Neapolis University Pafos

Course Code: IS507
Course Title: Disruptive Technologies
Audience Instructor: Georgios Sklias

EU Funding Concept Note for Your Start-Up

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1 Introduction

Search for an EU programme/call that: Is currently open (or was open recently), and Is realistically relevant to your start-up's sector and activities. Examples of funding programmes (non-exhaustive): Horizon Europe, Erasmus+, Digital Europe, LIFE, Interreg, etc.

1.1 Startup

Sector: IT Solutions for Smart Data Analytics in Sustainable Country Development

Target Market: EU-countries governments and related public sector organisations

Products/Services: AI-powered Data Analytics Platform for Environmental and Urban Planning

Activities: Development, Deployment, and Support of AI-driven Data Analytics Solutions

Unique Selling Proposition (USP): Cutting-edge AI technology tailored for sustainable development needs of public sector entities

1.2 Selected Call

https://interreg.eu/calls-for-projects/interreg-romania-bulgaria-opens-a-call-for-projects-of-strategic-importance/

Programme: Interreg Romania-Bulgaria. Call 6 - Call dedicated to the operations of strategic importance addressing the navigability and rail infrastructure.

1.3 Relevance to Startup

The selected call aligns with our startup's focus on providing IT solutions for sustainable country development. By leveraging our AI-powered data analytics platform, we can contribute to enhancing the navigability and rail infrastructure between Romania and Bulgaria. Our technology can help analyze environmental impact, optimize routes, and improve overall infrastructure planning, making us a suitable candidate for this funding opportunity.

2 Concept note: Interreg Romania-Bulgaria Call 6

Title: AI-Driven Data Analytics for Enhancing Navigability and Rail Infrastructure between Romania and Bulgaria

Funding Programme Deadline: 22nd December 2025

Priorities Addressed by the project A well-connected region.

Description of the Idea Include background information and an assessment of the particular needs or challenges of the target group.

Background: The Romania-Bulgaria cross-border region faces significant challenges in developing sustainable, climate-resilient, and intelligent transport infrastructure, particularly concerning navigability along the Danube River and rail connectivity. Current infrastructure planning lacks integrated data analytics capabilities, resulting in suboptimal resource allocation, environmental impact assessments, and strategic decision-making.

Assessment of Needs: The target group—comprising Romanian and Bulgarian governmental bodies, transport authorities, and infrastructure agencies—requires advanced technological solutions to:

- Analyze environmental impact of infrastructure projects on ecosystems and climate
- Optimize route planning for both rail and waterway transport
- Predict infrastructure maintenance needs using predictive analytics
- Integrate multimodal transport data for enhanced TEN-T network connectivity
- Support evidence-based policy decisions with real-time data visualization
- Ensure compliance with EU climate resilience and sustainability standards

Challenges: Key challenges include fragmented data sources, lack of cross-border data integration, limited AI/ML expertise in public sector organizations, and insufficient tools for scenario modeling and impact assessment. Our AI-powered platform addresses these gaps by providing an integrated, intelligent solution tailored to the specific requirements of cross-border infrastructure development.

Objectives Make sure they (a) Respond to the selected priorities and (b) Respond to the needs or challenges specified above

Objective 1: Develop and deploy an AI-powered data analytics platform specifically designed for cross-border infrastructure planning, focusing on navigability and rail connectivity between Romania and Bulgaria, contributing to Specific Objective 3.2 (sustainable, climate-resilient, intelligent mobility).

Objective 2: Enhance decision-making capacity of Romanian and Bulgarian transport authorities through advanced data visualization, predictive modeling, and scenario analysis tools that integrate environmental, economic, and social impact assessments.

Objective 3: Improve access to TEN-T networks by optimizing intermodal connectivity between rail and waterway infrastructure through AI-driven route optimization and capacity analysis.

Objective 4: Build institutional capacity in AI and data analytics within cross-border public sector organizations through knowledge transfer, training programs, and establishment of sustainable data-sharing protocols.

Objective 5: Demonstrate measurable improvements in infrastructure planning efficiency, environmental sustainability, and cross-border cooperation through pilot implementation and comprehensive monitoring of key performance indicators

Activities Describe the activities that the project will undertake to produce the envisaged results

Activity 1: Needs Assessment and Data Collection (Months 1-6)

- Conduct comprehensive stakeholder consultations in Romania and Bulgaria
- Map existing data sources and infrastructure planning processes
- Define technical requirements and performance indicators
- Establish data-sharing agreements and protocols

Activity 2: Platform Development and Customization (Months 4-18)

- Develop core AI/ML algorithms for infrastructure analysis
- Create integrated database architecture for cross-border data
- Build user-friendly dashboards and visualization tools
- Implement predictive maintenance and optimization modules
- Conduct iterative testing and refinement with end-users

Activity 3: Pilot Implementation (Months 12-24)

- Deploy platform in selected pilot regions/corridors
- Apply analytics to specific navigability and rail projects
- Monitor performance and gather user feedback
- Conduct environmental impact assessments using the platform

Activity 4: Capacity Building and Training (Months 6-30)

- Design and deliver training programs for public sector staff
- Organize cross-border knowledge exchange workshops
- Develop user manuals and technical documentation
- Establish helpdesk and ongoing support mechanisms

Activity 5: Evaluation and Sustainability Planning (Months 24-36)

- Conduct comprehensive impact evaluation
- Document best practices and lessons learned
- Develop sustainability and scaling strategy
- Disseminate results to wider stakeholder community

Project results tangible deliverables of the project (such as curricula, pedagogical and youth work materials, open educational resources, IT tools, studies, peer-learning methods, etc.).

