Data-Driven & Smart Cities

Where Technology Meets Sustainability

SustainableSolutionsMatch

Welcome!

Session Agenda

- Welcome & Introduction
- Opening keynote: Nils Walravens, Smart Cities & Digitalization Expert
- Pitch Presentations:
  - Pitch 1: Lipa-Innovation (Belgium)
  - Pitch 2: Breeze Technologies (Germany)
  - Pitch 3: Bruntor (Latvia)
  - Pitch 4: DigitalTwin Technology (Germany)
  - Pitch 5: Geosparc (Belgium)
  - Pitch 6: trc (UK)
  - Pitch 7: VisibleCrossing (Hungary)
  - Pitch 8: Sensoneo (Slovakia)
- Closing Remarks

Welcome & Introduction

Who's moderating?

Maaike Van Overmeire

Sustainability Advisor

VLAIO / EEN Flanders

Who's organizing?

Welcome & Introduction

Let’s play by the rules: smooth sailing for our session!

- **Mute Policy:** Please remain muted unless speaking to avoid background noise.
- **Q&A Time:** After each pitch, there will be 1–2 minutes for questions. Please use the chat to ask questions.
- **Time management**: Pitchers, please keep track of your time. We will inform you if 5 minutes have passed.
- **Technical Issues:** If you encounter issues, use the chat to notify the host.

Keynote

Smart Cities and Communities
Quo vadis?

Nils Walravens, PhD
VLAIO

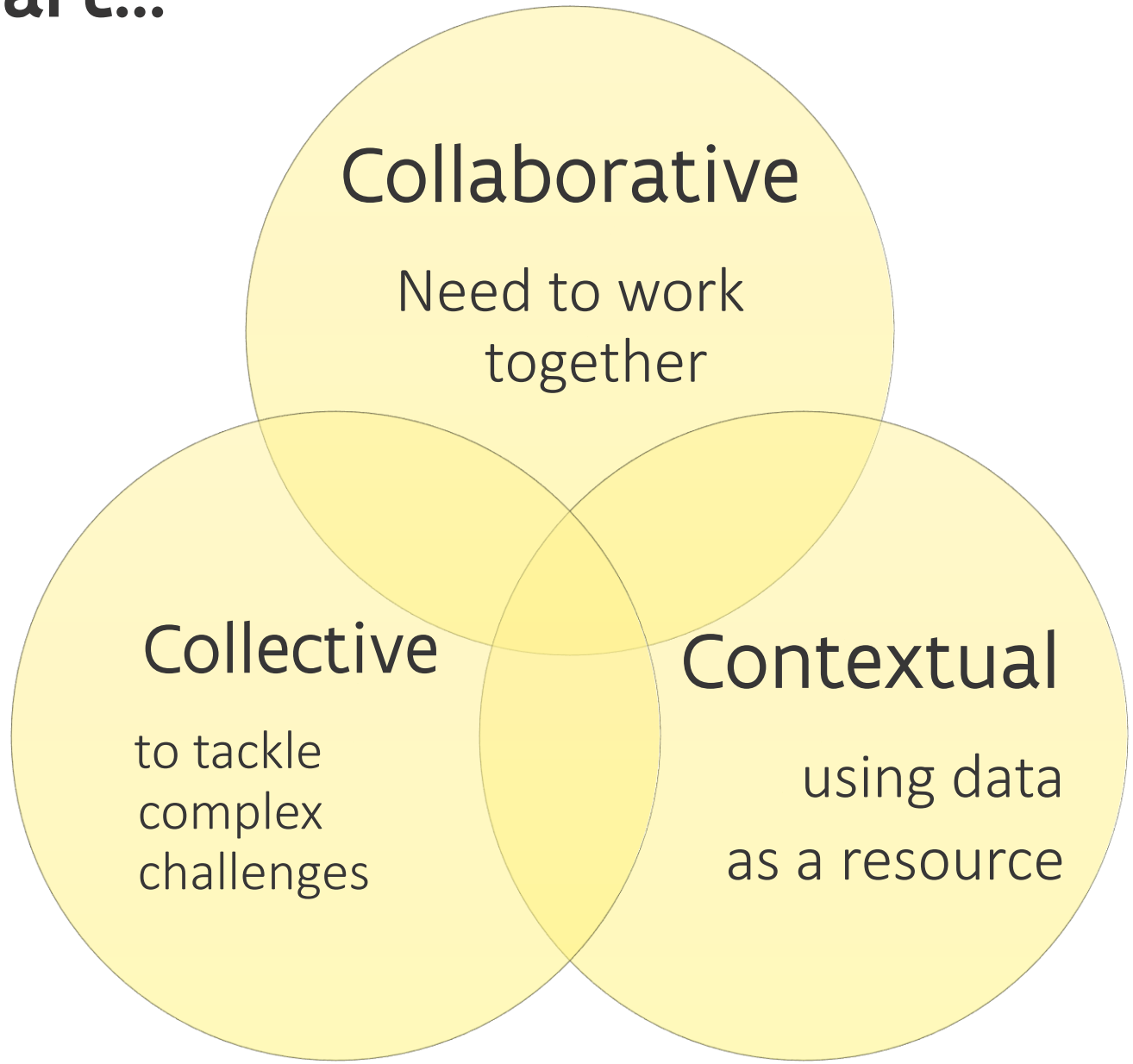
Smart Cities and Communities Quo vadis?

NILS WALRAVENS, PHD – VLAIO

SUSTAINABLE SOLUTIONS MATCH – SMART CITIES

14 FEBRUARY 2025

I am so smart…


Collaborative
Need to work together
Collective
to tackle complex challenges
Contextual
using data as a resource

What are we dealing with as local governments?

Which challenges are suited for such an approach?

How do we fit a “smart” approach into the day-to-day?

How do we relate to solution providers?

How and when do we involve citizens, companies, knowledge orgs and so on?

How do we deal with technology and the data it generates?

Approach in Flanders

Smart Region Office

ADVISORY, FACILITATING AND CONNECTING ROLE

The Smart Region Office is the liaison between the Smart City initiatives of the Government of Flanders, local governments and companies, and sets out a joint policy.

The Smart Region Office translates the Flemish, federal and European Smart City policies, initiatives and project calls to local government, knowledge institutions and companies.

Organises: matchmaking, knowledge exchange, networking, funding opportunities...

Smart Region Office Team

smartregionoffice@vlaanderen.be

https://vlaanderen.be/smart-region-office

Willem Geelen

Digital Flanders

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Nils Walravens

Agency for Innovation and Entrepreneurship

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Ken Daems

Agency for the Interior (Urban policy)

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Pitch Presentations

Time to meet the innovators!

Pitch 1

Lipa-Innovation
Patrick Brants

Belgium

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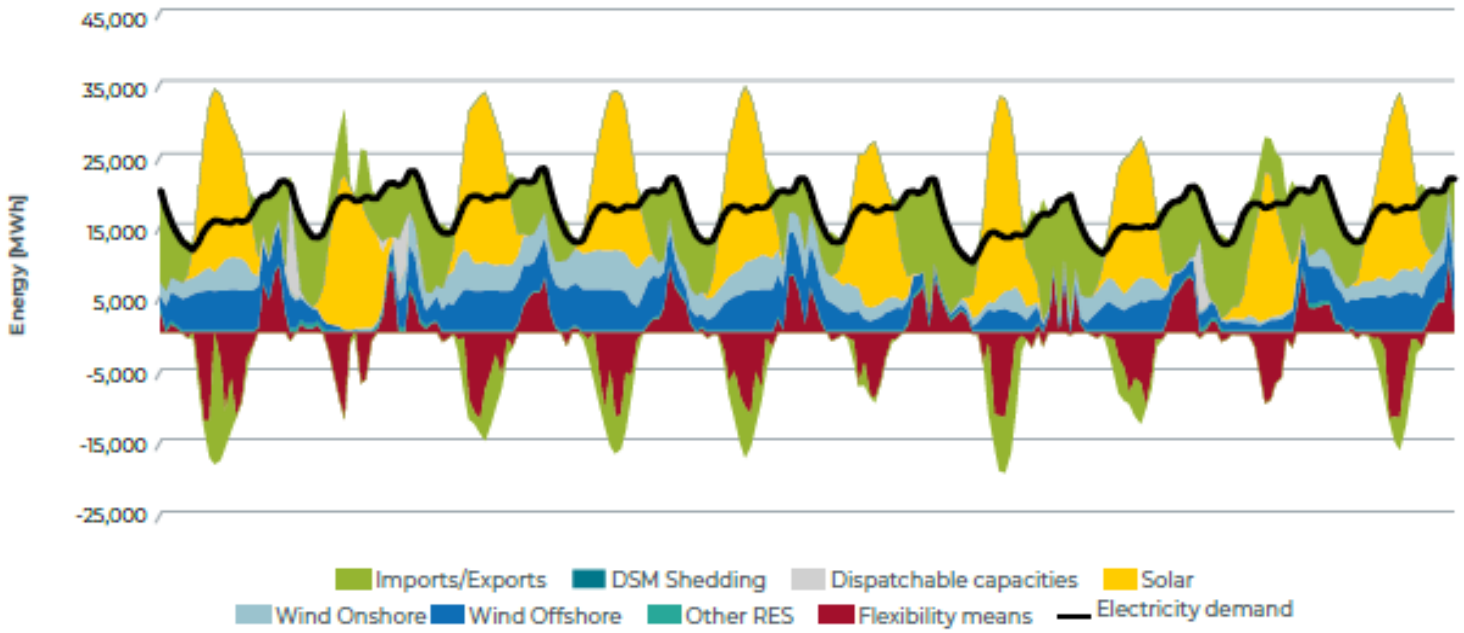
Compressed Air Frequency Containment

