



Research Article / Araştırma Makalesi
E-GOVERNMENT SERVICES ON FOUNDATION IMMOVABLE
PROPERTIES

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ABSTRACT

In recent years, some institutions and organizations have established information system infrastructures in accordance with e-government strategy stipulated in 10th development plan in Turkey. One of the institutions which are trying to build information systems and in which property-based processes are performed intensively is the General Directorate of Foundations (GDF, Vakıflar Genel Müdürlüğü-VGM in Turkish). A series of work on setting up a geographical information system for the establishment of an infrastructure for sustainable management of foundation properties designed to respond to any requirements within GDF under e-government strategy has been carried out by the GDF with the participation of the private sector. The system designed by the GDF was considered in two parts. The first part is a parcel-based application in which CAD data of each foundation parcel is stored and by which any spatial analysis and query can be made. The second part is a WEB- GIS application which is generated by entry of non-spatial information and by which an internet-based query can be made. Then it was accelerated via different components. By this study, the current status of e-government applications within the GDF, which have been in use since 2006, will be revealed. It will be discussed how the current system should be in the light of e-government, and suggestions will be developed for transformation of the designed system into formats and standards compatible with others.

Keywords: Management, foundation, land, properties, WEB-GIS.

VAKIF TAŞINMAZLAR TEMELİNDE E-DEVLET UYGULAMALARI

ÖZET

Ülkemizde son yıllarda bazı kurum ve kuruluşlar bilgi teknolojilerindeki gelişmelerin olumlu bir sonucu olarak 10.cu kalkınma planında öngörülen e-devlet stratejisine uygun şekilde bilgi sistemi altyapısını kurarak her türlü işlemlerini bu sistem üzerinden yürütmeye başlamışlardır. Bu noktada, bilgi sistemi kurma gayreti içerisinde olan, taşınmaz tabanlı işlemlerin yoğun olduğu, kurumlardan bir tanesi de Vakıflar Genel Müdürlüğü'dür (VGM). E-devlet stratejisi altında VGM bünyesindeki ihtiyaçlara cevap verecek şekilde tasarlanan, sürdürülebilir vakıf taşınmaz yönetimi alt yapısının kurulmasına yönelik, coğrafi bilgi sistemi kurma çalışmaları VGM bünyesinde özel sektörün katılımıyla yürütülmektedir. VGM tarafından tasarlanan sistem iki kısımda düşünülmüştür. Bunlardan birincisi; her bir vakıf parseline ait CAD verilerinin depolandığı, her türlü konumsal analiz ve sorgulamanın yapılabileceği parsel tabanlı bir uygulamadır. İkincisi ise sözel verilerin girilmesi suretiyle oluşturulan ve internet tabanlı sorgulamanın yapılabileceği WEB-GIS uygulamasıdır. Bu çalışma ile 2006 yılından günümüze dek devam eden VGM özelindeki e-devlet uygulamalarının mevcut durumu ortaya konacaktır. E-devlet, UKVA, TAKBİS ve INSPIRE kavramları ışığında mevcut sistemin ne şekilde olması gerektiği tartışılarak tasarlanan sistemin; diğer sistemlere uyumlu format ve standartlara dönüştürülmesi adına öneriler geliştirilecektir.

Anahtar Sözcükler: Yönetim, vakıf, arazi, taşınmaz, Web-GIS.

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1. INTRODUCTION

In our age, information and communication technologies are increasingly used by all nations worldwide in almost every area. Similarly, while initiating almost all professional infrastructure work, information system based utilization is planned. Particularly with widespread use of the internet, web-based information systems were adopted and the users were provided with access to the desired information [1; 2; 3].

Today, the Internet has become an important part of technology. Because by the courtesy of web services, any type of communication is rendered possible. With tiny system requirements, all data and maps are a click away from users. Now users use the Internet in conjunction with Geographical Information System (GIS) in query and analysis processes while accessing information [4; 5]. People use GIS to analyze, inquire, visualize and present this worldwide data [6]. This use began in Turkey especially in the 1990s and still continues today [7].

Today, Institutions under the authority of Governments have gotten further away from bureaucratic operations like 'stovepipes', and streamline their functions according to the needs of their people. At the same time, governments have started to strive to accelerate their internal effectiveness – the costs and quality of governance. Information Technology (IT) plays an important role in this modernization for these governments. IT offers endless possibilities for accelerating the internal operational and support functions within the realm of government [8].

By both Cadastre–2014 and INSPIRE, emphasis was placed on homogeneity of data, which are infrastructure of systems, inter-agency integration, interoperability, required data in addition to property -based e-government applications and the requirement for spatial information systems [9; 10; 11; 12; 13].

Spatial data needs of today's applications or projects can only be met with effective cooperation between different institutions or parties. Co-operation between different institutions or parties can only be achieved by Spatial Data Infrastructures (SDI) incorporating these parties [14; 15; 16].

