The Developments Enabled by Determining the Quality of Cadastral Data In Turkey

Ümit Yildiz, İsmail Kurukama, Mustafa Aslan, M. Zeki Adli and Ismail Dursun (Türkiye)

Key words: Cadastre; Digital cadastre; Professional practice; Data sharing

SUMMARY

Cadastral works have been designed to establish the land register under the state guarantee in Turkey. The initial cadastre was considered one of the priorities after the declaration of the Republic. The first cadastral law was published after the foundation of the Republic in 1925. Ensuring tenure security has been determined as a fundamental purpose, and following this purpose, various legal and technical regulations have been implemented, including different technical and administrative requirements. With the inclusion of the private sector in the workflows, cadastral works were completed throughout the country in the 2000s.

As a result of the cadastral activities which took almost a century, approximately 58.5 million parcels are registered in Turkey. The parcels have been registered after various measurement techniques and different legal regulations in different eras. While some of them were produced during the first registration works, some of them have been re-measured with renovation or cadastral update implementations, some of them were formed with regulations such as land readjustment applications. To manage the cadastral data, the crucial attributes of a parcel like a measurement technique, when and according to which regulations a parcel was produced, need to be known.

The spatial data registered into the official registers are used as a base for all projects related to location and ownership. The intended use of geographical data can be spread over a wider area than the manufacturer's intended use (ISO, 2013). The quality of the data is an important element for parties willing to use the data for various purposes.

For these reasons, in 2020, studies to determine the data quality of 58.5 million registered parcels were initiated in Turkey. Hundreds of technical personnel in 81 cadastral directorates throughout

the country have been assigned to these studies. In this context, parcel-original cadastral sheet relations were established to collect attributes like; production method, production date, coordinate quality readily. The consistency of registered geometries with the ground, technical errors, the geometries of the registered buildings on parcels, the geometries of the registered easement rights were some of the attributes inputted into the Spatial Information System (MEGSİS) by confirming with electronic signatures. By January 2022, the information mentioned above of 50 million registered parcels has been obtained centrally within a data model. The data collection and confirmation works are planned to be completed in a few months.

Determining the data quality has enabled some projects that couldn't be planned centrally before. Monitoring the performances of cadastral directorates and technical staff could have been done with the business intelligence applications based on data quality. The reorganization of business processes became possible with the new data model. In addition, the efficiency of data sharing has been increased. Interested parties can now use confirmed cadastral data directly without visiting local offices.

The data model developed for Spatial Information System, the business model for ensuring data confirmation almost in a year, the outcomes of the cadastral data originated works in Turkey will be explained in this paper.