BRANTS Patrick
innovator

Concept to match supply and demand on the electricity grid



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How? 3 ingredients

With 1kW of renewable energy, one gets back up to 0.5kW when needed and produces an additional 1kW of heat and 0.5kW of cooling.

E-generator

Compressed air storage

Compressor

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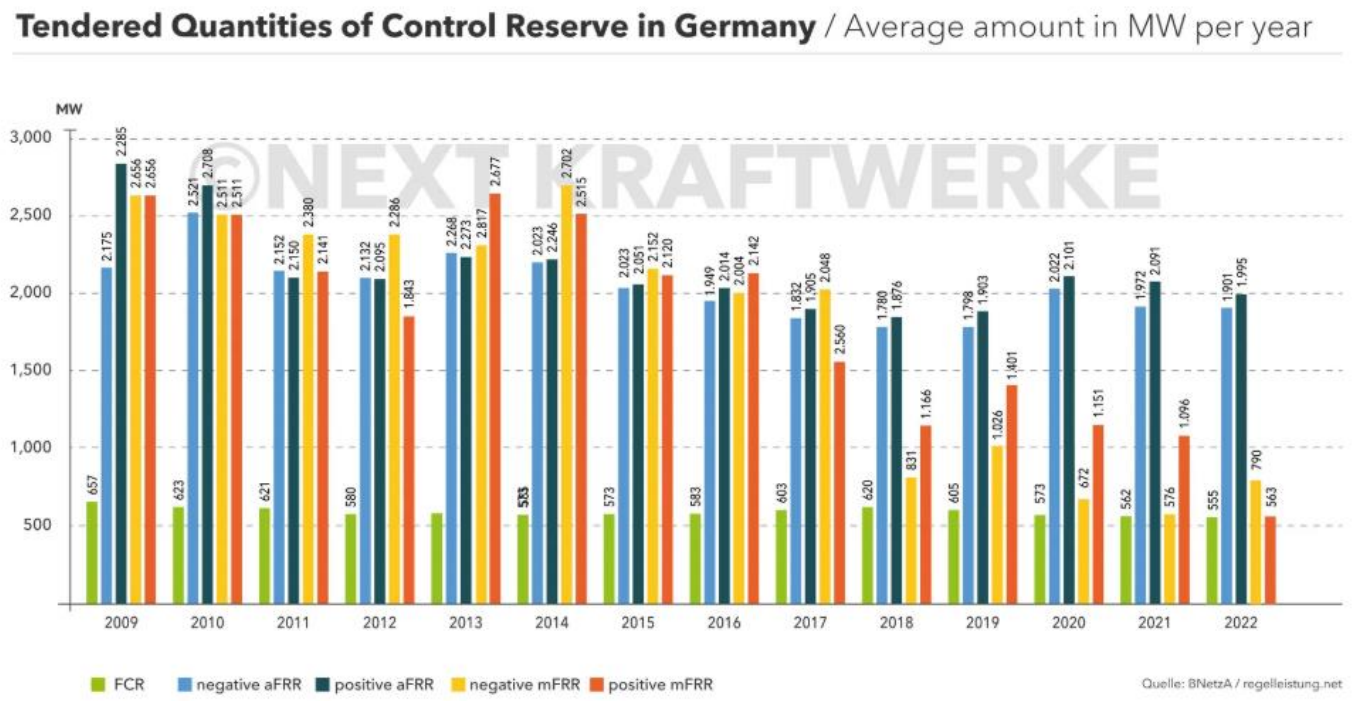
Our solutions differential value and sustainable impact

Our system, while less cost-effective than battery storage and water storage, is super interesting for coping with very short-term power shortages, namely the 15-minute balancing market (The FCR Market > Frequency Containment Reserve Market).



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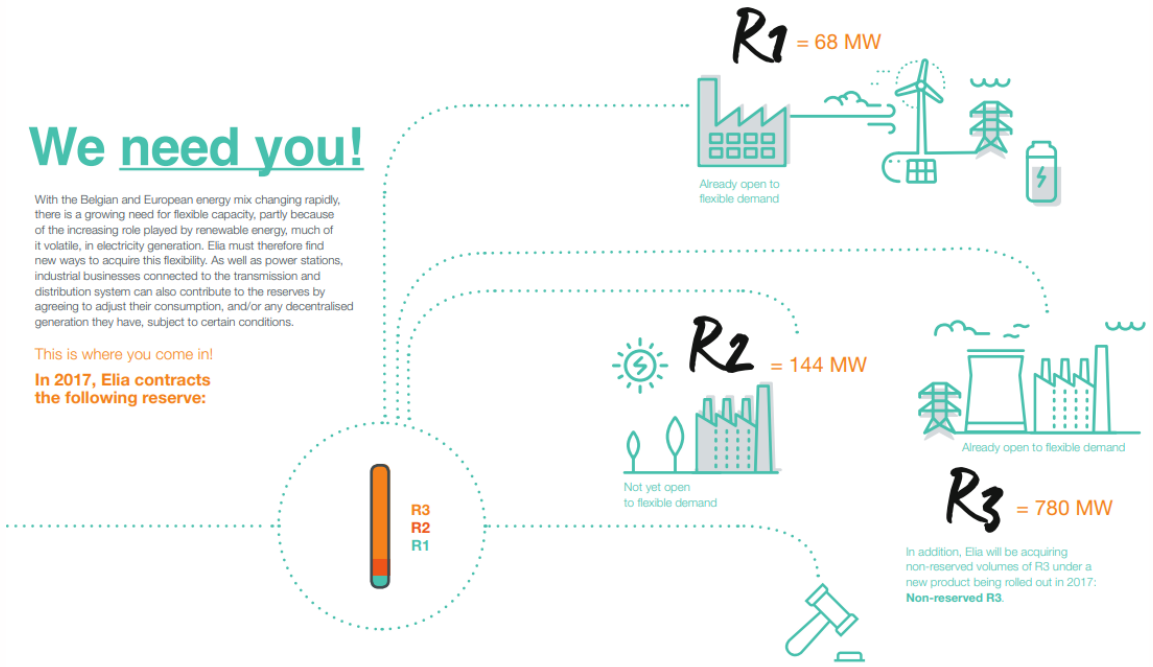
Market/Target audience – Who can apply our solution?

The grid suppliers (Balancing Responsible Partners) are looking for Balancing Service Partners and this for a capacity that keeps on rising because of renewable energy,



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Sustainable and circular innovation needs good networks along the whole value chain. Preferred cooperation partners:

We are looking for a company specialising in HVAC for buildings, putting innovation first and willing to pull the cart with us and a scientific partner to make this simple concept a success story.

Every other heating/cooling system costs money annually (namely energy consumption), our system on the other hand has a payback period! Why wait to talk to us and who knows a successful cooperation,

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Book a meeting with: Lipa-Innovation

Patrick Brants

een.ec.europa.eu

Up2Circ

enterprise europe network

Pitch Presentations

Time to meet the innovators!