As known, there was a CAD-based cadastral application software package used in cadastre offices by the General Directorate of Land Registry and Cadastre (GDLRC; TKGM in Turkish). This application is not web-based [17]. However, a web-based application independent from any drawing program is required to share cadastral parcels in this software with other organizations. This requirement of the public institutions is met by GDLRC by a web-based application, whose compliance with the standards specified in Interoperability Guidelines generated by Open Geospatial Consortium (OGC) and the Spatial Property System (SPO; MEGSIS in Turkish) Information Society Department was tested by open source and commercial products[18].

GIS and web-based GIS applications related to SDI and information technology are used not only for land registry and cadastral data but also for various jobs in different sciences and projects, for example, development of integrated water resource information management system in arid regions, [19].The importance of SDIs was understood well enough worldwide so there are a large number of national and international projects in this field. An example of these projects is INSPIRE (Infrastructure for Spatial Information in Europe) project, proposed for setting up information infrastructure across Europe [20;15]. Cadastral parcel information was considered by INSPIRE (Infrastructure for Spatial Information in the European Community) initiative as one of the basic data required for setting up Spatial Data Infrastructure(SDI). Under INSPIRE, a parcel is the smallest basic spatial element of a land surface that can be obtained in European countries. It is the key element of formalization of ownership as well as land management, and emerges as an essential component in setting up SDI in Spatial Information Management, typically in the international arena[21; 22; 23; 24]. Another important matter which

should not be overlooked here is to ensure that National Spatial Data Infrastructure (NSDI) is available for all these systems [25; 26; 10].

When we look at NSDI carefully, it is actually an electronic structure, which also makes clear to what extent the statement “NSDI is a part of e-Turkey” is correct. What is meant by e-structures is a cultural transformation from traditional structures to electronic structures in every sense, rather than only rendering processes electronic [4; 15].

INSPIRE comes up with general rules for an infrastructure of SI (Spatial Information) in Europe to support both environmental rules and policies. EU Member States established and elaborated INSPIRE based upon infrastructures for SI. Therefore, INSPIRE implementations depends directly on the awareness of these governments, not only at national and regional but also at local levels. But now, as known, their particular e-services have been developed [27]. Moreover, most European countries have means for e-government and how to use internet as a communication tool to interact with their people. The EU INSPIRE directive puts forward a new framework for both cooperation and exchange of information as a ground for environment management and planning [28].

In this context, in some countries and in Turkey, e-government policies were introduced. The objective of such policies was that services to be offered by the state to its citizens will be carried out over the internet through e-government over time [29; 30; 313; 32; 33]. To do this, almost all institutions of the state speeded up studies on information systems in accordance with the e-government policies [34; 35].

Land Registry and Cadastre Information System (LRCIS; TAKBİS in Turkish), which is the most important pillar of location-based information systems, is a major project, which began in the 1990s [36]. LRCIS was completed in all units on the basis of Title Deed Registry Offices and is run in certain provinces and regions based on Cadastre Offices. In cadastre pillar of the system, problems stemming from cadastre bases cause delays in full operability of the system across Turkey. LRCIS will be the basis of all spatial-based information systems [11]. In this respect, LRCIS is vital for the operation of spatial information systems within the scope of e-government [17; 11]. Considering that all parcels subject to registration across Turkey will be included in the system under LRCIS, the extent of the work becomes clearer [37; 38].

Moreover, from the perspective of the determination of the standard of data which will be presented in geographic data infrastructure, an action developed by Directorate General of Geographic Information Systems (GDGIS; Coğrafi Bilgi Sistemleri Genel Müdürlüğü in Turkish) was put into practice in some pilot provinces. It is known that the final phase of the project has been started to achieve in the near future the target that GDGIS makes geographic layers produced by the institutions available to third users by a WEBGIS interface, called ATLAS, in accordance with these standards [39].

With regard to the above-mentioned issues, foundations can be evaluated as follows in terms of scope and content of e-government in the Ninth and Tenth Development Plans. The concept of foundation from the past to the present is included within both legal and technical infrastructure requirements so in order to overcome this situation, the current legislation, which is disorderly and almost obsolete, was re-addressed and organized following a careful study, before legislative efforts were finalized and new laws and regulations were put into effect. Thus, faster and more effective management of foundation properties as well as in situ decision-making were enabled by changes and modifications made in corporate structure, powers and responsibilities of the foundations. During the studies carried out to renew the legislation, the main operations of the foundation, which constitute the foundation's purpose of existence, rapidly proceeded. On the one hand, all foundation artworks, particularly old ones that became ruined because of lack of maintenance throughout Turkey, were repaired, and work was started to optimally evaluate foundation properties used as investment tools [40; 41; 42].

An article must be useful and understandable for anyone to whom the subject of the article may concern. So, some information about Turkish land system and e-government for foundation properties is given below.

