Turkish SME seeks a European R&D partner specialised in environmental sensing technologies for an AI-powered urban monitoring platform under the EUREKA Programme.

Summary

Profile type	Company's country	POD reference
Research & Development Request	**Türkiye**	**RDRTR20261104022**
Profile status	**Type of partnership**	**Targeted countries**
PUBLISHED	**Research and development cooperation agreement**	**• All countries**
Contact Person	**Term of validity**	**Last update**
Enrico FRANZIN	**4 Nov 2026** **4 Nov 2027**	**4 Nov 2026**

General Information

Short summary

A Turkish technology SME and a Spanish SME are preparing a Eurostars proposal for an urban environmental intelligence platform combining mobile sensors on public transport, fixed air/noise monitoring, Edge AI, forecasting and digital twins. They seek an eligible European SME to lead a dedicated R&D work package, preferably in environmental sensing hardware and calibration; digital twins or smart mobility expertise are also relevant.

Full description

Urban air pollution and environmental noise change rapidly across streets and transport corridors, while conventional monitoring relies mainly on sparse fixed stations. A Turkish technology-oriented SME and an existing Spanish SME consortium partner are preparing a Eurostars R&D proposal to develop and validate an integrated, modular urban environmental intelligence platform. The Turkish SME contributes to the concept and integration of environmental data, AI-enabled analytics and urban decision-support functions; specific prior commercial deployments are not claimed.

The proposed platform will combine fixed monitoring points with mobile sensing units deployed on buses, trams and other public transport vehicles. Intended measurements include PM2.5, PM10, NO_2 , O_3 , CO, CO_2 , temperature, humidity and environmental noise. Time-stamped and georeferenced readings will be integrated with traffic, public-transport, meteorological and geospatial datasets to produce dynamic exposure maps and short-term forecasts. Edge AI will support local preprocessing, anomaly detection, sensor-quality assessment and calibration.

An urban environmental digital twin will represent current conditions and explore intervention scenarios such as route changes, traffic restrictions, low-emission zones and fleet electrification. AI-assisted interfaces, including planned agentic and language-model functions, will help users interpret evidence and compare options, with operational decisions remaining subject to human oversight. Intended users include municipalities, environmental authorities and public-transport operators.

Partner Search: The consortium seeks one additional eligible European SME able to own a substantive, complementary R&D work package. Priority is an environmental sensing hardware developer capable of designing and validating rugged mobile/fixed air-quality and noise devices, integrating particulate/gas sensors, embedded electronics, calibration, low-power communications and field prototypes. Alternative profiles are an SME specializing in urban digital twins/GIS/simulation or an SME specialising in smart mobility, transport-data integration and access to operational pilots.

The partner must undertake genuine co-development, integration, testing and cross-border validation, not simply supply off-the-shelf equipment. Pilots are envisaged in Türkiye and at least one EU setting; access to buses, trams or a defined urban test area is advantageous. The R&D will evaluate data quality, interoperability, technical feasibility, transferability and potential commercial scalability. The planned target is Eurostars-3 Call 12 (deadline 4 March 2027), subject to consortium confirmation.

Advantages and innovations

The novelty is the combination of dense mobile measurements from public transport with fixed stations, rather than relying only on sparse stationary monitoring. The proposed integrated approach covers air pollutants and noise simultaneously and joins these observations to mobility, weather and GIS information.

Key R&D advances sought: (1) robust, calibrated sensing across moving and stationary conditions; (2) Edge AI for data-quality checks, anomaly detection and efficient preprocessing; (3) dynamic mapping and short-term predictive analytics; (4) a city-scale environmental digital twin for evidence-based what-if mobility scenarios; and (5) explainable AI-assisted decision support with human oversight.

The architecture is intended to be modular and interoperable, supporting pilots in different European urban environments. Expected outcomes are validated prototypes, documented integration interfaces, comparative pilot evidence and a credible path to deployment for city authorities and transport operators. These are R&D objectives, not claims of already demonstrated performance.

Technical specification or expertise sought

Environmental Sensor and IoT Hardware Partner: R&D in PM2.5/PM10, NO_2 /O_3 /CO/CO_2 and environmental-noise sensing; embedded electronics; sensor calibration, drift compensation and field validation; GNSS/time synchronisation; Edge processing; LoRaWAN/cellular IoT; power management; ruggedised vehicle-mounted and fixed enclosures; prototype production and field testing. Ability to develop mounting and operating approaches for buses/trams is highly desirable.

Smart Mobility & ITS Partner: fleet/route data, transport APIs, vehicle telemetry, mobility analytics and access to public-transport or defined urban pilot sites.
AI Modelling Partner: GIS, spatial interpolation, real-time geospatial data fusion, pollution/noise modelling, predictive analytics, traffic/public-transport simulation and scenario evaluation.

All candidates should demonstrate capacity to lead an independent R&D work package, allocate technical staff, share integration and test results and participate in international consortium delivery. Relevant Eurostars eligibility and national funding conditions must be checked.

Stage of development

Under development

Sustainable Development goals

- **Goal 3: Good Health and Well-being**
- **Goal 17: Partnerships to achieve the Goal**
- **Goal 9: Industry, Innovation and Infrastructure**
- **Goal 11: Sustainable Cities and Communities**
- **Goal 13: Climate Action**

IPR Status

IPR Notes

IPR Notes

Partner Sought

Expected role of the partner

The selected partner will jointly define requirements and lead a dedicated R&D work package with clear technical deliverables, milestones and measurable validation criteria.

For the preferred sensing-hardware profile, expected tasks include sensor selection and integration; embedded/Edge architecture; mechanical and electrical design of mobile/fixed prototypes; connectivity and power design; laboratory and in-situ calibration; quality-control methods; interface specifications; and pilot deployment/maintenance. Deliverables may include functioning prototypes, calibration protocols, data-quality reports and technical documentation.

For a digital-twin partner, tasks would instead focus on the geospatial model, data ingestion, forecasting/simulation modules and intervention-scenario validation. For a mobility partner, tasks would focus on operational transport-data integration, access to buses/trams and routes, pilot execution and evaluation of mobility interventions.

Across all profiles, the partner will participate in system integration, shared test planning, cross-country validation in Turkey and an EU environment, exploitation planning and preparation of the joint Eurostars application. The role must involve genuine collaborative R&D rather than a commercial supply arrangement.

Type of partnership

Research and development cooperation agreement

Type and size of the partner

- **R&D Institution**
- **SME <=10**
- **Other**
- **Big company**
- **SME 11-49**
- **SME 50 - 249**

Call Details

Framework program

Eureka

Call title and identifier

Eurostars Call 12 for projects

Submission and evaluation scheme

Anticipated project budget

Coordinator required

No

Deadline for EoI

26 Feb 2027

Deadline of the call

4 Mar 2027

Project duration in weeks

24

Web link to the call

https://www.eurekanetwork.org/programmes-and-calls/eurostars/eurostars-call-12-for-projects-deadline-march-2027/

Project title and acronym

AEROTWIN – Urban Environmental Intelligence Platform

Dissemination

Technology keywords

- **01003003 - Artificial Intelligence (AI)**

Market keywords

- **09001007 - Other transportation**

Targeted countries

- **All countries**

Sector groups involved