Pitch 2

Breeze Technologies
Robert Heinecke

Germany

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Environmental Intelligence Suite:
Air quality monitoring & analytics solution

BREEZE TECHNOLOGIES

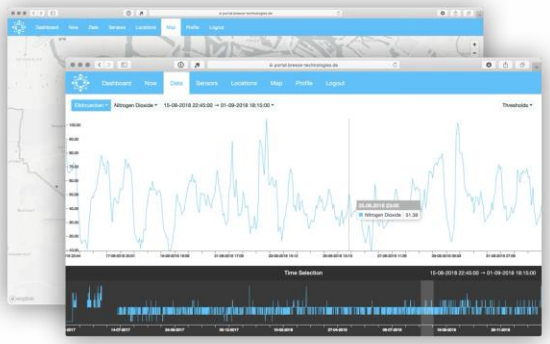
Breeze Technologies

Robert Heinecke
Founder & CEO

Our approach: Collect environmental data, translate it into insights and recommendations, and communicate about it.

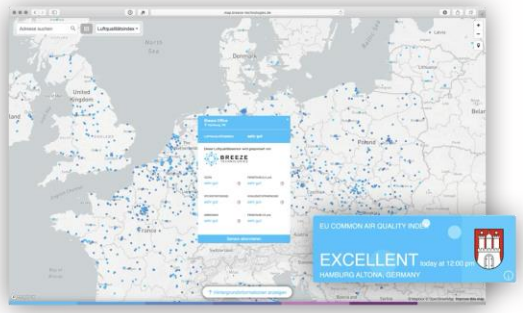
Monitor

Collect hyperlocal environmental data: Air quality and noise pollution, wildfire detection. Automatic calibration.



Take Action

Translate environmental data into actionable recommendations: AI-enabled. Air quality improvements of up to 70% in reference projects.



Communicate

Optional citizen portal, website widgets and other tools enable real-time data & success sharing.

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The air quality sensors of Breeze Technologies are monitoring all important air quality parameters in real-time.

T	Temperature	O_3	Ozone
RH	Humidity	NO	Nitric Oxide
CO	Carbon monoxide	NO_2	Nitrogen Dioxide
CO_2	Carbon dioxide*	NH_3	Ammonia
PM_x	Particulate Matter (10µm + 2.5µm)	VOC	Volatile Organic Compounds*
SL	Sound Level*	SO_2	Sulphur Dioxide*

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Typical usage scenarios

Evidence-based urban planning

Integrate environmental data in urban planning processes to identify potential for optimisation, successes and local best practices

Traffic management

Routing and traffic shaping based on air quality data to reduce overall pollution exposure in the cityscape, integration in public transport services

Chemical transport models

Air pollution dispersion can be geo-spatially analysed - even identifying individual polluters is sometimes possible

City marketing

Showcase particularly good air quality to increase attractiveness in tourism and family settlement, as well as a tourism destination

Climate protection management

Citizen science initiatives activate citizens for climate protection activities - have citizens act as sensor hosts or participate in hackathons

Smart city integration

Integrate air quality data in a horizontal smart city platform to create synergies with other urban data sources

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Project reference: Municipality of Vilnius
Enabling self-reliant air quality management

Vilnius is the capital of Lithuania with around 550,000 inhabitants. Vilnius was dependent on air quality data from the environmental ministry. Breeze Technologies enabled them to:

- **Conduct their own investigations** of air quality data with quick deployment of sensors in city-relevant locations
- Build a foundation for decision making in **traffic management and urban planning** with particular focus on the old town
- Integrate air quality data into the **smart city platform** for further analysis

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Why Breeze Technologies

Turn-key environmental monitoring

We take care of sensor calibration, quality assurance, investigate conspicuous data and replace sensors as part of your subscription.

Direct contact with our management

No faceless support hotlines - as our customer, you are in direct contact with our core management. Your success and feedback are essential to us.

10 years of experience in smart city projects

With smart city project experience from over a dozen countries, we are happy to assist you in concept development and implementation.

Your city's data is yours

All environmental data captured by our sensors belongs to you. Forever. Our platform's open APIs enable deep integration with your technology stack.

One-stop shop

Breeze Technologies provides you a fully integrated environmental monitoring and management solution, saving cost and effort.

A certified social business

Breeze Technologies has been certified as a social business by Grameen Social Lab in December 2023.

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Book a meeting with: Breeze Technologies

Robert Heinecke
Founder & CEO
Breeze Technologies
robert@breeze-technologies.de

een.ec.europa.eu

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enterprise europe network

Pitch Presentations

Time to meet the innovators!

Pitch 3

Bruntor
Raimonds Jurgelis

Latvia

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THE BRUNTOR CARGO VEHICLE:

SAFE, SUSTAINABLE AND COMFORTABLE LAST-MILE DELIVERIES

BRUNTOR

Raimonds Jurgelis
CEO

TRAVEL TIME OUTWEIGHS WORK TIME

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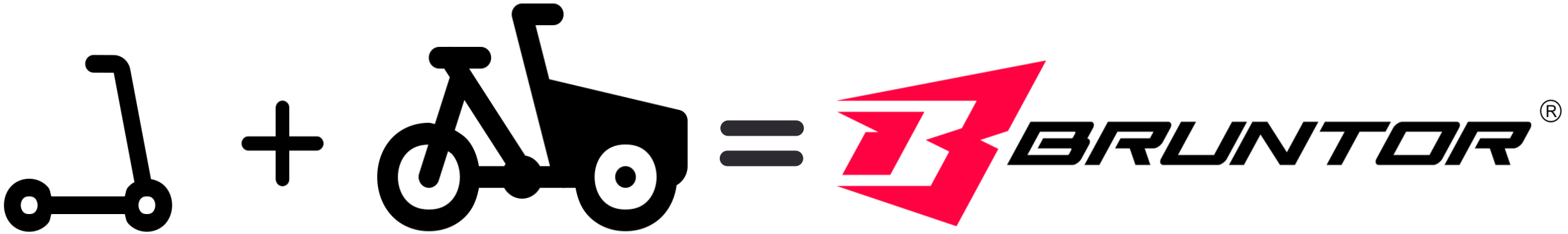
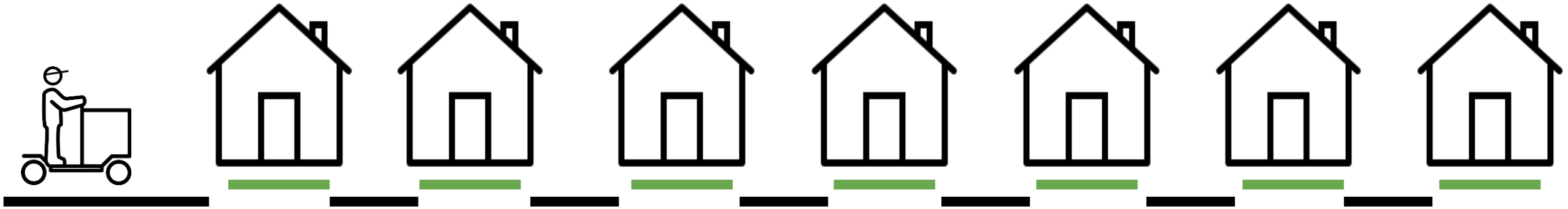


MORE STOPS AT THE SAME TIME



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- Outdated
- Slow
- Physically demanding

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WHY CHOOSE BRUNTOR?

- Effortless Operation
- High Load Capacity
- Inclusive Design

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DIVERSE INDUSTRIES, UNIFIED SATISFACTION

POST

HOSPITALITY

CITY LIFE

Protected design & pending patent

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COOPERATION PARTNERS

- Policy makers
- Parts manufacturers
- Micromobility enthusiasts

#EENCanHelp

Book a meeting with: BRUNTOR

Raimonds Jurgelis
CEO
BRUNTOR
Raimonds.jurgelis@bruntor.com

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Pitch Presentations

Time to meet the innovators!