EVOS (Entegre Vakıf Otomasyon Sistemi in Turkish): An e-government application, by which web-based verbal data is currently managed as a result of efforts to establish a foundation information system, which was started in 2006. In this application, it is possible to work in conjunction with MERNİS and TAKBİS, which are other e-government applications [12].

VAKBİS (Vakıf Kütük Bilgi Sistemi in Turkish): An e-government application module by which foundation registry information of foundation properties registered in EVOS are blended with title deed details retrieved from LRCIS [12].

MERNİS (Merkezî Nüfus İdare Sistemi in Turkish): MERNIS project is a project that transfers all civil status details into electronic medium and enables instant updating and sharing through a safe network of any change in civil status details from 957 centers scattered across Turkey [43].

TAKBİS (Tapu ve Kadastro Bilgi Sistemi in Turkish): One of the most basic e-government applications that aim to ensure that ownership information is computerized and any type of query can be made across Turkey. Its objective is to ensure that Title Deed and Cadastre records across Turkey are computerized and all activities are carried out through computer system so private as well as public properties are effectively monitored and checked [44].

KVK (Kadastral Veri Konsolidasyonu in Turkish): Cadastral data Consolidation (KVK) is available as an open source WEB GIS application that provides collection, query and management in a single system of all cadastral parcels in Turkey. About 50 million parcel data is presented via the web interface and used in activities within TKGM. Through the software, cadastral data in various formats in scattered locations are combined in a single system [44].

VAKİFBANK: The bank with which the GDF works on monetary issues. Business and transactions of all foundation lessees covered by EVOS are carried out through this bank.

NOTARY PUBLIC: A person authorized by the state to issue and certify contracts, instruments and other documentation directly in accordance with law, and retain their true copies [45]. Notaries are people who ensure that any contract executed by and between the GDF and third parties are prepared, signed and recorded.

LİHKAB (Lisanslı Harita Kadastro Mühendislik Bürosu in Turkish): The Licensed Surveying Engineer and Bureau (LSEB; LIHKAB in Turkish): Some technical cadastre works, which used to be conducted by Cadastre Offices of GDLRC and private surveying engineering bureaus under the control of cadastre office, are now undertaken by LSEBs based on law 5368, which entered into force in 2005. Such technical works have been implemented by LSEB under the control of Cadastre Offices of GDLRC [46].

2. METHODOLOGY AND DATA

2.1. Studies on Property-Based (Geographical) Information Systems at the GDF

As known, the concept of foundation has shown itself in any field in all Ottoman territories as an understanding which contributed greatly to the reign of the Ottoman Empire for six centuries. The authority to manage foundation properties during the transition from the Ottoman Empire to the Republic of Turkey was granted to the General Directorate of Foundations [12].

In this study, the GDF's information system studies, definition of the system, studies conducted for realization of the system, evaluation of the data obtained, positive and negative aspects of the system, in other words, briefly, technical, institutional and legal aspects of those performed and required to be performed so as to realize the system will be investigated and examined.

Approximately 80,000 parcel-based foundation properties within the GDF are geographical objects that should be assessed and managed, and a parcel-based geographic information system was needed to ensure that such objects are used in the most effective and efficient way. In order to control land management practices conducted by the GDF through the systems to be developed, these systems should be urgently defined and the practices conducted should be executed through these systems. Therefore, in addition to this stipulated parcel-based CAD system, web-based systems integrated with this system, by which processes including leasing, law, collection of sales and concession fees, which are some of the land management practices for foundation properties can also be monitored, were also needed. The most important reasons for emergence of this need can be listed as follows:

- Transfer to CAD software of all foundation parcels across Turkey in a desirable coordinates system;
- Better identification of the location on land of the properties by this program and by the courtesy of its integration with Google- earth;
- Entry of title deed data of these properties as attribute information;
- That each and every of 25 Regional Directorates integrates their data by the courtesy of a database distributed to a CAD-based drawing software, and that the Center provides access to the data of all regional offices;
- Designing a web-based system integrated into a CAD-based system for entry of other information of foundation parcels created in the CAD-based drawing software;
- Ensuring that both numeric/string and digital data regarding cadastre, title deed, zoning and current status of the property are entered into this WEB-based (WEB-GIS) system;
- It is known that about 80,000 foundation properties belonging to more than 40,000 registered foundations across Turkey are monitored through the regional offices. Monitoring at least the results of these practices;
- Transfer to the system of the data of lessees who have leased foundation properties;
- In particular, integration with the GDF and the banking system (VAKIFBANK) of leasing, lessees and rentals of foundation properties covered by leasing, and controlling the work in these units by the system;
- Making the connection between properties annotated by the foundation and concessions required to be charged to the owner of the property so that such properties are abandoned to free disposition and the foundation covered by the annotation of the foundation within the system; and
- In the case of property-based lawsuits, controlling the proceedings.

A number of studies on information systems are also carried out in the GDF, one of e-government stakeholders, with the objective to record and control land management practices for foundation properties in a single database in the form of a dynamic structure, and conduct any works carried out by the GDF through these systems.

