INTRODUCTION

The 10th International Conference on Cartography and GIS, held in Nessebar, Bulgaria, from 14 to 19 June 2026, continues the long-standing tradition of bringing together researchers, educators, professionals, and practitioners working in cartography, geographic information science, geoinformatics, remote sensing, spatial analysis, and related disciplines. Organized by the Bulgarian Cartographic Association and the University of Architecture, Civil Engineering and Geodesy and endorsed by the International Cartographic Association, the conference serves as an international forum for presenting scientific achievements, exchanging innovative ideas, fostering interdisciplinary collaboration, and exploring emerging challenges in the rapidly evolving field of geospatial sciences.

The papers presented in these Proceedings reflect the diversity of contemporary cartographic and GIS research. The contributions range from archaeological and historical GIS applications (Albert & Csirke; Reyes Nunez), geospatial standards (Krastanov), and cultural heritage documentation (Mihailova-Hristova & Bandrova; Yankov et al.) to innovative developments in artificial intelligence and GeoAI for spatial analysis, visualization, education, and historical data processing (Peko; Kim & Kim; Podolskaia et al.; G. Chen et al.; Y. Chen et al.). These studies illustrate how advances in artificial intelligence, cloud computing, machine learning, and intelligent cartographic workflows are transforming production, analysis, visualization, and communication of spatial information while simultaneously raising important questions concerning data quality, transparency, reliability, ethics, and the critical evaluation of AI-generated results.

Remote sensing, Earth observation, and geospatial modelling represent another major research direction. Innovative applications of satellite imagery, LiDAR, UAV photogrammetry, digital terrain models, and multisensor data integration are presented by Albert & Badrakh; Vatseva & Tsvetkova; Vatseva & Gartsiyanova; Yonov & Atanasov; Toguzova et al.; Farhi et al.; Kreri et al.; Omar et al.; Nikolov et al., Asenova & Danailova; Idrizi; and Pashova et al. Their contributions demonstrate the growing importance of advanced geospatial technologies for environmental monitoring, geological investigations, agriculture, forestry, hydrology, mineral exploration, deformation mapping, and cultural heritage preservation, providing reliable information for scientific research and evidence-based decision-making.

A significant group of papers addresses disaster risk management, environmental resilience, and sustainable development. Flood modelling, drought monitoring, wildfire analysis, geological hazards, emergency preparedness, infrastructure resilience, and post-disaster assessment are investigated by Vojtek et al.; Milanović Pešić et al.; Špulák; Dinkov et al.; Belev et al.; Odabaşı & Bildirici; Pashova et al.; Stoyanova & Vitov; and Dohnal et al. These studies demonstrate the value of advanced spatial modelling, predictive analytics, and geovisualization for supporting hazard assessment, emergency planning, environmental management, military engineering, infrastructure development, and climate adaptation.

The interdisciplinary nature of the conference is further reflected in contributions dedicated to cultural heritage, archaeology, cartographic visualization, sustainable cartography and education. Modern methods for reconstructing historical landscapes, modelling ancient transportation networks, documenting monuments through three-dimensional technologies, designing relief and thematic maps, preserving historical geographic knowledge, and developing sustainability atlases are explored by Albert & Csirke; Reyes Nunez; Mihailova-Hristova & Bandrova; Bandrova et al.; Chen et al.; Y. Chen et al.; Yankov et al.; Roth et al.; and Bacior & Chmielowska. Educational innovations are presented by Bandrova et al.; Gancheva et al.; Thuku et al.; Modebadze & Modebadze; Eraslan et al.; Kim & Kim; and Peko, demonstrating the integration of artificial intelligence, augmented reality, tactile cartography, digital learning resources, and modern visualization techniques into geospatial education. Together, these contributions emphasize that future geospatial professionals require not only technical competence but also creativity, spatial thinking, critical analysis, and the ability to interpret increasingly complex geospatial information.

The international character of the conference is reflected in the wide geographical representation of authors and members of the Scientific Committee, bringing together expertise from Europe, Asia, Africa, and North America. The diversity of research topics demonstrates the expanding role of cartography and GIS in addressing global scientific and societal challenges while supporting the implementation of the United Nations Sustainable Development Goals. Collectively, the papers presented in these Proceedings reaffirm the central role of cartography and geographic information science as both a scientific discipline and an indispensable means of communicating complex spatial information in an increasingly data-driven world.

The editors express their sincere appreciation to all authors for their valuable scientific contributions and to the reviewers for their careful evaluations and constructive recommendations, which ensured the high quality of the published papers. Special thanks are extended to the members of the Organizing Committee, the International Cartographic Association, the Bulgarian Cartographic Association, the University of Architecture, Civil Engineering and Geodesy, the Bulgarian Science Fund, the Municipality of Nessebar, and the conference sponsors whose dedication made the successful organization of the conference possible.

We hope that these Proceedings will serve not only as a comprehensive record of the scientific achievements presented at the conference but also as a valuable source of knowledge and inspiration for researchers, educators, students, professionals, and decision-makers. The diversity of topics, innovative methodologies, and interdisciplinary perspectives presented herein demonstrates the continuing vitality of cartography and geographic information science and their growing significance in addressing the scientific and societal challenges of the twenty-first century.

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