SENSE

Strengthening Cities and Enhancing Neighbourhood Sense of Belonging

24/02/2026

SENSE What is SENSE?

Designed by Freepik

SENSE helps cities become smarter, greener and more democratic by making urban planning more transparent, inclusive, and data-informed. It supports climate action, strengthens citizen trust, and positions Europe as a leader in digital and participatory innovation.

The project will:

- develop an **open, interoperable Citiverse framework** and reference architecture, **based on Gaia-X**.
- create a **replicable model for quickly implementing and expanding SENSE solutions** to additional cities across the EU
- launch **CitiVerse pilots in 2 Frontrunner cities (Cartagena in Spain, Kiel in Germany)** and design replication strategy in 6 fresh scenarios, aiming for adaptability at scale.
- produce a **detailed roadmap** to support rapid adoption of CitiVerse orchestrator in cities
- develop **policy recommendations and engage in pre-standardization activities**

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SENSE Consortium

1. **Libelium Lab** – Spain (*Coordinator*)
2. **City of Cartagena** – Spain
3. **DeltaDAO** – Germany
4. **Drees & Sommer** – Germany
5. **City of Kiel** – Germany
6. **Open & Agile Smart Cities (OASC)** – Belgium
7. **Mobility as a Service Alliance** – Belgium
8. **University of Galway** – Ireland
9. **Kiel Marketing** – Germany
10. **DunavNet** – Ireland

Pilot Cities

1. Cartagena (Spain)
2. Kiel (Germany)

Follower Cities

1. Murcia (Spain)
2. Arezzo (Italy)
3. Valongo (Portugal)

SENSE Timeline

Nov 2024

Official Project Launch

Technical design, data architecture, and prototyping

2025

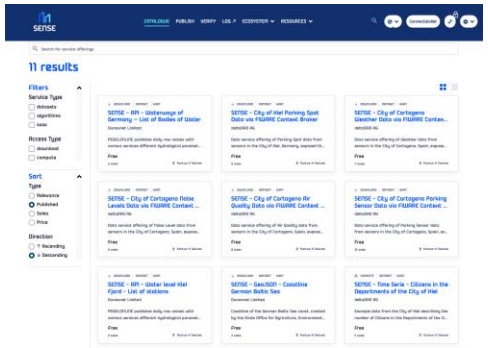
2026

Operational version and deployment in pilot cities

Final validation and policy recommendations

2027

31/05/2027



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SENSE Important deliverables