2.2. Web-Based Applications at the GDF

Web-based information systems for property based transactions are conducted at the GDF through the GDF Internet Portal (VİNPO) through corporate web address “<http://vgm.gov.tr>”. VİNPO provides access to all property-based applications as well as other pieces of software.

The GDF has both property-based and non-property-based information system applications. In this study, property-based systems are discussed so non-property-based systems are excluded. Access to all web-based software interfaces of the institution through the network of GDF, a screenshot of which is given below, is provided to all computer users which have been included in the corporate network. It is also possible to access EVOS interface outside the institution.

2.3. Foundations (Geographical) Information Systems: Property-Based Systems

In order to ensure realization and subsequent sustainability of GDF-GIS, some information considered as attribute information of all foundation properties throughout Turkey was collected. Hence a sustainable system which will become feasible by utilizing the benefits provided by GIS in the following work and procedure steps will be created.

2.4. Infoanalystpro - CAD -Based Foundation GIS

With an administrative structure consisting of 25 regional directorates, General Directorate of Foundations renders service in every province in Turkey. Firstly, administrative boundaries of provinces, counties, districts and villages covered by these regional directorates according to their duties were created on the map of Turkey. Creation of geographic location of any foundation property on the map of Turkey was made possible by entering 2-D geographical values of parcel corner points of that foundation property in the program. While carrying out this process, operation and transformation in various coordinate systems and projection systems were enabled by the menus in the program. By the courtesy of this program, any foundation property is created in graphical form and its attribute information including province, county, district, section, block, parcel, etc. are entered. This program was written on MapInfo in Oracle programming language, and is installed in responsible staff members' computers in the GDF units. These staff members enter data into this program. Then, each property which has been entered is transferred to the web-based interface.

The objective of Infoanalystpro is to create the foundation parcel in its current shape and location with a 1/1 scale in the CAD program, and position it in such a way that it is integrated into the web - GIS based system (see figure 1).

The screenshot illustrates the integration between the INFOANALYST PRO GIS application and the WEBGIS system. The top window shows the GIS interface with a map of foundation properties and a data entry dialog box. The bottom window shows the WEBGIS interface with a search form and a table of results. A black arrow indicates the data flow from the GIS application to the WEBGIS system.

Veritabanı Bilgi Girişi

Sıra	ParselID	Bölge	İlçe	Pafta	Ada	Parsel	Alan	Brüt Sayısı	Doküman Oranı	Rapor	Bedel	PlanID
1	181009111	TRABZON	MERKEZ	31	140	11	264.00	2				

T.C. BAŞBAKANLIK VAKIFLAR GENEL MÜDÜRLÜĞÜ
Vakıf Taşınmaz Mallarının Envanterinin Çıkarılması ve Vakıflar Bilgi Sistemi Projesi

Tapudan Mülk Sorgulama

Bölge: TRABZON
İl: TRABZON
İlçe: MERKEZ
Tapu Müd.: TRABZON TSM
Tapu Mah.: ÇARŞI
Fonksiyon Alt. Tür.:
Fonksiyon Adı:
Fonksiyon Adı 2:
Tapu Tipi:
Uyumu: AÇIK
Vakıf Türü:
Vakıf Nevi:
Cilt No:
Dosya No:
Ala: Rapor Al Liste Al Gizle

Vakıf Taşınmaz Tapu Sayfaları

Seç	Kütük No	Sayfa No	Pafta	İlçe	Vakıf Türü	Vakıf Nevi	Malik Adı	İmar Durumu	Alan (m ²)	Kiracı	Cilt	Dosya
3	104	31		MAZBUT	AKAR	HACI ALI AĞA VAKFI	KONUT ALANLARI	26.04	2	17	17	

Figure 1. Display of the connection between Infoanalystpro and WEBGIS

By the courtesy of this CAD-based drawing program used in the institution, real-world locations of foundation properties in scaled form along with their geometrical shapes are overlapped with middleware such as google-earth.

However, it was clear that there were a number of problems in transfer of all foundation parcels into this software, considering certain logic errors in this software, failure of users to actively use the software, errors related to cadastre system in Turkey, etc.

Therefore, intended purpose of the software could not be literally achieved because it was not actively used by some regional directorates, although there were some which actively used it. The software started to be used in 2006, however, its execution was suspended in 2011. Thus, the intention to execute all work and operations of foundation properties within geographical information system project was partially terminated, and the GDF continued to use only web-based software packages by which verbal data is managed.

Cadastral Data Consolidation (Konumsal Veri Konsolidasyonu-KVK in Turkish) is available as an open source WEB GIS application that provides collection, query and management in a single system of all cadastral parcels in Turkey. About 50 million parcel data is presented via the web interface and used in activities within the GDLRC. Through the software, cadastral data in various formats in scattered locations are combined in a single system [44]. As can be seen, it will be possible to access parcel -based foundation properties reproduced in the digital sense in Infoanalystpro via KVK on the internet in the near future. In this sense, the fact that GDF gave up searching for a CAD-based system should be seen as a more appropriate approach on its behalf. Because considering not only cadastral data but also development data, a CAD-based system conducted by GDF implies that particularly cadastral and development data will be repeatedly used and the same works will be processed by different stakeholders under e-government.