Pitch 4

DigitalTwin Technology
Dr. Tariqul Islam

Germany

SustainableSolutionsMatch

Simulating Smart Cities: Dynamic Cityscale Digital Twins for Extended Reality

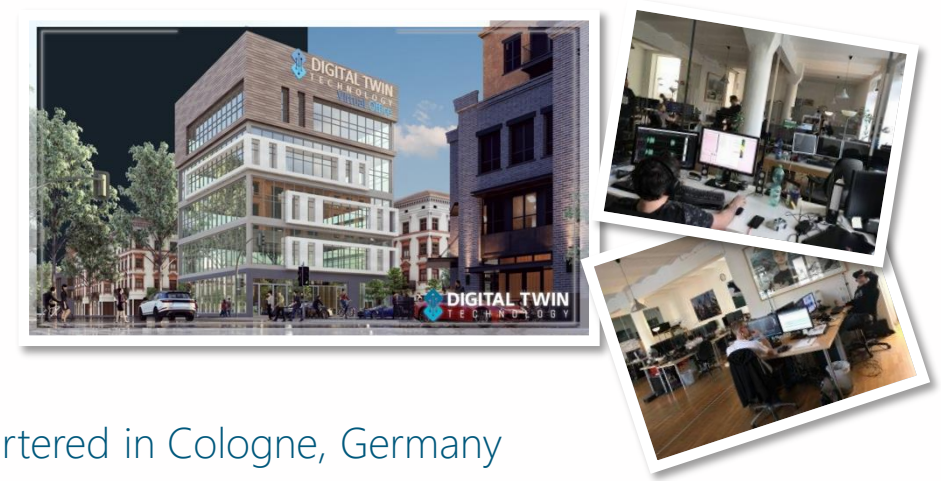
DigitalTwin Technology GmbH

Cologne, Germany

Dr. Tariqul Islam
R&D Project Manager

About us

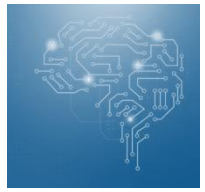
DigitalTwin Technology GmbH



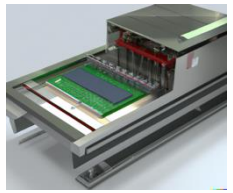
- **Founded in 2018**, an SME headquartered in Cologne, Germany
- Our vision :
  Develop advanced, open-source & tailored Digital Twin ecosystem for
  - Smart Cities
  - Construction
  - Manufacturing
  - Semiconductor

City-scale Digital Twin

Construction Digital Twin


Artificial Intelligence

Sensor and Control


3D Modeling of Machine

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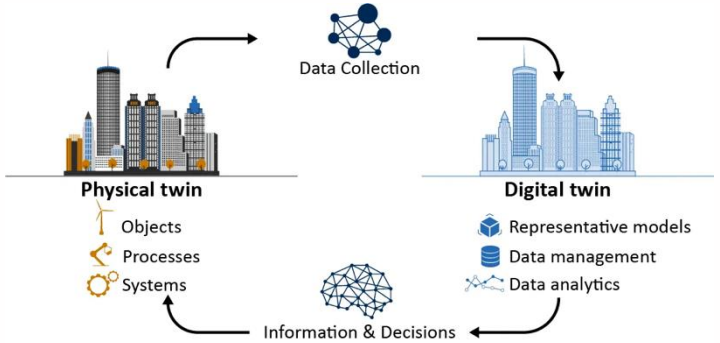
Dynamic Cityscale Digital Twins for Extended Reality

Smart City Project

DIDYMOS XR δίδυμος

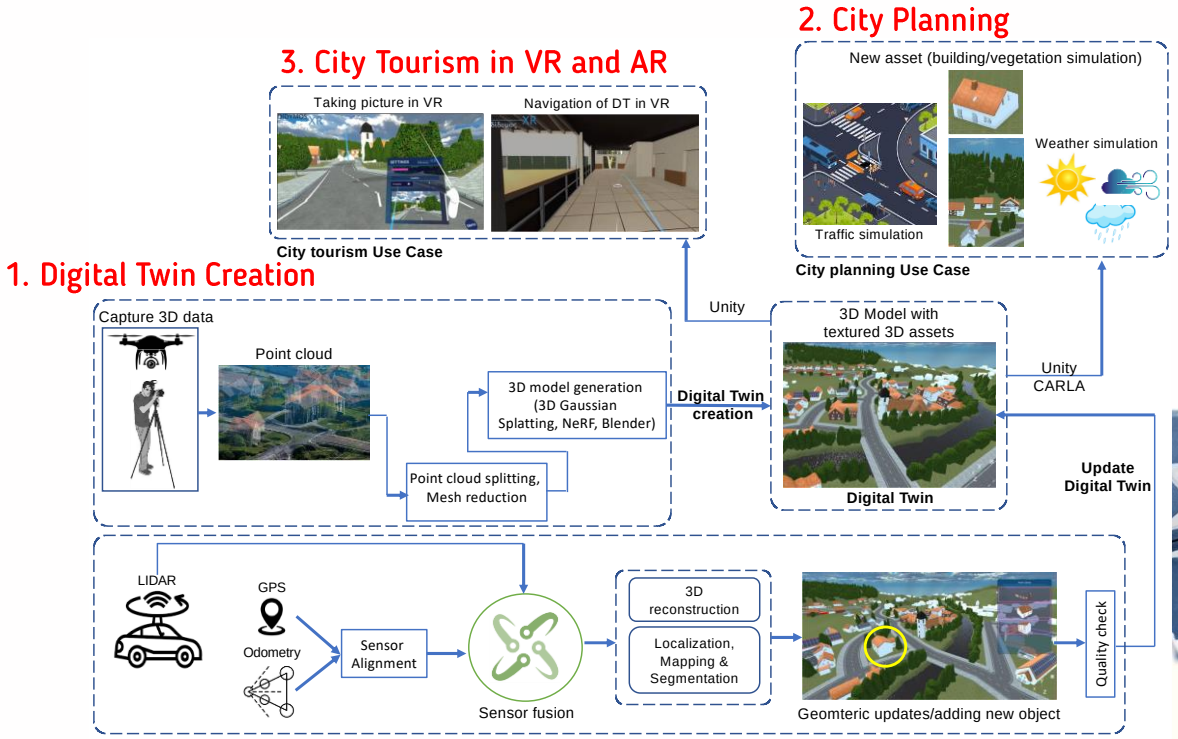
Funded by EU Horizon Europe

- **Digital Twin** – virtual replica of real-world physical objects and adapts to real-world condition changes



Example of City-scale Digital Twin of Etteln, Germany

- **Three Use Cases**



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Dynamic Cityscale Digital Twins for Extended Reality

- **Development Results**

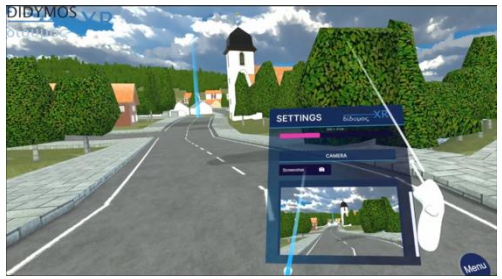
Weather Simulation

Light intensity

Rain

Traffic Simulation

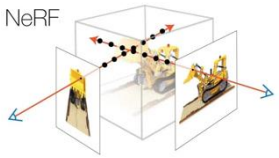
Immersive Digital Twin in VR



- **Technologies and tools used for developments**

- Digital Twin Development, City Planning
  - **AI models (*NeRF*, *Gaussian Splatting*)**
  - Unity 3D, WebGL
  - Blender, 3D Studio Max

3D Gaussian Splatting



- City Tourism in VR
  - Unity 3D
  - Meta Quest 3

- Traffic Simulation
  - Unity 3D
  - SUMO

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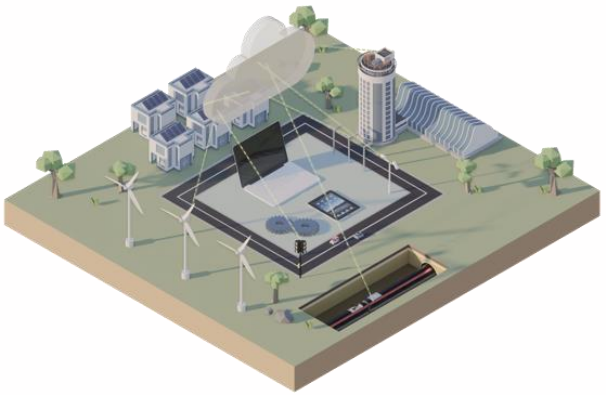
Our solutions differential value and sustainable impact

➢ Benefits of our solution

- Our Digital Twin (DT) solution
  - supports **Real-time Synchronization** with real-world sensor data.
  - provides **Higher Realism** via ***Improved 3D models*** and semantic understanding for more accurate XR experiences.
  - Includes **Automation in DT Creation** via cutting edge ***AI models*** for automated scene understanding.
  - Supports **large 3D models** in the pipeline
  - **Lowers overall cost** for overall DT creation and maintenance

➢ Sustainable impacts of our solution

- Our Digital Twin (DT) solution supports
  - Optimized **Urban Planning & Resource Management**
  - Efficient **Building & Energy Management**
  - **Biodiversity & Green Space Conservation**
  - **Smart Mobility & Reduced Private Car Dependency**
  - Reduced **Carbon Footprint & Emissions**



Market/Target audience – Who can apply your solution?