01

Data Space Integration

02

Operational Citiverse Components

03

SENSE Academy

04

Guide towards CitiVerse & Best Practices

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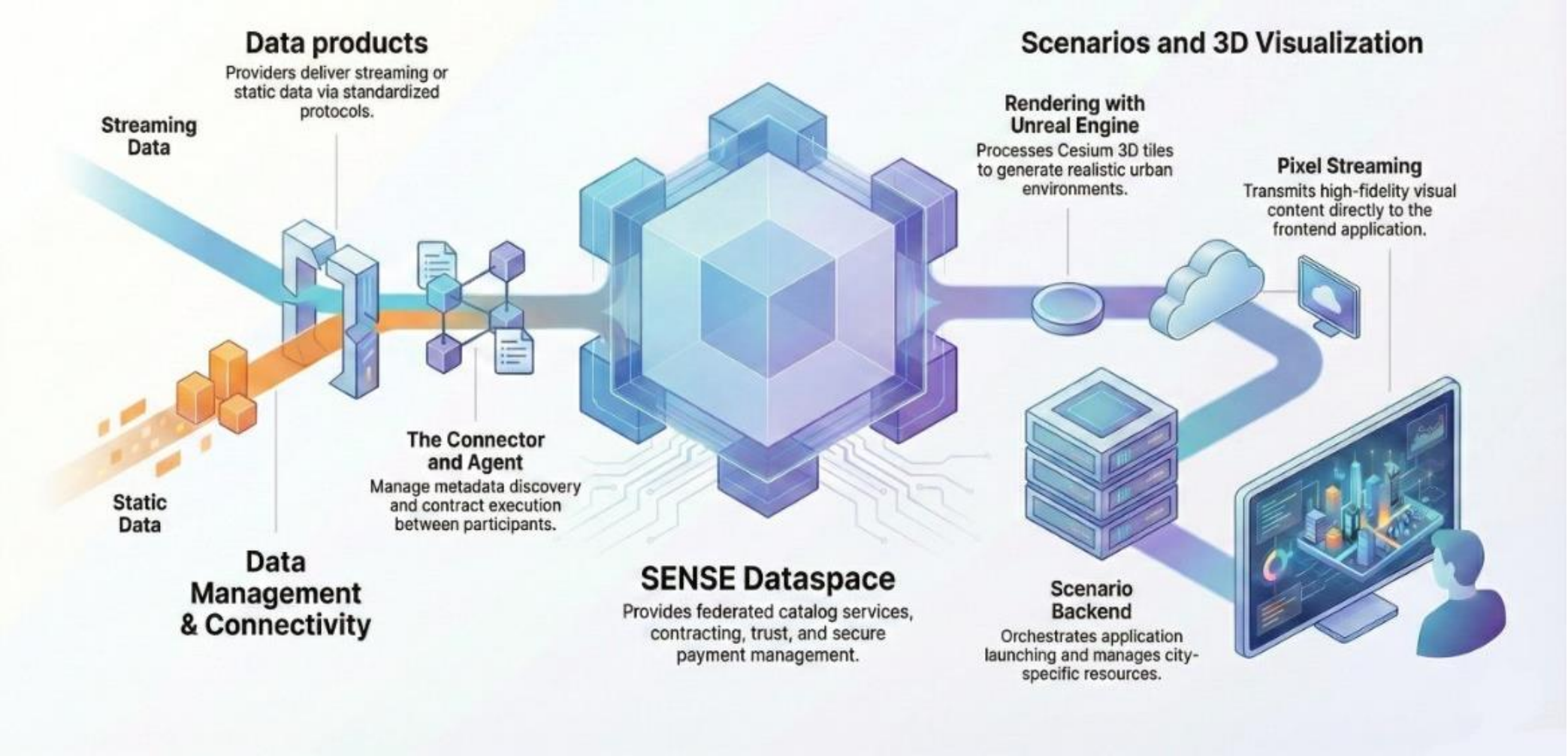
SENSE From Data to 3D Visualization



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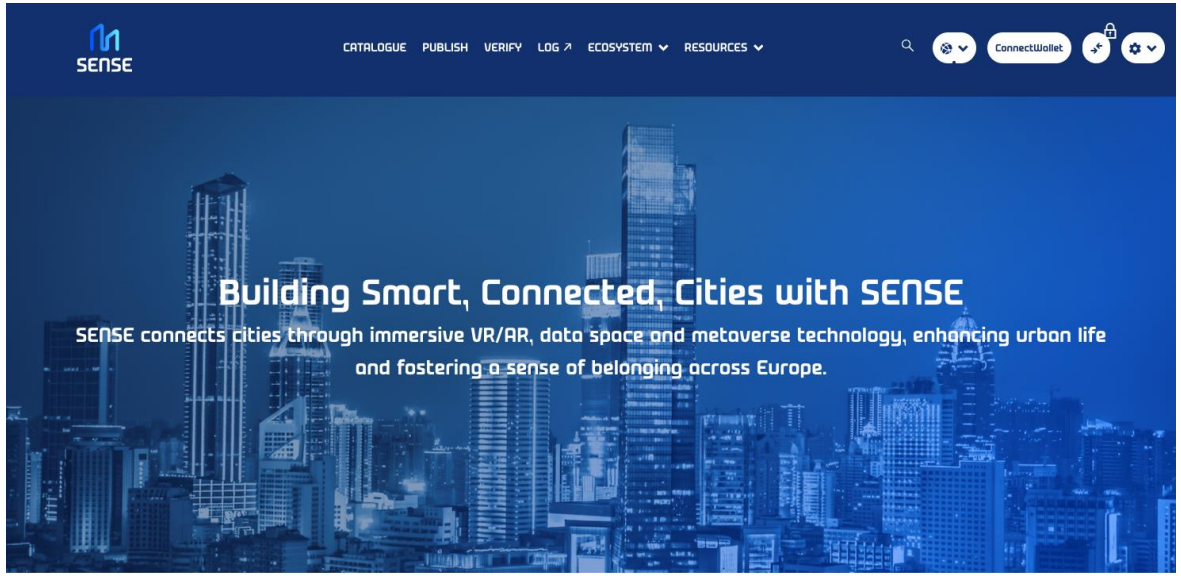
SENSE Dataspace



Goals

The project SENSE (Strengthening Cities and Enhancing Neighbourhood Sense of Belonging) will create a network of interconnected virtual worlds that mirror real cities, aligning with the EU Smart Communities initiative. The project focuses on utilising EU data infrastructure and complying with interoperability standards to develop practical use cases for CitiVerse, which will benefit local authorities and citizens.