2.5. Taking Inventory of Foundation Properties and Foundations Information System (WEB -GIS)

Foundation parcels numerically generated in desired coordinate system in Infoanalystpro and attribute information of which has been entered are transferred to WEB-GIS. Then, other necessary information can be entered by the authorized user, which means this information entered is ready for queries (Figure 3). Title deed registry details, zoning status details and foundation registry details of the property are entered into the system. This web-based information system and other information systems can be accessed by all computers included in GDF computer network, irrespective of any intermediate software or hardware.

A photo of current status, zoning status, a copy of title deed registry record, a copy of cadastral plan of the property are transferred to the system in jpeg format and a digital archive of each foundation property is created (Figure 2).

- As the type of foundation, it is recorded with which foundation it is registered, such as registered, appendant, donation.
- As the kind of foundation, information such as real property, donation are entered.
- A 12-digit number, designated as Foundation Property File Number, is defined for all properties transferred to the system and entered into the system. A link is established between this property file number and VTYS, which is the leasing module of the foundation property in table 1.
- Information about current use of the property is entered as usage status details.

Table 1. Foundation Property File Number

Provincial Plate Number	Kind of Foundation	County Code	Foundation Register Rank No	Smaller file No
61 (Trabzon)	1 (Income)	01 (Center)	0001 (rank 1)	000 (none)
53 Rize	2 Charity	02 Akçaabat	...	Properties divided into multiple files in terms of leasing are numbered by starting from 001
....		
Property File No: 611010001000				

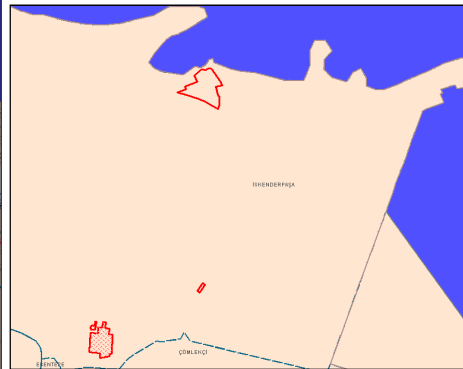
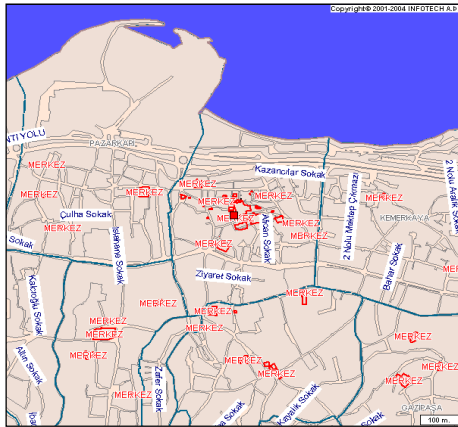
an example as display of title deed from
İskenderpaşa Mosque

an example as photo of Sümela Monastery



Infoanalystpro Regional Map Details

Infoanalystpro Map Details



an example as display of zoning plan
Hagia Sophia in Trabzon

an example as display of cadastre base map
Hagia Sophia in Trabzon

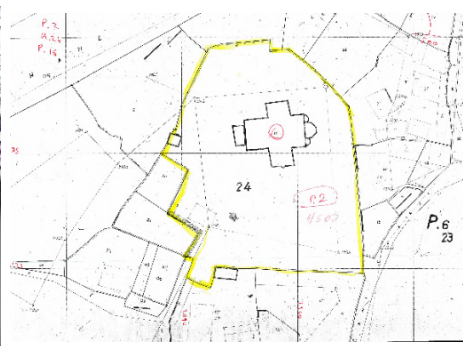
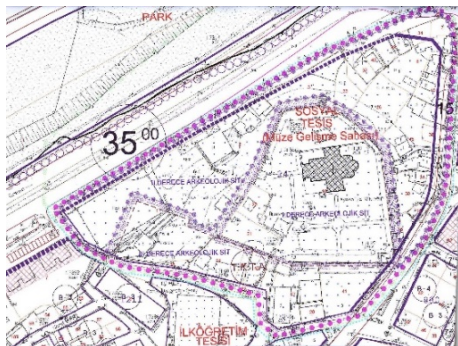


Figure 2. Images transferred to the system by WEB-GIS application

As mentioned above, the use of Infoanalystpro, the CAD-based drawing program, was abandoned in 2011 so the data in web-based Taking Inventory of Foundation Properties and Foundations Information System project were retrieved from this system and transferred to Integrated Foundation Automation System (EVOS), which is more effective and allows management of all work carried out by the institution, and in which separate modules are considered for all work units.

