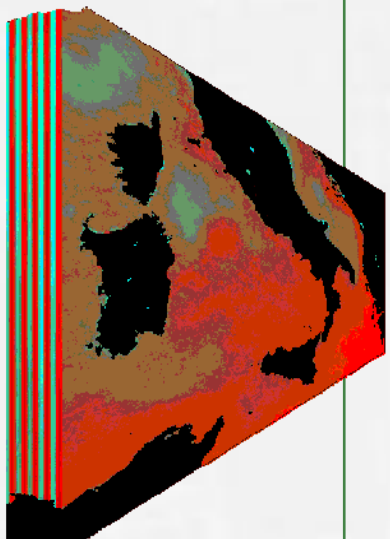


Company Presentation

- **rasdaman GmbH**, Bremen, Germany
 - Academic spinoff
 - Close cooperation with Constructor University
- **Customers:**
 - research (AWI, FZ Juelich, Alaska U, IEEE datacubes, ...);
 - industry (Airbus, Telefonica, ...);
 - agencies (JKI, Hessen, Schleswig-Holstein, NCHC Taiwan, ...)
- Active in relevant ecosystems: EOSC, GAIA-X, ISO, OGC
- Series of international **innovation awards**



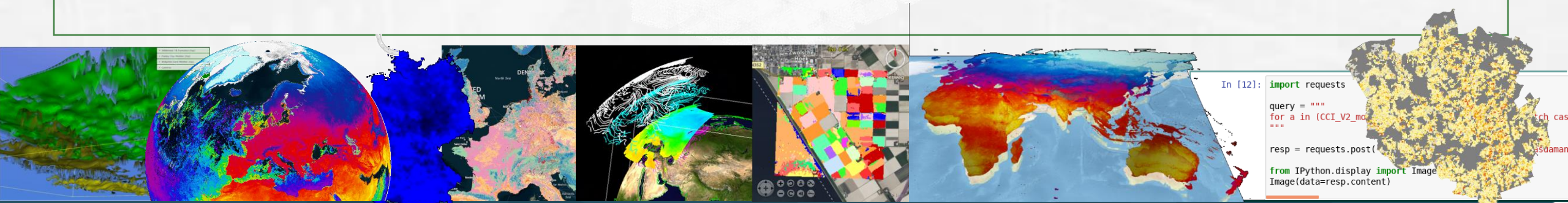
Company Service Offer: 360° Datacubes



- **Datacubes**: natural, human-centric for n-D data (space+time+...)
- **rasdaman** (“raster data manager”): pioneer datacube engine
 - Patents, 200+ scientific publications
 - Mature, operational
- **World tech leader**
 - Speed + scalability + federation + fusion + security + standards
 - Huge 3rd party client support: maps, globes, GIS, python, R, ...
 - AI added in EU FAIRiCUBE
 - Optimized processing: **Green Computing**
- **Customer offerings**: On-premise, managed service, pay-per-use

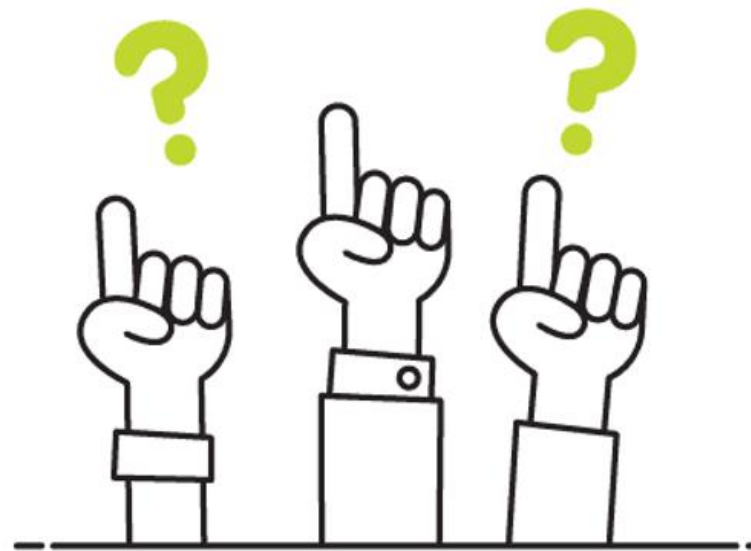
Service Contribution to Green Deal Data Space

- **Public data:** Datacube services on top of **Copernicus DAS**
 - of EO, weather/climate, thematic @ Mundi, Creodias & more
- **Customer data:** drop your data into VM, analyze them as space/time datacubes, mix & match with public data
- Access, analytics, AI, fusion, federation – **zero-coding**
- Target: agencies, research, industry – in line with pre-commercial procurement
- Optional: join **EarthServer datacube federation**
 - 160+ PB by independent providers – open, free, transparent, democratic



```
In [12]: import requests
query = """
for a in (CCI_V2_mo
"""
resp = requests.post(
from IPython.display import Image
Image(data=resp.content)
```

Q&A



Contact

Project Manager:

Marc Pattinson G.A.C Group

mpattinson@group-gac.com



www.protect-pcp.eu



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