MLUMSE NEWSLETTER #5

January – February 2026

EDITOR'S NOTE

Dear readers of the MLUMSE newsletter,

In this fourth issue, we reflect on an important milestone for our project: the MLUMSE Student Training held on 26 November at the Faculty of Sciences of Agadir. Designed as an intensive learning experience, the event brought together international partners, local faculty, and motivated students around a shared objective: strengthening the competencies of future professionals in land and urban management. Throughout the day, participants explored sustainable urban development, digital innovation, and practical applications such as digital twins.

The training held in Agadir reaffirmed MLUMSE's commitment to modernizing land and urban management education through collaboration, applied learning, and strengthened academic capacity across the Southern Mediterranean.

We invite you to follow us on our social media channels, where you will be regularly updated about all project-related activities.

We also encourage you to share your news and announcements with us. Our newsletter already reaches more than 185 recipients, and the number continues to grow each day.

You can send your contributions to: mlumse@geof.hr.

Kind regards,
Adnane Labbaci
Professor
Editor in chief MLUMSE Newsletter

European Commission

CONTEMPORARY URBAN PLANNING: FROM PRINCIPLES TO PRACTICE

This session presented an integrated view of how urban planning is evolving, contrasting traditional methods with contemporary approaches. Key themes included:

- Sustainable land use (mixed-use development, green city concepts)
- Circular economy principles and urban renewal (reuse of abandoned areas, revitalization of heritage zones)
- Climate-resilient cities (energy systems, hazard preparedness, mobility solutions)
- Sustainable mobility (congestion, pollution, walkability, and the 15-minute city model)
- A bridge toward smart cities and digital zones, highlighting the role of data, sensors, and digital infrastructure.

DIGITAL TECHNOLOGIES FOR URBAN RESILIENCE AND DECISION-MAKING

The purpose of this part is to be explained how digital technologies strengthen urban resilience by enabling prediction of shocks and improving preparedness. The session showcased the contribution of digital mapping, advanced planning tools, and digital twins to better decision-making and more efficient urban management**.**

Modern toolchains: GIS, BIM, big data, AI, and blockchain

Focused on technology-driven urban and land-planning management, emphasizing:

- GIS and BIM as core tools
- The increasing use of big data, drones, satellites, and sensor networks to support urban design and monitoring
- The emerging role of AI and blockchain to improve planning processes and strengthen transparency.

AR/VR, VISUALIZATION, AND CITIZEN-POWERED DATA

In a second session, the presentation deepened the technology discussion by presenting applications of **augmented and virtual reality (AR/VR)** for topographic modeling, design visualization workflows, and disaster-planning initiatives. The session also introduced **crowd-sourcing methods**, including **noise mapping** and noise-pollution monitoring, as tools for environmental management within smart-city strategies

The future of planning: predictive and interactive workflows

The session outlined how predictive models, interactive technologies, and automation will shape the next generation of planning—making practices more dynamic, efficient, and responsive to complex urban challenges

Digital twins: multi-scale data to actionable urban intelligence

A session delivered focused on the purpose and goals of digital twins and their dependence on **multi-scale, multi-resolution, and multi-modal data**. Practical application areas highlighted included:

- disaster monitoring
- circulation and traffic management
- groundwater monitoring positioning digital twins as an enabling framework for sustainable urban development.

HACKATHON CORNER: HOW MLUMSE PREPARES STUDENTS TO BUILD SOLUTIONS

The MLUMSE hackathon was presented as a forthcoming hands-on initiative aimed at transforming recently acquired knowledge into concrete project ideas. Rather than simply announcing the event, the session provided students with a clear understanding of its purpose, expectations, and added value within the broader MLUMSE framework.

Participants were introduced in detail to the hackathon's structure, including its one-week intensive format, mentoring approach, and evaluation principles. Guidance was provided on how to identify relevant urban and land management challenges, refine problem statements, generate innovative yet feasible solutions, and organize effective interdisciplinary teams. Emphasis was placed on collaborative methods, creativity techniques, and structured workflows that would help participants move from initial brainstorming to a well-defined project concept.

By carefully preparing students ahead of the event, MLUMSE positioned the hackathon as more than a competition: it is conceived as a learning laboratory where experimentation, teamwork, and applied problem-solving play a central role. In doing so, the project once again underscored its commitment to experiential learning and to embedding modernization within concrete academic practice.

MLUMSE Team:

Aqaba Technological University (AUT)

Located in **Aqaba, Jordan**, Aqaba Technological University (AUT) is a technology-oriented higher education institution with a strong focus on **applied learning, innovation, and industry engagement**. Leveraging Aqaba's strategic position as a **port city and regional gateway**, AUT is well positioned to contribute to **practice-driven solutions** in areas such as **smart urban development, digital transformation, sustainable infrastructure, logistics, and coastal resilience**. In line with its societal mission, AUT supports **evidence-based territorial and urban development** by promoting **interdisciplinary education**, strengthening **university–industry–government collaboration**, and encouraging the **co-production of knowledge** to address complex urban and environmental challenges. Through its internationalization agenda, AUT fosters **mobility, joint educational initiatives, and collaborative projects**, contributing to skills development and regional priorities across the Mediterranean and beyond.

Participation in Relevant Projects / Initiatives (to align with your newsletter format)

- **Erasmus+ actions in higher education** (mobility and capacity-building collaborations)
- **Regional and international academic networks** supporting innovation and applied research
- **Applied research partnerships** on smart cities, digital transformation (IoT/AI), sustainable infrastructure, and climate resilience
- **Collaborative initiatives for skills development** (student innovation challenges, entrepreneurship support, professional training)

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