The Problems And General Evaluation Of The Spatial Address Registry System Project In Turkey

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Key words: Spatial Address Registration System, Project Management, Spatial Planning, Land Registration

SUMMARY

The Spatial Address Registration System project (SARS) aims to combine verbally stored address data with geographical coordinates and to create a data infrastructure that integrates with other systems. This project integrates address data generated by different authorities across the country in a common data model and keeps these data up-to-date with web sites or interfaces.

The SARS project is a comprehensive project targeted throughout the country. Therefore some problems arise in the implementation process. Especially, the different authorities are using different spatial address data models in accordance with their needs and the problem of not having a common spatial address data model is involved. In this respect, it is important to establish a data model that creates the national and international standards for the success of the project process. The creation of this model is achieved by providing the existing data from the authorized administrations and combining them with the geographical coordinates to give a numerical dimension to the address data.
In this study, the process from within the scope of the SARS project will be evaluated by examining the objectives, expectations and problems of the project. In addition, the process of the project is investigated related to cost-saving and time-wasting. The proposals are developed to provide sustainable project process.

SUMMARY

Mekansal Adres Kayıt Sistemi Projesi (MAKS) sözel olarak saklanan adres verilerinin coğrafi koordinatlarla birleştirilmesi ve diğer sistemlerle entegre çalışan bir veri altyapısının oluşturulmasını amaçlamaktadır. Bu proje, ülke genelinde farklı yetkili idareler tarafından oluşturulan adres verilerinin ortak bir veri modelinde bütünleştirilmesini ve web siteleri ya da ara yüzler ile bu verilerin güncel tutulmasını sağlamaktadır.
MAKS projesi ülke genelinde hedeflenen kapsamlı bir proje olması nedeniyle uygulama sürecinde bazı sorunlar ortaya çıkmaktadır. Özellikle farklı yetkili idareler tarafından ihtiyaçları doğrultusunda farklı mekansal adres veri modellerinin kullanılıyor olması ve ortak bir mekansal adres veri modelinin bulunmaması sorunu yer almaktadır. Bu açıdan proje sürecinin başarıya ulaşmasında ulusal ve uluslararası standartlara uygun bir veri modeli oluşturması önem taşımaktadır. Bu modelin oluşturulması mevcut verilerin yetkili idarelerden temin edilmesi ve

coğrafi koordinatlarla birleştirilerek adres verilerine sayısal bir boyut kazandırılması süreci ile sağlanmaktadır.
Bu çalışmada, MAKS projesi kapsamındaki süreç içerisinde; projenin amaçları, beklentileri ve karşılaşılan sorunlar incelenerek genel bir değerlendirilme yapılacaktır. Ayrıca, maliyet tasarrufu ve zaman kaybı ile ilgili projenin süreci de araştırılmaktadır. Öneriler sürdürülebilir proje süreci sağlamak için geliştirilmiştir.

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1. INTRODUCTION

The address is a definition to describe a spatial location with using components such as postal code, province, district, village names; neighborhood, square, boulevard, road, street names, a fixed identification number, building number. The absence of a specific address standard in Turkey and expressing the same address in different ways and changes in components of addresses' names have been affecting the efficiency of public services. Therefore, High Planning Council has developed Address Registration System (ARS) in order to provide standardization in addressing, regulation, implementation period and coordination between different institutions (Türk, 2008). It has been planned to establish a standardized National Address Database (NAD) under ARS (Türk, 2008). NAD has been planned to carry out a standardized system within ARS framework. Providing NAD address information, following components of addresses up to date and supplying public services on address registration in efficient and effective way have been executed by Directorate General of Civil Registration and Citizenship Affairs (DGCRCA) (URL-1). Each address is recorded in NAD, including the street numbers, streets, boulevards, squares, sites and the door numbers of the buildings, and forms the basic infrastructure in the studies that include NAD address information (URL-1).

It has been initiated by DGCRCA in order to integrate address information that verbally recorded with geographical coordinates and to integrate the created infrastructure with other systems (SARS) (URL-2). This project has been included as "Establishment of a Spatial Address Registration System and Online Real Estate and Planning Permission Project" in the 2011 (URL-2). At the end of 2015, via a contract that signed by DGCRCA and ASELSAN, 'Establishment and Expansion of Spatial Address Registration System (SARS) Data Project' has been started (Kılıç and Gülgen, 2017).

First, it has been started to apply in Beylikdüzü and Avcılar districts of İstanbul and central district and Sinanpaşa district of Afyonkarahisar province, central district of Düzce province and all the district municipalities of Kocaeli province within the scope of the SARS project, and it has been aimed to apply in 10 provinces, in 2016 and in 23 provinces in 2017 and it has been planned to apply in other provinces in 2018 (URL-3).

