Interreg Danube Region

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HARMONMISSIONS

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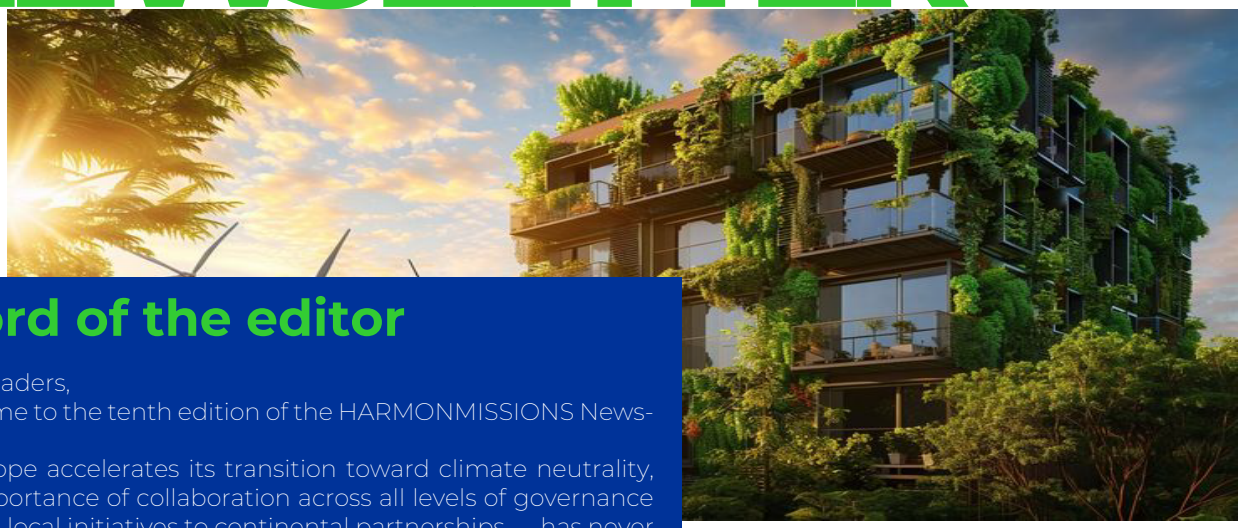
NEWSLETTER



Word of the editor

Dear readers,
Welcome to the tenth edition of the HARMONMISSIONS Newsletter!
As Europe accelerates its transition toward climate neutrality, the importance of collaboration across all levels of governance — from local initiatives to continental partnerships — has never been clearer. This edition showcases how science, innovation, and community engagement intertwine to shape the cities and regions of tomorrow.
In Košice, Slovakia, the SAM-SUD project demonstrates how artificial intelligence and Digital Twin technologies can unlock the hidden potential of public buildings, turning urban challenges into opportunities for sustainable growth. At the same time, the CapaCITIES 2.0 project amplifies cooperation across more than twenty-five European countries, strengthening the frameworks that help cities achieve the EU Mission for 100 Climate-Neutral and Smart Cities by 2030.
Both stories highlight a shared truth: achieving climate neutrality is not solely a technological pursuit but a collective endeavor — one that relies on knowledge exchange, inclusiveness, and determination. As we move toward 2030, may innovation continue to unite people, places, and purpose — shaping a sustainable future for Europe.

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• ANNOUNCEMENTS

SSPCR 2025: Smart & Sustainable Planning for Cities and Regions
Date: 9-12 Dec 2025, Bolzano (Italy)
Explore a leading forum on urban innovation and climate-neutral transformation in the EU. Join city leaders, planners, and researchers to discuss smart mobility, circular economy, and energy transition towards the goals of the EU Mission 100 Climate-Neutral and Smart Cities by 2030.
More about the event:
www.sspcr.eurac.edu

UPCOMING EVENTS

Join us for a two-day training on Horizon Europe and EU Missions 1 & 4!
We are pleased to announce that the **Public Institution REDEA**, within the framework of the HARMONMISSIONS project, will organize a two-day in person training titled: "**How to Write a Successful Project Proposal for the Horizon Europe Programme?"**