Similarly, it is known that the General Directorate of Agricultural Reform (TRGM in Turkish) assigned a code number to each parcel in a parcel-based Web GIS software [47]. Considering the case of both GDF and TRGM, it is a very sensible thing to assign a number to each parcel, the smallest building block of geographical data managed by each institution. However, from the perspective of e-government, it would also be possible to say that it will make much more sense if each parcel has one number or code. Although e-government stakeholders have yet to suggest what this will be, scientific circles revealed that it would be very appropriate to assign a Geocode to each parcel in terms of the computer operation of e-government as well as data sharing [48; 49].

2.6. Integrated Foundation Automation System (EVOS)

Due to the situations described above, this system proposed on the basis of the requirement for bringing together all non-graphic information of foundation properties under a single system and for performing all operations conducted by the institution under the umbrella of e-government (see figure 3), was first intended for leasing operations. A piece of software under the name of Management System of Foundation Properties (VTYS in Turkish) was developed and began to be used after entry into this software of foundation properties and their leasing information without retrieving data from any system [50;51].

Then, it was intended to remove leasable properties covered by the process in this program from Taking Inventory of Foundation Properties and Foundations Information System. These two programs were developed in different formats using different software languages for different purposes so it was suggested that all data in the other program are extracted into VTYS, which was at development stage, and that the other program is terminated. However, it was thought that VTYS program should be a module under the umbrella of EVOS so that registration procedures on the basis of title deed register of foundation properties are performed in this program intended to be leasing-oriented. It was also considered that it would be appropriate to manage foundation property information constituting the basis of registration in another module called Information System of Book of Foundation Properties Registers (VAKBİS in Turkish) thus data exchange between these two modules would be very easy.

After this point, it became possible to store and report all data regarding title deed register and foundation register of foundation properties by the module developed under the name of VAKBİS. In addition to this, another module in which leasing transactions, foundation property details at VAKBİS and all information covered by leasing such as lessee, guarantor, etc. are stored and reported was VTYS.

Similarly, various modules have been developed to carry out all operations of foundation properties such as litigation processes, allocation processes, repair processes, and EVOS has become a system by which all operations regarding entire foundation properties can be performed and all desired reporting can be made.

All foundation properties mentioned above are kept under control and desired queries are enabled in the online database along with procedure steps in the relevant module in this system. In this study, particularly the operations carried out through these modules are discussed under subheadings of VAKBİS and VTYS modules [52].

- Firstly, details constituting the basis for registration of foundation properties with title deed register as well as details constituting the basis for registration of foundation properties with

foundation register are recorded by VAKBİS module. Besides being a parcel-based system, the system also allows recording of properties whose construction servitude or property ownership has been established, and in the event that only independent sections are owned by the foundation.

- VAKBİS system has the LRCİS access link providing access to all data in title deed pillar of LRCİS by a protocol executed by and between TKGM and GDF. Through this link, it is possible to transfer a property to be entered into VAKBİS from LRCİS.
- After the property is recorded in VAKBİS, title deed registry record, cadastral plan, zoning plan, if any, current status images of the property are digitally added. In the event that the property is a cultural asset, assembly resolutions, court decisions specific to the property, if any, documents relating to its repair, if it has been repaired, can also be added to the system.
- After complete title deed register and foundation register details and documents are entered in VAKBİS pillar of the system; if the property entered is covered by leasing, lease contract signed by and between the institution and the lessee and all details of contractual parties are entered into the system through VTYS module.
- Address and residence information of people entered into the system through VTYS are included in the system via MERNİS.
- In the next stage, information based on lessee's payments is created in VTYS pursuant to the cooperation between VAKİFBANK and the GDF with respect to rental payments. Thus, all information in the lease contract constituting the basis for leasing becomes available in the system. This procedure is carried out for once when the lessee qualifies to be the first lessee. In the following lease periods, the same procedure is applied and rental rates are changed until the next lease term.
- Rental payments are made via VAKİFBANK as well as the link for payment by credit card on corporate network address through the same bank.