READ MORE ↗

Pilot City Kiel, Germany

Civic Engagement Through Immersive Virtual Experiences The Kiel pilot will create an interactive virtual environment within CitiVerse, combining marine conservation education and cultural heritage exploration. Residents, tourists, and emergency services will engage in immersive scenarios, fostering awareness, resilience, and shared storytelling to strengthen community identity and participation.

READ MORE ↗

Pilot City Cartagena, Spain

Driving Sustainability Through Smart Innovation The Cartagena pilot will harness immersive technologies, citizen participation, and real-time data to support sustainable urban development. By enhancing city planning, promoting green mobility, and engaging SMEs, it fosters low-cost, scalable solutions that strengthen environmental policy, interoperability, and economic growth.

READ MORE ↗

Assets from Cartagena

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SENSE – City of Cartagena Weather Data via FIWARE C...
deltaDAO AG
Data service offering of Weather data from sensors in the City of Cartagena, S...
Free
11 sales | Pontus-X Testnet

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SENSE – City of Cartagena Noise Levels Data via FIWAR...
deltaDAO AG
Data service offering of Noise Level data from sensors in the City of Cartagena, S...
Free
8 sales | Pontus-X Testnet

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SENSE – City of Cartagena Air Quality Data via FIWARE Con...
deltaDAO AG
Data service offering of Air Quality data from sensors in the City of Cartagena, S...
Free
8 sales | Pontus-X Testnet

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SENSE – City of Cartagena Parking Sensor Data via FIW...
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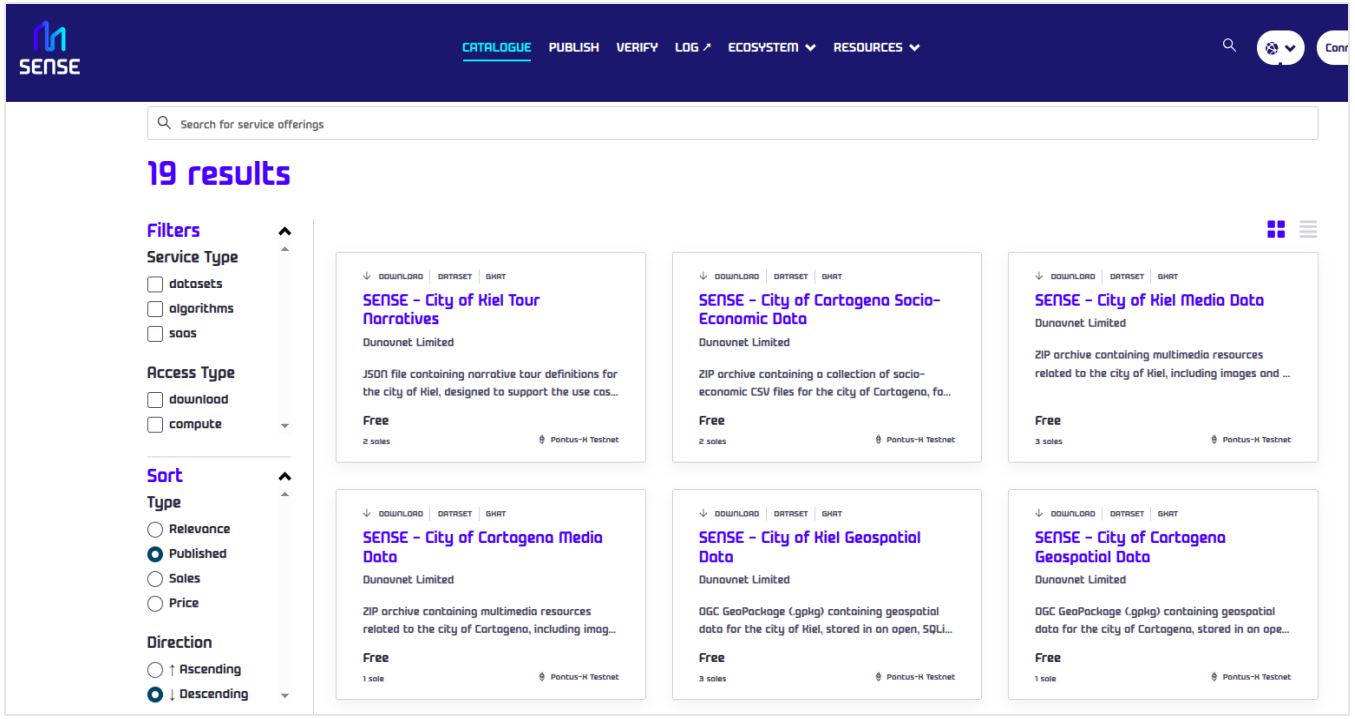
SENSE Dataspace