- City planners
- City Architects
- City council
- Traffic managers
- Tourism managers
- Event mangers

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What kind of cooperation partners would you like to connect to beyond finding new customers?

We are looking for Project Consortium Partners

From:
- Industry (SME/RTO/LE)
- Academia

In Sectors:
- Smart City
- Construction
- Semiconductor
- Manufacturing
- ICT

Partner roles:
- Project partner
- Project coordination

Goals:
- To develop proposal
- implement research activities

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Book a meeting with: DigitalTwin Technology GmbH

Rahul Tomar / Holger Sprengel
Managing Director and Co-founder
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DIGITAL TWIN TECHNOLOGY

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Pitch Presentations

Time to meet the innovators!

Pitch 5

Geosparc
Berdien De Roo

Belgium

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Smart water quality monitoring

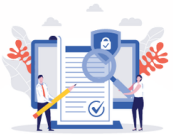
Geosparc

Berdien De Roo
Product manager

Geosparc – Make your policy's impact predictable

TOOLS TO ENABLE POLICY

DATA-DRIVEN POLICY MAKING
GEO PLATFORMS & OPEN DATA TECHNOLOGY
EFFECTIVE & SUPPORTED DECISION MAKING
SIMULATION TOOLS



DATA-DRIVEN INCIDENT MANAGEMENT

SMART ALARMING
DATA-DRIVEN MAINTENANCE PLANNING
DATA-DRIVEN ROUTE OPTIMIZATION
UPSTREAM & DOWNSTREAM TRACING ALGORITHMS

FACILITATE SMART PARKING & CHARGING

CHARGING INFRASTRUCTURE OPTIMIZATION
PARKING ENFORCEMENT ENABLING
PARKING GUIDANCE ENABLING
SMART MOBILITY HUBS
PARKING CONGESTION MANAGEMENT

GIS EXPERTISE

GEO TECHNOLOGY
GEO DATA VISUALISATION
TAILOR-MADE GEO REPORTING
GEO CONSULTANCY

SENSOR & DATA MONITORING

MONITORING:
- HARDWARE FUNCTIONALITY
- NETWORK QUALITY
- LATENCY & MISSED MESSAGES
- DATA QUALITY & TRENDS

INTEGRATION & FLEXIBILITY

MULTI-DEVICE
MULTI-NETWORK
MULTI-DATA SOURCE
SMART ALGORITHMS

PLATFORMS & APPLICATIONS

INTAKE PUBLIC DOMAIN
IOT DATA MIDDLEWARE
WATER TRACING
ENFORCEMENT ROUTING
ACCESS CONTROL

SPOTBOOKING
PARKTRACK
WATERTRACK

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BeProAct – Smart water quality monitoring

https://www.youtube.com/watch?v=nJSenTJzsf8

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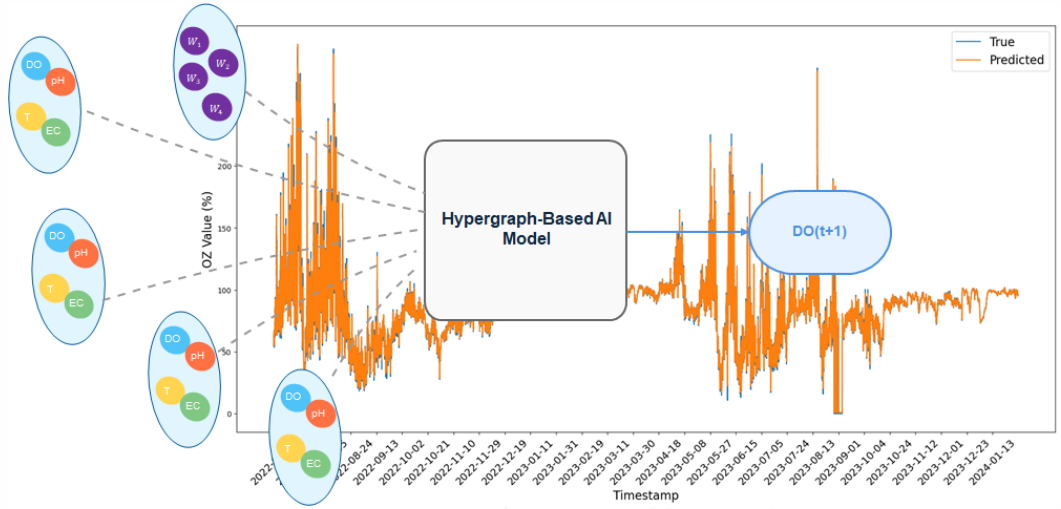
BeProAct – Smart water quality modeling

- Predicting Dissolved Oxygen for early response actions to prevent fish death
- Collaboration with Université de Lille
- LSTM-model
  - Multiple parameters
  - Hypergraph model for multiple stations and weather data
  - MAE ~ 1%



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Book a meeting with: Geosparc

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GEOSPARC

Up2Circ

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Pitch Presentations

Time to meet the innovators!

Pitch 6

Trc
Rohith Varma

UK

SustainableSolutionsMatch

City as a Service

Transforming City:
The Future of Urban Mobility with TRC

Rohith Varma | CEO
rohith@trc.city

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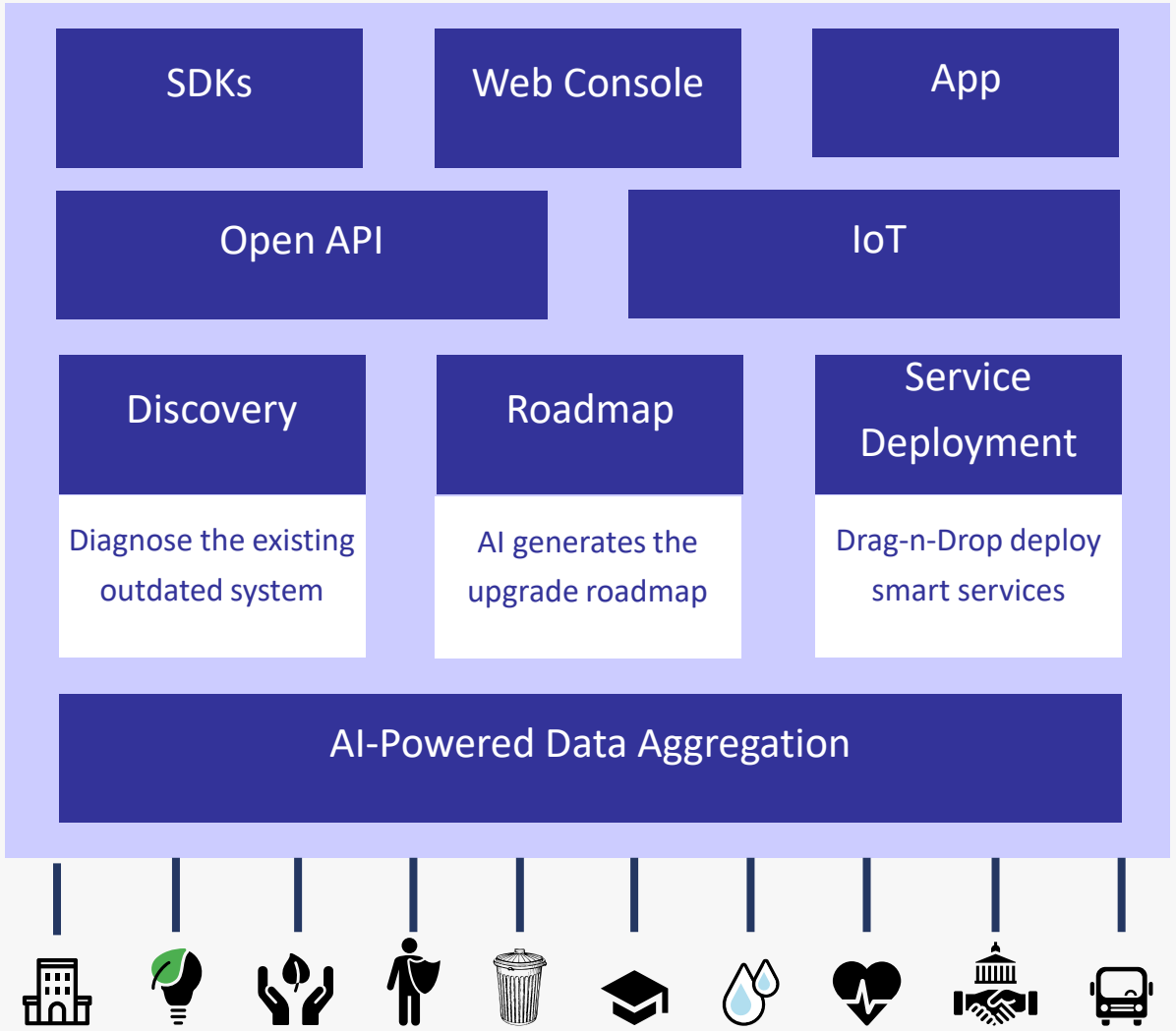
The Urban Mobility Challenge

