

Spatial data infrastructure components (National Geoportal, metadata, standards, etc.) are essential for the implementation of digital transformations in the Republic of Armenia. Back in 2020, the Cadastre Committee of the Republic of Armenia initiated the creation of NSDI, which allows the collection, processing, storage and exchange of standardized spatial data between various public and private bodies in a single system

In order to regulate the sphere and systematically implement the work, the Cadastre Committee initiated the adoption of a number of laws and legal acts regulating the industry, with the aim of increasing the role of the Cadastre Committee and expanding the scope of application within the framework of its functions. The mentioned legal acts are: Law of the Republic of Armenia "On Spatial Data", Decision on Approval of the List of Basic and Thematic Spatial Data and Guidelines for their Standardization in the National Spatial Data Infrastructure, etc.. These laws and decisions regulate relations related to the processing and management of data, harmonize the standards of thematic and basic levels, the procedure for providing information from the state spatial database, etc.

On July 29, 2022, the National Geoportal of the Republic of Armenia (maparmenia.am), which is an integral part of the NSDI, was launched. Thematic and basic cartographic layers available in the spatial fund of the RA are reflected here. The platform is being constantly updated, new layers and cartographic tools that solve various local problems are being added. It supports web services standards developed by the Open Geospatial Consortium (OGC), WMS, WFS, which provide (ensure) operational exchange of spatial information. Layers (cadastral maps, geographic names, addresses, etc.) are maintained and updated automatically.

In addition to automated tools, solutions to various local cadastral problems, the Cadastre Committee of the Republic of Armenia, as part of its research work, is developing a deep machine learning algorithm that will allow automatic detection and mapping of buildings with high resolution (orthophoto 2021, resolution 20 cm), which is considered the most resource-intensive process in terms of digitalization. The algorithm is adapted to the characteristics of the RA (geographical location, relief, architectural appearance of objects). It was applied to settlements of different marzes (regions) of the RA, quite different in geographic location, relief, placement of houses. At the moment, the algorithm works with an accuracy of about 85% in rural areas.

Thus, the Cadastre Committee is constantly upgrading the spatial data infrastructure, in an effort to achieve the implementation and development of the GKI concept. The role of the latter in the RA management module is planned to be increased through the introduction of various tools (remote sensing, spatial analysis, artificial intelligence, web services).