

BOOK OF ABSTRACTS  
20<sup>th</sup> International Scientific-Methodical Conference BALTIC SURVEYING'23



VYTAUTAS MAGNUS UNIVERSITY  
AGRICULTURE ACADEMY  
FACULTY OF ENGINEERING  
Department of Land Use Planning and Geomatics



# BOOK OF ABSTRACTS

20<sup>th</sup> International Scientific-Methodical Conference

## BALTIC SURVEYING'23

10<sup>th</sup> -12<sup>th</sup> of May, 2023, Kaunas, Lithuania



UNIVERSITY  
OF WARMIA AND MAZURY  
IN OLSZTYN



Latvia University  
of Life Sciences  
and Technologies



VYTAUTAS MAGNUS  
UNIVERSITY  
AGRICULTURE  
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BOOK OF ABSTRACTS: 20<sup>th</sup> International Scientific-Methodical Conference BALTIC SURVEYING'23. Vytautas Magnus University Agriculture Academy. 2023, 58 p.

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## ADVANTAGES OF USING QGIS TO SOLVE SPATIAL PLANNING TASKS

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**Abstract**

The article discusses the prospects and advantages of using QGIS geographic information system for solving spatial planning tasks. Attention is focused on the strengths of QGIS in comparison with other geographic information systems and the potential of the program to eliminate the monopoly position in the market by well-known manufacturers of geographic information systems. Despite the fact that QGIS is an open-source software, this software product is in most cases not inferior to expensive geographic information systems. At the same time, the advantages of QGIS include cross-platform, rich functionality, the ability to use different geographic information databases, the ability to connect and integrate various plugins into the program. Particular attention should be paid to the ability to independently write plugins for solving specific highly specialized tasks in the Python programming language and their quick integration into the QGIS software environment. Examples of QGIS application for solving specific spatial planning problems are given. The possibilities of using QGIS in solving the problems of settlement planning, territory management, land management and environmental monitoring are considered. The conducted research gives grounds to recommend QGIS for wide application by developers of project documentation, as well as by executive authorities and local self-government bodies for analyzing cartographic and project materials in making management decisions. This will help create a competitive environment among developers of urban planning and land management documentation. After all, today, many specialists cannot afford expensive commercial licenses of well-known developers of geographic information systems. And any legislative requirements that oblige them to use them in practice lead to monopolization of the market for these services by individual enterprises. At the same time, it has been proven that the use of the open-source geographic information system QGIS will not lead to a deterioration in the quality of project documentation. The program can ensure the proper quality, accuracy and interoperability of design and mapping materials created with its help, as well as to solve a wide range of tasks in the field of spatial planning.

**Key words:** geographic information system (GIS), spatial planning, project documentation, cartographic materials, territory management.

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