R1. AI-Powered Infrastructure Analytics Platform: Fully functional cloud-based platform with modules for data integration, predictive analytics, route optimization, environmental impact assessment, and real-time visualization dashboards. Platform includes API for integration with existing systems.

R2. Cross-Border Infrastructure Database: Comprehensive integrated database containing navigability data (Danube River), rail network information, environmental parameters, traffic flows, and socio-economic indicators for the Romania-Bulgaria cross-border region.

R3. Feasibility Studies and Impact Assessments: Three detailed studies: (1) Analysis of current infrastructure gaps and optimization opportunities; (2) Environmental and climate resilience impact assessment of proposed interventions; (3) Cost-benefit analysis of AI-driven planning versus traditional methods.

R4. Training Materials and Capacity Building Package: Complete training curriculum including user manuals, video tutorials, hands-on workshops, e-learning modules, and technical documentation in Romanian, Bulgarian, and English. Certification program for platform administrators.

R5. Policy Recommendations and Sustainability Framework: Strategic document outlining policy recommendations for AI adoption in infrastructure planning, data governance framework for cross-border cooperation, and sustainability plan for long-term platform operation and maintenance.

Key outcomes Make sure that the outcomes derive from the proposed Activities /Project Results and that, at the same time, answer the set objectives.

Outcome 1: Enhanced Infrastructure Planning Efficiency

- Reduction of infrastructure planning time by 30-40% through automated data analysis
- Improved accuracy of traffic flow predictions and capacity assessments by 25%
- Enhanced cross-border coordination with 50% faster data exchange between Romanian and Bulgarian authorities

Outcome 2: Improved Environmental Sustainability

- 20% reduction in environmental assessment time through AI-powered impact modeling
- Identification of climate-resilient infrastructure solutions with lower carbon footprint
- Better integration of environmental protection measures in infrastructure projects

Outcome 3: Strengthened Institutional Capacity

- At least 120 public sector professionals trained in AI and data analytics
- Establishment of 4 cross-border working groups for ongoing collaboration
- Sustainable data-sharing protocols adopted by partner institutions

Outcome 4: Improved TEN-T Network Connectivity

- Optimized multimodal transport routes connecting rail and waterway infrastructure
- Enhanced accessibility to TEN-T core network corridors
- Better integration of regional and local mobility with TEN-T networks

Outcome 5: Evidence-Based Policy Development

- Data-driven strategic documents for infrastructure development adopted by authorities
- Improved resource allocation based on predictive analytics and scenario modeling
- Enhanced transparency and stakeholder engagement in planning processes

Partners' profile Describe any specific requirement e.g. type of organisation needed (NGO, VET, etc.), and/or country of establishment, and/or complementary skills that we are looking for in the partnership (e.g. expertise in IT tools or in working with children etc.)

Lead Partner Requirements:

- Our startup (IT Solutions company) based in Romania or Bulgaria
- Expertise in AI, machine learning, and data analytics
- Experience in developing solutions for public sector or infrastructure projects
- Technical capacity for cloud-based platform development and maintenance

Required Project Partners:

Partner 1: Romanian Transport Authority or Infrastructure Agency

- Public sector organization responsible for transport infrastructure planning
- Access to relevant data sources and decision-making processes
- Capacity to pilot and adopt the platform
- Commitment to long-term sustainability

Partner 2: Bulgarian Transport Authority or Infrastructure Agency

- Counterpart to Romanian partner for cross-border coordination
- Similar mandate and capacity requirements
- Experience in EU-funded projects preferred

Partner 3: Research Institution or University

- Expertise in transport engineering, environmental science, or data science
- Capacity for impact assessment and evaluation research
- Located in Romania or Bulgaria
- Experience in knowledge transfer and capacity building

Partner 4: Environmental NGO or Sustainability Consultancy (Optional)

- Expertise in environmental impact assessment and climate resilience
- Knowledge of EU environmental standards and regulations
- Experience in stakeholder engagement and policy advocacy

Complementary Skills Needed:

- GIS (Geographic Information Systems) expertise
- Knowledge of Danube navigation and inland waterway management
- Rail infrastructure technical expertise
- Project management and EU funding experience
- Multilingual capabilities (Romanian, Bulgarian, English)
- Stakeholder engagement and communication skills

References

[1] K. Naznin, A. Al Mahmud, M. T. Nguyen, and C. Chua, "Chatgpt integration in higher education for personalized learning, academic writing, and coding tasks: A systematic review," *Computers*, vol. 14, no. 2, p. 53, 2025.