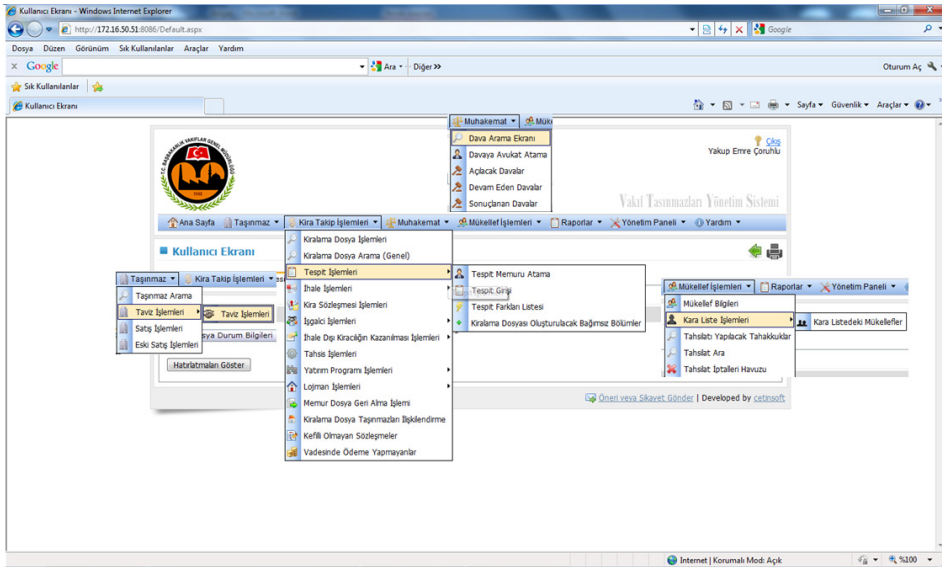


Figure 3. Display of EVOS screen

2.7. GDF Registered Foundation Property Sales and Concessions Monitoring Program (MVGSTP)

The amount of concession fee chargeable for abandonment of foundation annotated properties owned by real persons or legal entities to free disposition (private or corporate ownership) is 10% of the declared value of the property. For annulment of foundation annotation on the property; upon submission of the declared value of the respective property to the GDS by an official letter to be taken from the respective municipality, after this amount is collected from the owners of the respective property, a letter addressed to Title Deed Registry Office for foundation annotation on title deed register to be annulled is sent and the annulment procedure is completed. MVGSTP was developed with the vision of collecting income and expenses of each registered foundation in an account of that foundation, thus how much is charged to which foundation can be registered by entering the foundation annotated property and the amount collected for annulment of foundation annotation into MVGSTP. In addition, information related to the foundation and the sales price of foundation properties which have been expropriated or sold can also be transferred to this system. Thus, this system keeps records of all foundation income, including concession fees, sales and expropriation costs. In the long term, it is intended to transfer this system to EVOS so that it provides service there in the form of a module.

3. DISCUSSION

CAD-based Infoanalystpro and web-based applications based on properties operated within the GDF were examined in this study. At the end of the examination, it was determined that programs were developed and applied only in the GDF, and that no study was undertaken to identify which data to use in development of any program and its operation with other e-government applications.

Especially Infoanalystpro program operates within itself and it was not developed in conjunction with headquarters and provincial organization of the institution so this program could not be effectively used by the institution employees and thus partly served its intended purposes.

This non user-friendly program causes a number of problems during its operation and constantly gives errors of the same type (syntax error), and during interviews with those involved in writing of the program, it was stated that no solution could be found to the problems. For these reasons, the use of this program which allows spatial queries was abandoned and only web-based systematization of verbal data was continued.

Particularly the program called EVOS is upgradeable and can be improved in line with users' opinions so it was observed that the program is making an advance every day and facilitates the work which the institution conducts as paperwork.

Besides, considering monitoring of competency of the system; its operability in conjunction with other public institutions and organizations under the umbrella of e-government should be investigated. Systems that will serve this purpose should be designed. In other words, associating transactions, including people-property-tax liability-bank loan with people or objects such as properties or associating them with each other by taking into account the workflow schemes of all public institutions and organizations within e-government structure should not be disregarded. Here, the GDF should clearly define its role in NSDI and e-government, and address the question "Which data from which public institutions and organizations should be used for integration?"

E-government applications conducted by the GDF are known to be effective in performing the work conducted by the institution in its own cycle (see figure 4) and facilitate the institution's operations by keeping them under control. However, when they are considered under the umbrella of information systems, problems including recurrent entry of data, coordination

between systems, running systems within themselves in the form of a closed circuit should also be discussed.

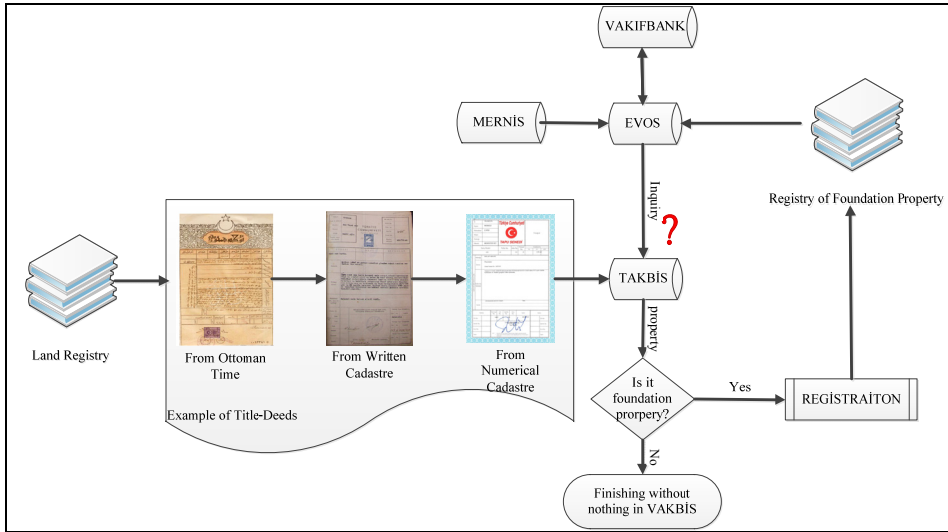


Figure 4. Relation between EVOS and others

At this point, it is of great importance for the entire e-government to design and sustain upgradeable e-government systems established by the GDF so that they allow exchange of data with other systems seen in figure 5.