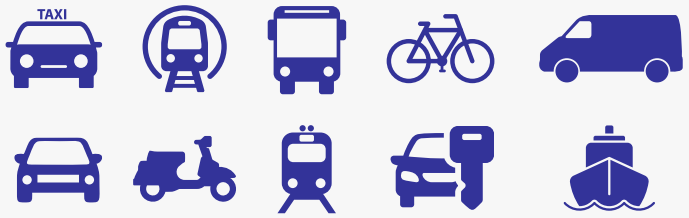
- Current challenges: congestion, operational inefficiencies, outdated systems, and financial strain.
- Urban areas contribute to 70% of global CO2 emissions despite occupying only 2% of the land.
- The need for a unified, data-driven approach to integrate metro, buses, bikes, and e-kick scooters.

Solution

Plug-n-Play | SaaS platform

Centralizes all essential city services, providing real-time data insights and analytics to city managers.





Transport Provider

User

Cost-Efficient & Personalised Services

Data Control

Data control

More Revenue

Unified Payment System

More Revenue

Ticketing and Payment

Insurance Company

More Revenue

MaaS Insurance

trc

Comprehensive Route Planning

User Demand

Route Planning

Research Source

Revenue & Reputation

University and Researcher

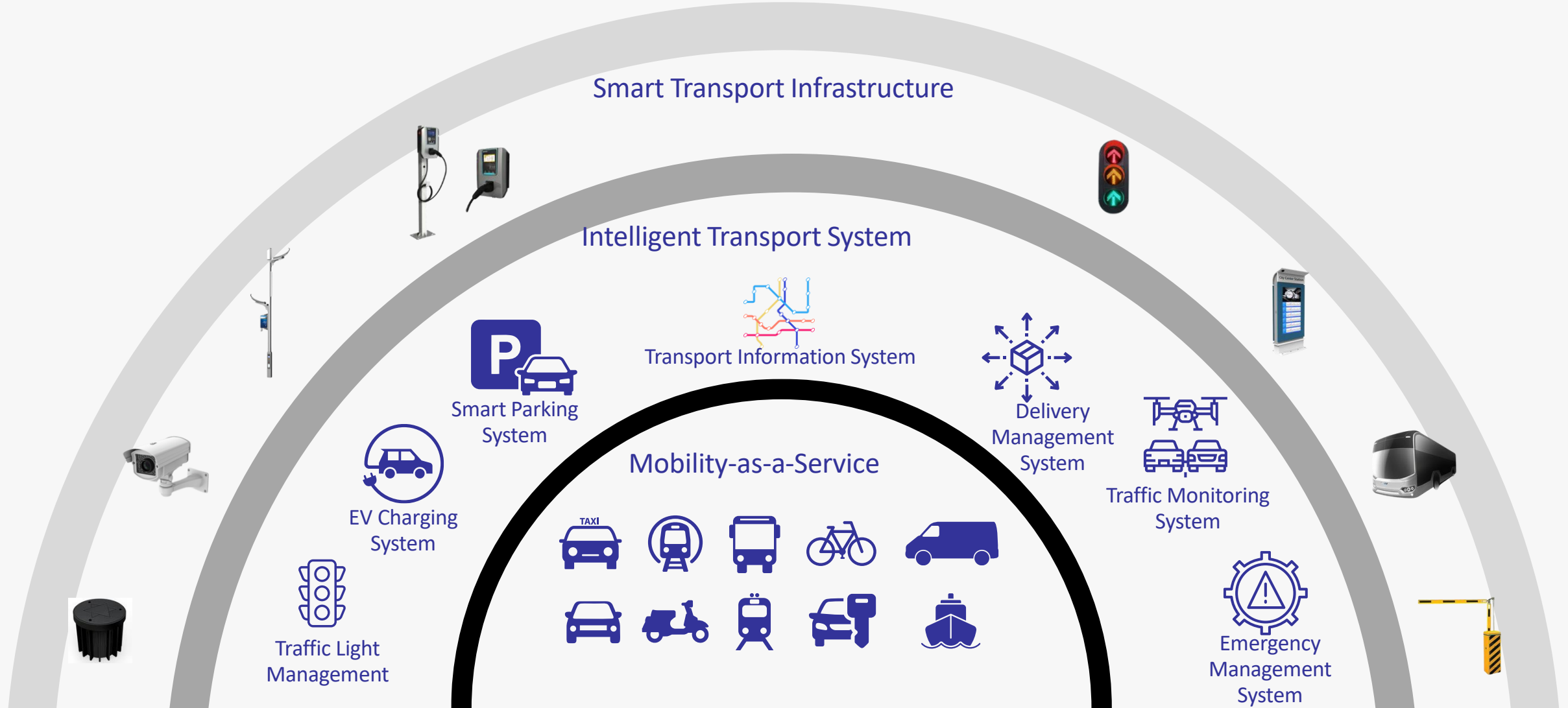
Legal & Policy Support

Sustainable Development & Proper Tax spending

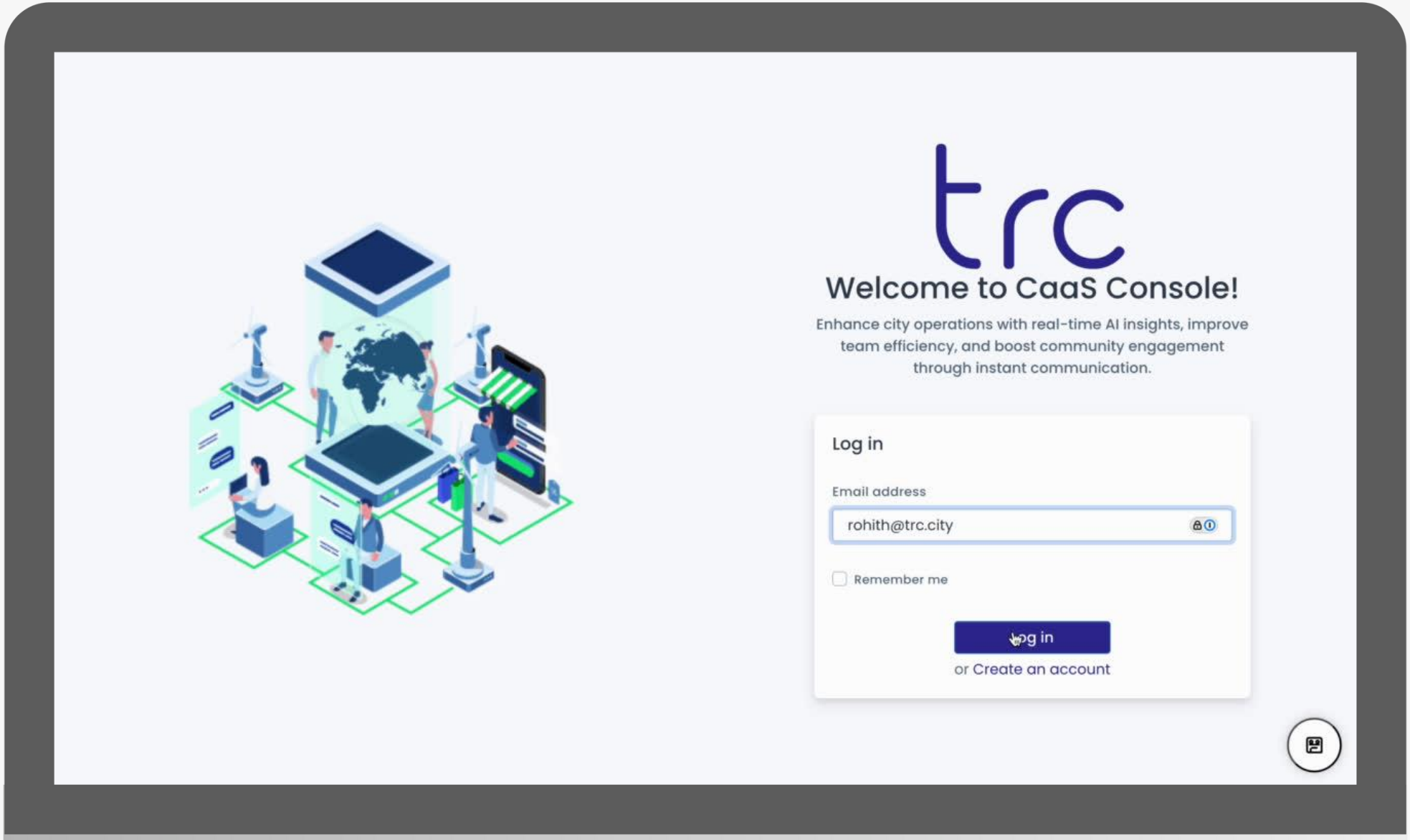
Central Government

Solution - Smart Transport

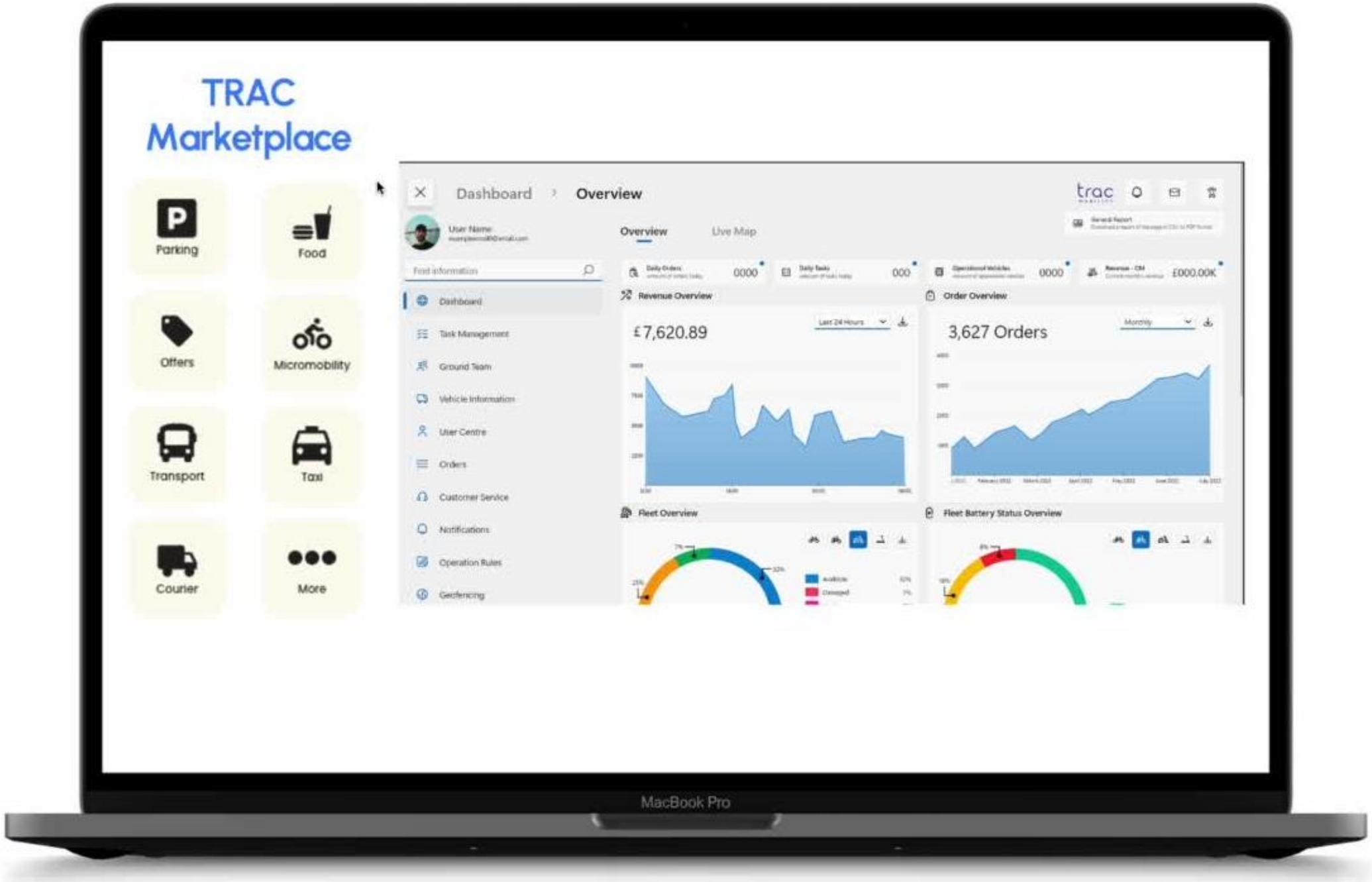
