FinEst Centre
for Smart Cities

SMART CITY CHALLENGE 2025
Solution idea for the city challenges

Solution Idea Title Integrated Scalable City Platform

Planned pilot project duration – 24 months

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1. Which urban challenge or problem are you planning to provide a solution to?

Cities currently rely on fragmented systems to monitor environmental conditions, public-space activity, energy consumption, mobility flows, cameras, building metrics and GIS layers.

This fragmentation limits real-time situational awareness, slows decision-making, and prevents municipalities from progressing toward a functional Digital Twin.

The challenge addressed is the integration and unification of urban data, enabling continuous monitoring, early anomaly detection, operational efficiency and a scalable foundation for Digital Twin development.

The solution supports municipal needs such as:

- Real-time environmental monitoring
- Energy optimization and anomaly detection
- Public-space and infrastructure efficiency
- Unified management of heterogeneous data sources
- Development of scalable 3D models for simulation and planning

2. The solution you are proposing

What is the solution you are proposing for the challenge above?

INOWISE.IO Integrated City Platform is a modular, ready to-scale smart city platform designed to:

- **Integrate** existing sensors, municipal systems, databases, GIS layers and APIs, without replacing infrastructure
- **Unify** all urban data into a single real-time operational interface
- **Scale** towards a complete Digital Twin, including GIS, CAD and BIM interoperability

- Deliver **immediate impact** through dashboards, analytics, alerts, and real-time operational insights
- The platform creates a holistic 360° view of the city's assets, environmental conditions, mobility patterns, and building activity, enabling faster, data-driven decisions.

How does it solve the city challenge you target?

The solution addresses the challenge by:

- Creating a single source of truth for all urban data
- Providing **real-time monitoring** of environmental, energy, mobility and public-space indicators
- Enabling **automated alerts** for anomalies and safety thresholds
- **Reducing operational costs** through energy optimization and predictive insights
- Strengthening municipal governance with **actionable analytics and historical trend evaluation**
- Offering a **scalable path to Digital Twin** adoption, adaptable to each city's priorities

This integrated approach increases efficiency, transparency and responsiveness across municipal departments.

3. Innovation and piloting of your pilot solution.

Best current solutions and advantages of ours:
Current market solutions are domain-specific and isolated. INOWISE.IO is superior due to:

- Cross-domain system integration
- Complete data unification
- Scalable architecture for gradual expansion
- Immediate operational value
- High customization for municipal needs

What cities need for piloting:

- Access to municipal data sources and APIs
- Selection of 2–3 pilot areas or buildings
- Technical coordination for integration and use-case definition
- One Estonian and one international city/county as required

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How the piloting could work:

- Phase 1 — Integration (0–3 months): connect systems, sensors, GIS layers; configure KPIs
- Phase 2 — Digital Twin Layer (4–9 months): create initial 3D models; enable analytics and alerting
- Phase 3 — Validation (10–18 months): measure improvements in energy, safety, operations and environment
- Phase 4 — Scaling (18–24 months): extend to additional districts or domains; prepare long-term roadmap

Team capabilities and TalTech collaboration:

INOWISE.IO provides expertise in IoT, cloud, integration and real-time analytics, along with experience building scalable city platforms and Digital Twins.
TalTech contributes research expertise in smart cities, predictive modelling, simulation, impact assessment, sustainability, mobility, and energy.

4. Expected impact of your pilot solution.

Impact on cities:

1. Reduced fragmentation through unified data
2. Higher operational efficiency and lower costs
3. Improved situational awareness and responsiveness
4. Stronger data-driven decision-making

Impact on sustainability:

1. Energy savings through monitoring and anomaly detection
2. Enhanced environmental performance tracking
3. Better support for climate and resilience strategies

Impact on citizens:

1. Safer, better-managed public spaces
2. More reliable and efficient municipal services
3. Greater transparency and improved overall urban experience