Geographical Information System (GIS) is a system that has been applied in order to carry out SARS project.GIS is very significant tool for compiling, storing, processing and analyzing spatial and non-spatial data in the scope of the SARS project. By using GIS, it will be possible to combine address data generated in different formats by different authorities in a single format and share information to public institutions and organizations.

2. THE OBJECTIVES OF THE SARS PROJECT

The main objective of applying the SARS project is to provide a numerical dimension to the address data by combining the textually stored address data with the geographical coordinates and to establish the e-government infrastructure and Urban Information System (UIS) basis.

There are several goals that are expected to be achieved for the SARS project to be carried out and effectively applied. These goals can be listed as follows:
• To create a more useful, efficient and space-based Spatial National Address Database,
• Establishment of an integrated system in cooperation with all authorized institutions and prevention of registering and sharing of duplicate information,
• Achieving up-to-date and standardized data quality that can adapt to temporal change,
• To create systems that are understandable and perceptible by users, and
• Establishment of a standard data infrastructure that can be used jointly by local and central administrations.

3. PROBLEMS ENCOUNTERED AT THE SARS PROJECT AND RECOMMENDED SOLUTIONS

The base data that has been used during designing the SARS project consists of raster and vector data. Raster data includes satellite images, orthophotos and aerial photographs, vector data consists of zoning plans and current maps. Particularly, current raster data that used will provide great convenience in terms of office and field study of the project. If the creation of structures and paths are carried out via raster data, more consistent results can be obtained with the data in the field. The constructions/buildings are in such a dynamic atmosphere that can be demolished, and new constructions can be started. In these cases, it will be easier to detect them through the current data. In case the current data is not used, the information about destroyed buildings are updated by the office team. The structures that have just begun construction cannot be updated in the office environment and must be detected in their location sites. This causes the prolongation of the duration of the processes which have been carried out in the field. Likewise, digitization processes can be made more quickly in consultation with the competent authorities on the formation of the road-bed.
In the scope of the 'Regulation on Address and Numbering', the numbering criteria have been determined for the dwelling and areas without zoning plan. In the process of office works of the SARS project, while the renumbering designs can be carried out in zoned areas, inadequate zoning plans can cause problems. In order to provide valid, correct and long-lasting enumeration process, studies for the improvement of the development of zoning plans should be conducted across Turkey. In this direction, authorized administrations can employ survey engineers and city and regional planners.
Turkey has different landforms due to its unique geographic location. This can be a disadvantage for fieldwork in some cases. Due to the very different constructions depending on the landforms, there is unclearness in numbering. In cases where such problems are encountered, DGCRCA leaves the decision to field staff in general. Because, the field workers

are the ones who see the construction of the building and give the best decision about the building. In this case, necessary and sufficient training should be given to field employees. The performance of field workers is one of the significant factors that affect the duration of the work and the qualified staff is very crucial in terms of shortening the duration of project.
The SARS project has the technical problems since it has been implemented for the first time in Turkey. Making new decisions and making new transactions by DGCRCA cause the project duration to be extended. For instance, while the other buildings (garage, coalbunker, etc.) were not numbered in the past, they have been numerated now.
Problems may arise during the integration phase with authorized administrations. The most crucial problem is the lack of a standard data model in Turkey. Apart from this, other problems can be listed as indeterminate spatial boundaries of the villages, the lack of authority in the Organized Industrial Zone and the necessity of regulations or directives to be applied by authorized administrations in the production of geographic data.

4. CONCLUSION

With implementing the SARS project, it will lead to spatially administrate all the buildings across Turkey with considering spatial dimension. Hence, statistical analysis can be carried out on the spatially dimensioned data, especially in case of necessity of public and civil users in emergencies, and spatial indicators can be generated. These analyzes will constitute the basis for such issues as population and housing surveys in rural and urban areas and making healthier planning. In the statistical analyzes to be conducted, the effect of GIS techniques on the processes will increase. NAD also be integrated in the textual address data in numerical size can be checked for correctness of the data and address data that complied by means of Spatial NAD managed by different authorized administrations will be transformed and integrated into a common data model and web sites and interfaces will enable to keep the data up to date. Individuals will be able to provide immediate access to the data and accelerate public services. Current GIS and UIS investments will be valued and thanks to the integration between the systems, the errors related to the manager will be minimized/diminished. Data within the scope of the SARS project will form a base for administrative institutions which are supplying infrastructure, water, gas, electricity, security, telecommunication, PTT (post and telegraph) and other institutions, especially Ministry of Interior, Ministry of Environment and Urbanization, Ministry of Forestry and Water Affairs, Ministry of Food, Agriculture and Livestock and Ministry of Health.
When SARS project is implemented, the authorized administrations will replace the Address Registration System with the Spatial Address Registration System. After this phase, it is obligatory for the authorized administrations to update the system. For this purpose, the authorized administrations should have qualified field and office staff in order to keep the SARS up-to-date.

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BIOGRAPHICAL NOTES

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