Smart Transport: Includes solutions like Mobility-as-a-Service (MaaS), Demand-Responsive Transport (DRT), and Smart Parking, which optimize traffic flow, reduce emissions, and enhance public transportation efficiency.



Smart Transport



Product- Demo



Live in 33 cities

Money Saved

€10,300,000

LOI's

5

Devices Connected

1,334,000+

- 7-Year Infrastructure Partner
- Reduced Costs by 20%

KAEC
مدينة الملك عبدالله الاقتصادية

- 10-Year Contract
- Value: $20 million
- Insuretech Data Platform*

hopon

أرامكو السعودية
saudi aramco

VPM
VALET & PARKING MANAGEMENT

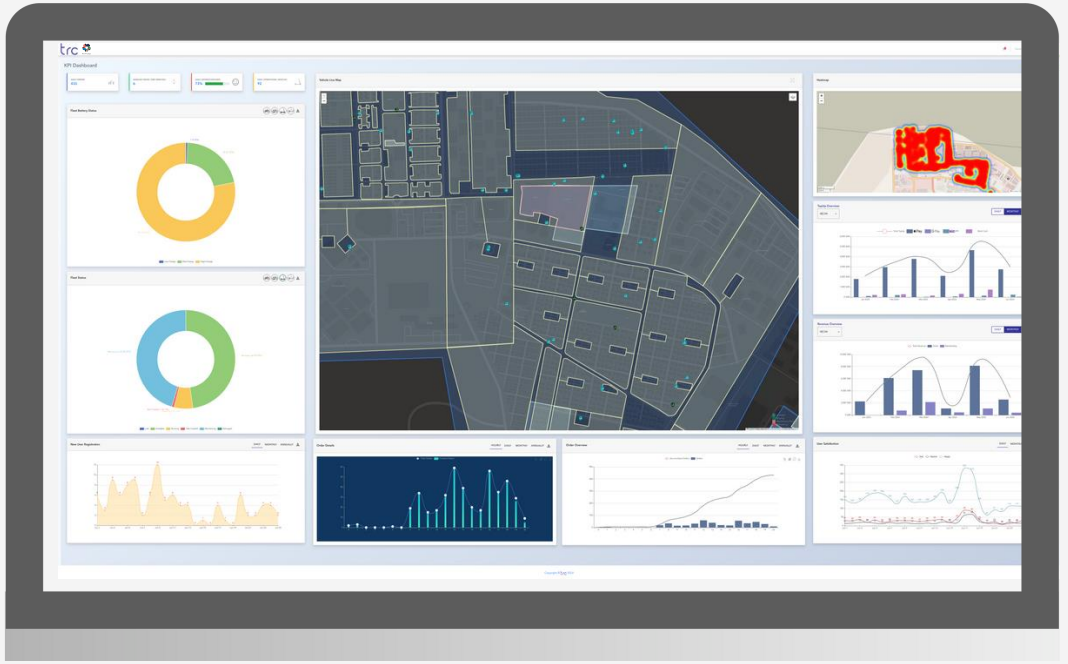
rzeszów
capital of innovation

جامعة الملك عبدالله للعلوم والتقنية
King Abdullah University of Science and Technology

*In Progress

Case Study - NEOM

- Implementation: TRC's tech deployed micro-mobility solutions in NEOM, enhancing urban transit efficiency and accessibility.
- Impact: Improved traffic flow, reduced emissions, provided data-driven insights for city planning.
- Value Added: TRC's platform processed 50,000 daily rides, generating $million in monthly revenue, contributing to a sustainable and smart urban ecosystem in NEOM.