- Date: 5–6 November 2025
- Venue: Knowledge Centre of Međimurje County, Čakovec, Croatia

This training will provide key information and practical skills for preparing successful project proposals under the Horizon Europe programme, with a special focus **on EU Mission 1 – Adaptation to Climate Change and EU Mission 4 – Soil Health and Food.** Through hands-on exercises, practical examples, and useful tools, participants will enhance their understanding of proposal design and gain valuable insights to increase their chances of success in future Horizon Europe calls.
If you are unable to join us in Čakovec, stay tuned for upcoming **online events and training opportunities** organized within the HARMONMISSIONS project.

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Author: ARC Fund for the Harmonmissions Monthly Newsletter

From Idea to Innovation: The Popularisation of Scientific Climate Action

Scientific progress lies at the heart of climate neutrality; from carbon-neutral urban transport to powering cities with green energy, behind each large-scale environmental initiative is a novel scientific idea.

To transform ideas into tangible benefits for society, they must first be popularised and accepted. Thus, on the 30th of September 2025, the HARMONMISSIONS project was featured as a cornerstone of a demonstration event. With the aim of fostering knowledge exchange, the Knowhow Communities for Accelerating RTI Transfer in the Danube Region (RTIT>>) project event spotlighted the importance of HARMONMISSIONS' objective: to facilitate cooperation among stakeholders in the Danube Region and to increase awareness about Horizon Europe's climate-related Missions among experts and the general publike alike.

With the demonstration of RTIT>> tools for supporting research and technology innovation transfer in the Danube Region serving as the event's primary goal, the presence of both Horizon Europe's Missions 1: Adaptation to Climate Change and 4: 100 Climate-Neutral and Smart Cities, as well as, more specifically, the objectives of the HARMONMISSIONS project, guaranteed that participants would gain insight into the various means through which they may support the achievement of climate neutrality on a European level.

The event showcased the importance of linking science and practical innovation, and turning scientific ideas into societal well-being – a process undertaken by the HARMONMISSIONS project through its activity across the Danube Region. Both climate-focused Missions require a level of societal readiness and cohesion that may only be achieved through cooperation, harmonisation and capacity-building.

The fight against climate change cannot be undertaken in isolation, and the popularisation of HARMONMISSIONS' objectives beyond the confines of the project itself suggests that stakeholders and citizens are prepared and willing to contribute to a green European future.

A view of the Danube River

Author: SOVVA

HOW KOŠICE IS LEVERAGING AI AND DIGITAL TWINS FOR SUSTAINABLE ASSET MANAGEMENT

The European urban landscape harbors significant dormant potential within underutilized public buildings, a challenge that, for Košice, Slovakia, is a critical barrier to sustainable growth. With its public properties consuming a staggering 40% of the city's total energy, achieving the Net Zero goal demands a radical and precise intervention. The city's new European Urban Initiative project, SAM-SUD (Smart Asset Management for Sustainable Urban Development), provides the solution. It pioneers a revolutionary, data-driven methodology integrating AI and Digital Twin technology to transform the public property portfolio from an energy sink into a powerful driver of the European Green Deal and the Smart Cities Mission.

UNLOCKING DORMANT ASSETS AND DECARBONISATION

Košice, like numerous urban centres, is simultaneously grappling with two critical pressures: the management of a sprawling inventory of nearly 2,500 publicly owned buildings—many of which are currently vacant or underutilised—and the urgent imperative to decarbonise.

These underutilised assets create a significant fiscal burden in maintenance costs and represent a massive opportunity cost for social, economic, and environmental transformation. The challenge is intensified by recent major economic developments, such as the significant investment by Volvo, which is projected to generate an influx of 9,000 to 12,000 new jobs. This necessitates the rapid and strategic repurposing of infrastructure to support accelerated growth. Critically, the city's building stock is a major contributor to its carbon footprint, currently generating an estimated 766.5 thousand tons of CO_2 emissions from energy use and production. To meet its ambitious climate objectives, Košice must achieve an 80% reduction in these emissions.

