

Tasks and Challenges of National Mapping Agency of Poland in the Field of Data Acquisition

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SUMMARY

In the age of digital transformation, geoinformation and geoknowledge is a vital part of any modern country's national infrastructure. The crucial task of Head Office of Geodesy and Cartography (GUGIK) - National Mapping Agency of Poland, is to provide reliable geoinformation enabling transparent and identifiable decisions on political, economic and social matters. The rightness of the decision depends on up-to-date and authoritative geospatial data. Open access to geospatial data from National Geodetic and Cartographic Resource of Poland contributes to the growth of economic activity, stimulates a lot of new initiatives and brings new users, who expect that the data meets the necessary quality requirements.

In order to meet the expectations and needs of the users, GUGIK delivers high quality, comprehensive and up-to-date photogrammetric and topographic data as: ortophotomaps, ALS data, Digital Elevation Model, Digital Surface Model, the Topographic Objects Database (BDOT10k), the General Geographic Objects Database (BDOO), produced with use of new sensors and new processing methods. The multiannual plan for geospatial data acquisition, adopted by GUGIK, ensures that the data sets for the country are up-to-date and complete. This creates new operational challenges in processing and verifying the quality of thousands of data acquired every year and included into National Geodetic and Cartographic Resource. Furthermore, GUGIK leads R&D activities for processing and quality assurance of geospatial data in a fast and reliable way. To mention just a few, these are such as:

- the automatic generalization of BDOT10k to BDOO – above all, implemented for the geometry of the objects and their course, the water course network's and roads
- using deep learning methods for automatic detection of errors (such as blurs, clouds, shadows,

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smokes) in aerial images

- implementation of deep learning methods for automatic detection of the objects on ortophotomaps.

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