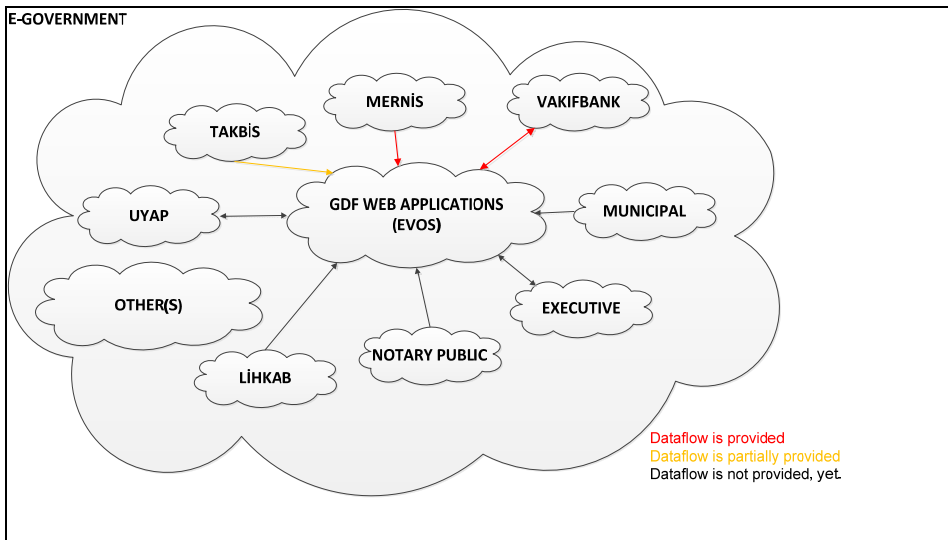


Figure 5. GDF web service under the umbrella of e-government: EVOS

It should also be highlighted that the system, which was completed in order to ensure that the applications developed under e-government within General Directorate of Foundations are conducted in a computer-aided environment, operates and brings great convenience by digitally processing and recording the transactions, which used to be processed and recorded in analog environment.

4. CONCLUSIONS AND SUGGESTIONS

As a result, the aim is to ensure feasibility of conducting all property-based work conducted by the foundations in conjunction with public institutions and organizations under the umbrella of EVOS, which was designed by the foundations as part of the whole e-government. Thus, it will be possible to operate the system in an integrated manner as in the following form. In the following depiction, although EVOS is in a position where it retrieves data from most of the systems, bank systems carry out collections using data they retrieve from EVOS. Therefore, EVOS gives the impression of a system that provides data as well as uses available data in itself. These studies show that a marked improvement was made with EVOS in performing one's own work flows by web services, although it is a closed system from the standpoint of GDF. It is possible to draw the following conclusions from the study.

- The umbrella of EVOS, a GDF e-government application, was established to a large extent in accordance with e-government policy.
- Especially providing links with VAKIFBANK, LRCIS (title deed section) and MERNIS have a major role in operating principle of EVOS.
- VTYS, one of EVOS modules, can be said to be operating well regarding provision of leasable property details, lessee details as well as rental data.
- Hence details of about 50,000 lessees in about 80,000 foundation properties can be managed and checked online through VTYS module, which plays a major role in the efficient management of the institution.
- The groups, which were created for remedy of a number of software-related logical errors and problems in EVOS, immediately detect problems as well as suggest solutions. Thus, detection of the problem and development of the solution are almost carried out simultaneously.
- It is known that in EVOS, certain data are provided by analog input of data during their transfer to the system due to the failure to fully install e-government.
- If all pillars of e-government are operated functionally, EVOS will be an information system in the strictest sense.
- Failure to access to spatial data of foundation properties by e-government is a problem. However, it is not deemed possible for GDF to solve this problem within itself due to the current problems arising from cadastre and development rights.
- Therefore, it is also necessary to immediately provide access to spatial data on the basis of cadastral parcels within KVK conducted by TKGM.
- However, a KVK type of solution approach should also be developed on this matter because there is no study which is currently conducted on zoning data across Turkey.
- As a result, EVOS, an e-government application in GDF, was developed to a large extent in accordance with e-government perspective. The system is improved every day. However, GDF cannot satisfactorily operate the system on its own in the strictest sense.
- Because other e-government stakeholders should also position their data in the e-government system (see figure 6).
- Thus, it is considered that e-government can be built up as a whole.

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