The SAM-SUD project is the city's strategic response, founded on the principle that the most sustainable building is the one that already exists, provided it is intelligently repurposed and green-retrofitted. The project transitions the city's operational philosophy from traditional, slow, and opaque asset management processes to a sophisticated, systematic, and data-driven approach, fundamentally moving from reactive maintenance to proactive, strategic urban regeneration.

THE DIGITAL SOLUTION: AI AND DIGITAL TWINS

The core innovation of SAM-SUD lies in deploying a highly integrated, AI-powered digital framework within a comprehensive urban regeneration model, positioning Košice at the forefront of smart city development. This framework is anchored by two primary, synergistic components.

The first is the AI-driven asset optimisation toolset, which is responsible for the automated mapping, assessment, and generation of optimal repurposing recommendations for public assets. This modernizes asset management by providing a transparent, systematic method for data-driven decision-making, rigorously evaluating each property against critical urban planning needs, feasibility studies, and sustainability criteria.

Complementary to this is the novel digital twin platform for participatory planning. This platform offers a virtual, 3D representation of the city, specifically engineered for collaborative urban planning. It effectively serves as a living laboratory for urban interventions, allowing city officials, stakeholders, and citizens to visualize and interact with urban spaces in both their current and potential future states. To ensure its fidelity, the twin's development is underpinned by a high-precision mobile mapping platform utilizing LIDAR and SLAM to capture the highly accurate spatial data essential for detailed and robust models.

Crucially, this holistic digital framework transcends a mere inventory system; it functions as a powerful scenario visualization engine. It enables city planners to accurately model and predict the holistic impact of repurposing decisions on key urban systems—including energy consumption, mobility patterns, and social inclusion—before any physical work commences. This advanced predictive capability ensures optimal resource allocation, minimizes project risk, and maximizes both environmental and social benefits.

POSITIONING KOŠICE ON THE GLOBAL INNOVATION MAP

The SAM-SUD project is strategically positioned within the global innovation landscape, serving as a catalytic platform for top-tier applied research and aligning with the state-of-the-art in urban digital twin development worldwide.

Global research confirms that the highest-impact digital twins integrate three core elements: real-time data synchronization, AI-driven predictive analytics, and stakeholder co-creation tools. Košice's methodology directly addresses this by seamlessly linking predictive models for asset re-use with a dynamic, high-fidelity modeling capability. This transition from passive modeling to a dynamic, "living" digital twin represents the current global frontier in urban technology. While many specialized platforms are currently proving the digital twin concept, Košice's implementation is novel in its specific focus on mass public asset optimization for climate neutrality. It uniquely links the micro-level of building performance (analyzing energy flows, thermal loads, and retrofitting impact) to the macro-level of city-wide strategic planning and participatory governance.

The use of LIDAR/SLAM data acquisition is critical to this distinction, as it achieves the necessary level of geometric accuracy required for advanced energy simulations—a significant technical achievement in itself. This initiative directly fuels the Technical University of Košice and local SMEs with real-world, high-volume data and complex problem sets. This collaboration empowers them to develop and commercialize AI models and digital twin solutions that are immediately transferable and scalable, thereby elevating local research capacity to global standards.

The project's commitment to the quadruple helix model (government, academia, industry, and civil society) and the systematic transfer of its methodology to other European cities solidify Košice's role as a co-developer of next-generation smart city solutions.

FROM VACANCY TO VALUE AND SYSTEMIC CHANGE

The SAM-SUD initiative opens up unprecedented opportunities across public property use, energy management, and civic engagement. A direct impact on climate resilience is realized through the integrated focus on green retrofitting, the deployment of real-time energy monitoring and management systems, and the integration of nature-based solutions. The practical proof-of-concept for this approach centers on the comprehensive renovation of the historic building at Hlavná 57. This currently unused asset will be transformed into a multifunctional community hub, serving as a live testing ground for advanced green adaptation and sustainable building practices.

Furthermore, the project directly catalyzes profound institutional change within the municipality. The City of Košice will establish a new, dedicated Asset Management Unit within its government structure. This unit will be responsible for overseeing the systematic, data-driven repurposing of public assets and ensuring strategic alignment across all municipal stakeholders, thereby permanently embedding the developed tools into long-term infrastructure planning.