GitHub Open-Source Repository:
https://github.com/SENSE-EU

Dataspace Portal:
https://portal.senseverse.eu

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Pilots

SENSE will create interconnected virtual worlds to boost citizen engagement and foster a sense of urban belonging

Led by Frontrunner Cities **Kiel** (Germany) and **Cartagena** (Spain) and supported by Follower Cities across Europe Arezzo (Italy), Valongo (Portugal), Murcia (Spain) and Ulm (Germany), the project will implement **four real-world use cases**, serving as a crucial step toward the deployment of the CitiVerse.

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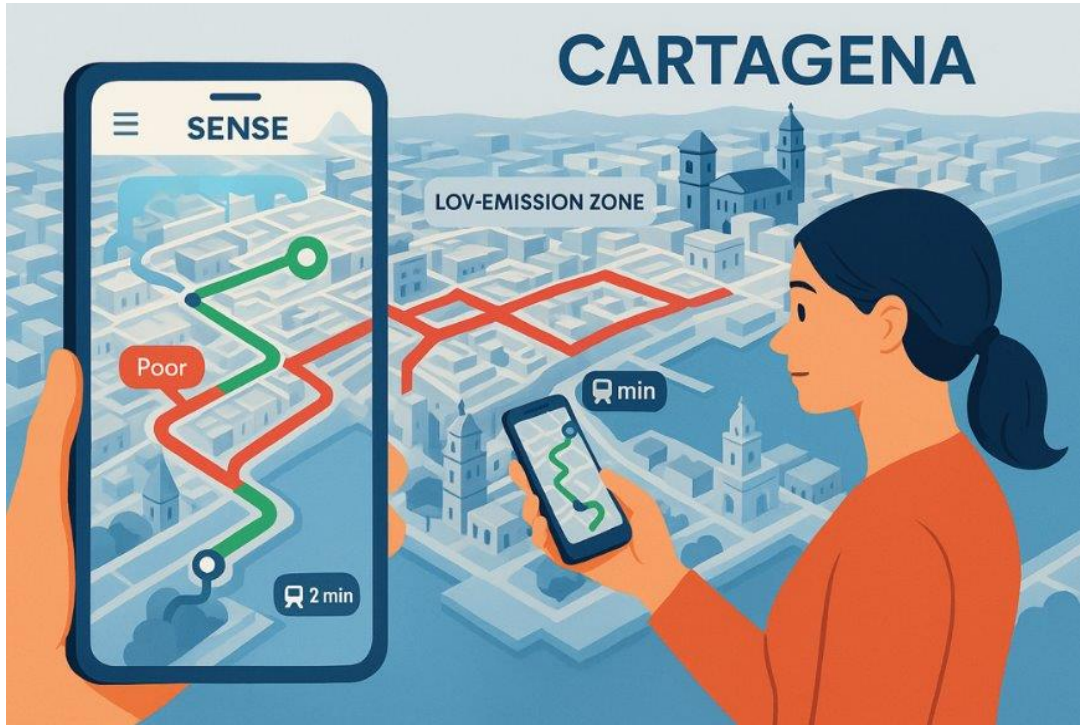
SENSE – City of Cartagena



Use case 1 - Smart Urban Mobility

Interactive 3D city twin consolidating traffic, public transport, LEZ rules and environmental indicators to support route planning for citizens/visitors and operational decision-support for city teams