Thank you for your viewing

Rohith Varma | Founder
rohith@trc.city
www.trc.city

Partners Welcomed

Urban Researchers

Municipal Collaborators

IoT and Tech Innovators

Sustainability Leaders

sustainable ventures

GROW LONDON | LONDON & PARTNERS
POWERED BY

TECH NATION LIBRA

Funded by UK Government

Tenity

Pitch Presentations

Time to meet the innovators!

Pitch 7

VisibleCrossing
Bence Márta

Hungary

SustainableSolutionsMatch

SafeXOne

High precision intelligent pedestrian security system with IoT and Smart features

VisibleCrossing Ltd. / Hungary

Bence Márta

Embedded System Design Engineer / International Relations Manager

SafeXOne – increased visibility with light signals

- *Dangers are everywhere at zebra crossings*
- *Traditional measures are often not enough*
- ***SafeXOne** system relies on modern technology to reduce the risk of accidents:*
  Laser and LED technology
  Improves pedestrian visibility even in poor visibility conditions.

With SafeXOne, we offer a solution that ensures maximum attention and can prevent accidents.

SustainableSolutionsMatch

How the SafeXOne system works?

- ***SafeXOne*** *consists of four pillars mounted on the corners of pedestrian crossings*
- *Built-in sensors detect when pedestrians enter the crossing and activate warning signals*
- *During the day, a yellow* ***flashing LED light*** *gives drivers an early warning*
- *In poor visibility conditions,* ***additional laser lights*** *are used*
  - *creating a carpet above the crossing surface (~2 cm high)*
  - *Highlights the movement of the pedestrians*

SustainableSolutionsMatch

Advantages and innovations compared to conventional systems

- *SafeXOne can be installed almost anywhere without disturbing the pavement*
  - *wireless communication,* ***no need to work on the road surface***
- *No mains power, can be powered by solar*
- ***Eliminates the most dangerous conditions*** *for pedestrian crossings at the same time:*
  - *At dusk, when street lights are not yet on but visibility is already severely reduced*
  - *When street lighting is inadequate or obstructed (e.g. dense vegetation, dark-coloured clothing)*
- *-When rainy or foggy weather conditions develop.*

Statistical and monitoring information

- *Central monitoring system via mobile data*
- *Monitoring of the system's operation from any*
- *Usage statistics and alert (battery status, sensor error)*
- *Sensor data analysis (ambient light)*

Traffic counting enhancements *- preparing the system to connect to infrastructure serving self-driving vehicles; (****V2X****),* ***Connectivity to Smart City****.*

SustainableSolutionsMatch

Invitation for cooperation

Unfortunately, the number of traffic accidents, including pedestrians hit by cars at designated pedestrian crossings, is increasing globally every year. As a global problem, our solution is relevant in any locality in any country in the world.

In order to increase pedestrian safety at as many crossings as possible, we are looking for partners with distributors, integrators and investors. We offer a wide range of support in all countries, not only at product launch but throughout the product lifecycle.

We want to reach out directly to people, municipalities, road owners, national decision-makers on transport issues, road safety associations in the targeted countries by making the SafeXOne system widely known.

SustainableSolutionsMatch

Sustainable and circular innovation needs good networks along the whole value chain. What kind of cooperation partners would you like to connect to beyond finding new customers?

Direct customers

Owners of the roads concerned, local authorities, road safety organisations
Subcontracting agreement (VisibleCrossing Ltd. providing the system, subcontractor doing the installation.

Potential resellers or distributors

Contractors or subcontractors of contractors involved in road construction,
Responsible for identifying potential customers and then installing the systems.
Responsible for obtaining local permits.

Joint venture

Manufacturing partially done in the target country
Know-How provided by VisibleCrossing Ltd.

SustainableSolutionsMatch

#EENCanHelp

Visit our website:

https://visiblecrossing.net

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Embedded System Design Engineer/CEO
VisibleCrossing Ltd.
bence.marta@visiblecrossing.hu / laszlo.nagy@visiblecrossing.hu
Mobile: +36 30/144 7454

een.ec.europa.eu

VISIBLE CROSSING
VISIBLE SAFETY

Up2Circ

enterprise europe network

Pitch Presentations

Time to meet the innovators!

Pitch 8

Sensoneo
Martin Kosák

Slovakia

SustainableSolutionsMatch

Data-driven waste management

Sensoneo

Martin Kosák
CMO

Municipal Waste Collection (Collection of waste produced by citizens and businesses)

Deposit Return Schemes (Nationwide collection of deposited packagings paid by vendors)

Industrial Waste Collection (Collection of waste produced in factories)

Extended Producer Responsibility (Collection of used products paid by vendors)

SustainableSolutionsMatch

Municipal Waste Collection (Collection of waste produced by citizens and businesses)

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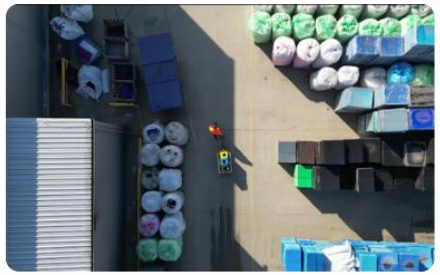

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enterprise europe network

Up2Circ

Municipal Waste Collection (Collection of waste produced by citizens and businesses)

Deposit Return Schemes (Nationwide collection of deposited packagings paid by vendors)

Buenos Aires Ciudad

City of Reykjavík

MADRID

Recycling Pfand Österreich

Re-turn

SPRÁVCA ZÁLOHOVÉHO SYSTÉMU

BCRS

RetuRO

REpont

Industrial Waste Collection (Collection of waste produced in factories)

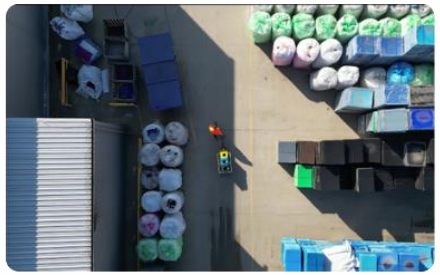
Extended Producer Responsibility (Collection of used products paid by vendors)

amazon

JOHN DEERE

SCHAEFFLER

asekol



SustainableSolutionsMatch

enterprise europe network

Up2Circ

$156

Annual savings per sensor

((S))

8

countries with Sensoneo DRS IT system

+2 in 2025/26

((SENSONEO))

A 90% collection rate, by the numbers:

An additional 9.3 *billion* containers recycled

Annual greenhouse gas reduction equivalent to eliminating 121k cars

Up to 34% less litter overall

SustainableSolutionsMatch

Sensoneo solution is available via a global network of partners

The presence of a partner in a region provides customers with an extra layer of customer service and local know-how. Our partners are system integrators, network operators, waste management companies, bin producers, consultancies, and others.

SustainableSolutionsMatch

#EENCanHelp

Book a meeting with: Sensoneo

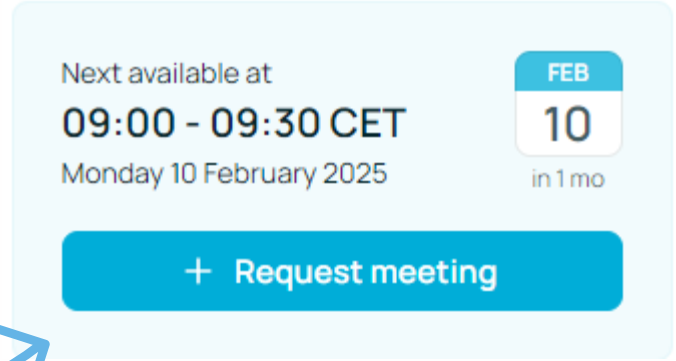
Martin Kosák
CMO
Sensoneo
martin.kosak@sensoneo.com

een.ec.europa.eu

Closing Remarks

A big thank you to all pitchers and attendees!
We appreciate your participation today.

If you'd like to connect with any of the pitching companies, please use the matchmaking tool to **book a meeting**!



Need support? **Enterprise Europe Network is here to help!**

Reach out to your local Network partner:

https://een.ec.europa.eu/local-contact-points

#EENCanHelp

Thank you!

Name session lead
Role
Organisation
Email

een.ec.europa.eu

Up2Circ

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