The combination of cutting-edge technological innovation, structural institutional reform, and tangible economic opportunity ensures that SAM-SUD delivers not just a set of digital tools, but a systemic and scalable model for next-generation urban governance.

More info: https://www.urban-initiative.eu/ia-cities/kosice/home

Author: Alina Bahna, UEFISCDI

CapaCITIES: Building National Support for Climate-Neutral Cities

The road to climate neutrality in Europe runs through its cities. Urban areas are both major contributors to greenhouse gas emissions and key testing grounds for innovative solutions. But cities cannot achieve climate neutrality on their own. They depend on national and regional authorities to create enabling frameworks, supportive governance structures, and coordinated action. This is the role of CapaCITIES project, a Horizon Europe Coordination and Support Action dedicated to helping governments provide stronger backing for their cities as they work towards the EU Mission for 100 Climate-Neutral and Smart Cities by 2030.

The first phase of CapaCITIES, launched in 2022, laid down the foundations for this collaborative approach. It brought together fifteen core countries, including Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Italy, Lithuania, the Netherlands, Poland, Portugal, Romania, Slovakia, Spain, Sweden, and Turkey, alongside supporting participation from Bosnia and Herzegovina, Malta, and Norway. Together, these countries began developing national platforms that linked ministries, agencies, cities, and research organizations in new ways. They established Transition Labs as interactive spaces where governance frameworks could be co-designed, and they created opportunities for national self-assessments to identify challenges and priorities. Training sessions, workshops, and peer-learning activities helped strengthen the capacities of public authorities. At the same time, CapaCITIES introduced the role of national and transnational ambassadors to promote the Cities Mission and ensure visibility for national initiatives within the wider European context.

This first phase demonstrated how much could be achieved when national governments worked hand in hand with cities and when experiences were shared across borders. It also made clear that there was appetite for a broader and more ambitious collaboration.

That ambition is now taking shape in CapaCITIES 2.0, which marks the project's second phase. Coordinated by UEFISCDI, Romania's Executive Agency for Higher Education, Research, Development and Innovation Funding, the new project runs from May 2025 to April 2027. Its partnership is much larger, with more than seventy organizations from over twenty-five European countries. The consortium includes national ministries such as Greece's Ministry of Environment and Energy, Italy's Ministry of Universities and Research, Norway's Ministry of Local Government and Regional Development, and Poland's Ministry of Climate and Environment. It also brings in leading research and innovation organizations like the Austrian Institute of Technology, VTT Technical Research Centre of Finland, the Centre Scientifique et Technique du Bâtiment in France, and Sweden's Royal Institute of Technology. Universities play a strong role too, with contributions from the Czech Technical University in Prague, Kaunas University of Technology in Lithuania, the Universidad Politécnica de Madrid, and the University of Bologna, among others. Complementing these are key European networks such as ICLEI Europe, Energy Cities, and ERRIN, alongside regional and local authorities including Region Île-de-France in France and the Canton Sarajevo Ministry of Physical Planning in Bosnia and Herzegovina.

The goals of this expanded second phase remain firmly aligned with the Cities Mission, but the scale of action has increased. CapaCITIES 2.0 will strengthen and expand the transnational alliance of public authorities, ensuring that national support for cities is more coordinated than ever.

It will continue to co-design and develop effective multi-level governance structures through Transition Labs and targeted interventions, but now across a much wider geographical scope. And it will work to align national efforts with other European and international initiatives for climate-neutral and smart cities, ensuring that the lessons learned are sustainable and that results extend well beyond the project's lifetime.

Over the coming two years, CapaCITIES 2.0 will therefore act as a catalyst for fast-tracking national support systems for cities. By creating stronger national platforms, improving governance structures, and connecting ministries with municipalities and researchers, it is helping to make the climate-neutral city vision a reality. What began as a project involving fifteen countries has now grown into a truly pan-European effort, one that demonstrates the power of collective action to shape a sustainable and resilient urban future. To learn more about the project , visit capacities.eu