- Shows prescriptive data (e.g., traffic simulation, air pollution),
- Dynamic data (IoT, sensors),
- Static data (e.g., Points of Interest)

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SENSE – City of Cartagena

SENSE – City of Cartagena

Use case 2 - Public Space, Environment & Quality of Life

3D “urban cohesion lens” that provides users with a clear 3D overview of the available indicators (public-space provision, environmental exposure and socio-demographic) supporting equitable planning and participatory discussion

- Static data (e.g., socio-economic data, geospacial data)
- Interactive web dashboards and visualizations for neighbourhood profiling, composite indices, and scenario comparison tools

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SENSE – City of Cartagena

SENSE – City of Kiel

Use case 3 - Hidden World

Immersive cultural experience built on an interactive 3D model of Kiel, combining free exploration with guided tours that reveal historical layers, narratives and “then vs now” comparisons

- Static data (e.g., POIs, archival media and 3D reconstructions)
- Interactive guided-tour orchestration (routes + stops)

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SENSE – City of Kiel

SENSE – City of Kiel

Use case 4 - Sea Level

Coastal 3D twin extending the city into waterfront and fjord areas, with markers and “digital stations” that mirror the SEALEVEL exhibition and explain marine/climate indicators for non-experts

- Static data (e.g., POIs, archival media and 3D models),
- Dynamic data (e.g., sensors)
- Interactive data visualizations and explanatory content presented via web dashboards and information panels

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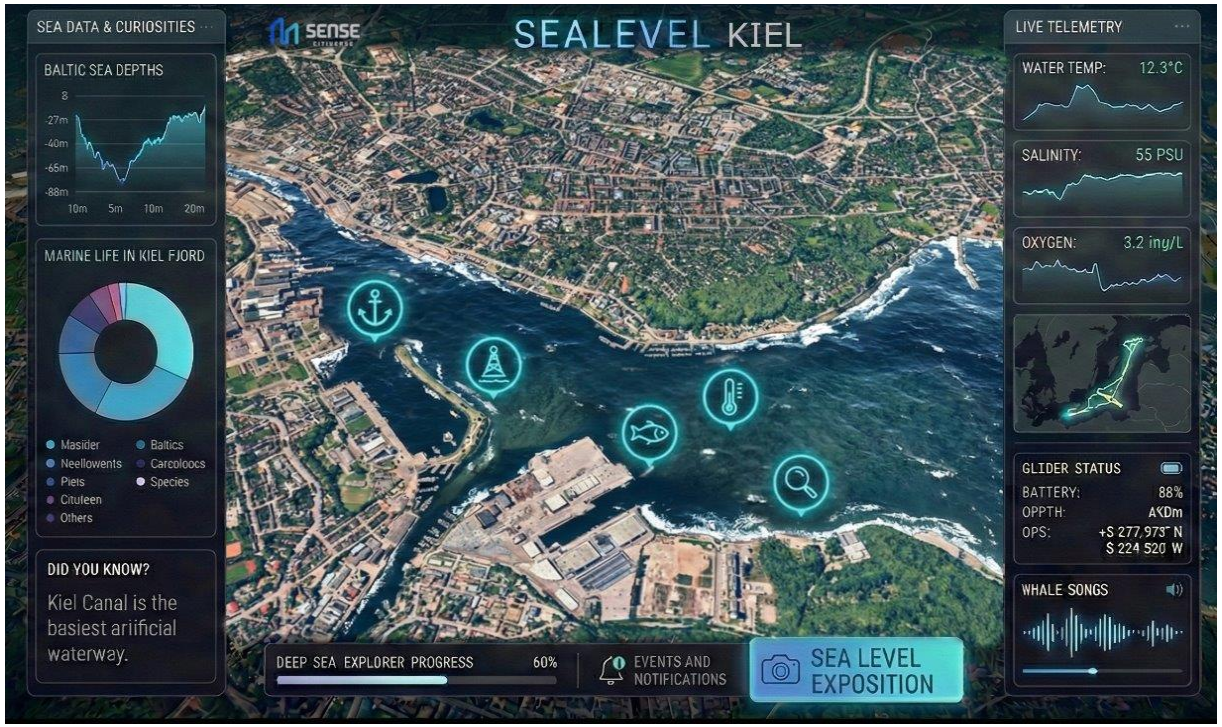
SENSE – City of Kiel



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