Integration-trend of Separated Land Tenure Governance Systems

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SUMMARY

The inter-institutional land tenure administration in Israel is supported by a number of separated computerized tools. At the Survey of Israel (SOI) the following systems can be considered as elements of an E-governance system:

- National GIS
- Cadastral production management, control and follow-up system
- Database for registration of licensed surveyors and their apprentices
- Classification system of surveyors and surveying companies
- Delivery of public (geodetic and cadastral) services via SOI WEB-site

Other governmental agencies, like Israel Land Administration, the Land Registration Office (Ministry of Justice), the Ministry of Interior, the Ministry of Construction and Housing and the Treasury also operate a number of E-governance elements related to land tenure. The integration of these separated systems is strongly desired for the realization of a high quality service to public.

This paper describes the separated components of a possible land tenure system, considering their combination and even their integration in a comprehensive one.

1. INTRODUCTION

The Survey of Israel is a national agency for geodesy, cadastre and geographic information. The Survey is responsible for cadastral mapping, as a part of an inter-ministry procedure of documentation and registration of rights to land, according to a British mandatory law (Survey Ordnance, 1929). Private licensed surveyors are also involved in the cadastral activity.

The cadastre system in Israel is based on Torrens registration principles, established by the British mandate on Palestine in 1920. In this system, rights to land are registered on the basis of maps made, after the completion of exact field measurements, by licensed surveyors. The state guarantees the boundaries and the area of the land parcels.

Settlement of rights has been accomplished until now in about 95.5 % of the area of Israel. Any change in the original settlement of rights to land, registered at the ministry of Justice, has to be based on mutation (re-partition) plans, prepared by a licensed surveyor. SOI is responsible for checking and confirming the mutation plans. According to the Israeli law of planning and building, the merging or subdivision of land parcels should always be done according to valid local authority plans for development. The approval of the head of the relevant Planning and Building Committee is a prerequisite for beginning of a checking and confirming process of the mutation plan at SOI. A mutation plan should be confirmed by the SOI as "approved for registration" before its registration by the Land Registration Office.

2. AUTHOR'S CONCEPT OF E-GOVERNANCE

Regarding the concept of "e-governance" we adopt Kate Oakley's definition of 2003 : "… a set of technology mediated processes that are changing both the delivery of public services and the broader interactions between citizens and government".

3. E-GOVERNANCE SYSTEM ELEMENTS AT THE SURVEY OF ISRAEL

3.1 National GIS Supports Governmental Information Delivery of Public

The content of the National GIS system of Israel is composed of four basic components: topographic DB, cadastral DB, orthophoto coverage and addresses. Their data make SOI able to support public demands through the Israel Government Portal, the main website of the Israeli government (fig.1.). One of the services is applied as a part of governmental preparations to the forthcoming elections: one can put in his/her personal identity number, and gets the address of the relevant polling station marked on a map (fig.2.). Another application supplies the block and parcel number according to the address of a land property, or reverse (fig.3.). During the past months this service was ranked as the most popular one among all of the services which are included in the Government Portal.

A very successful service of the SOI invites the citizens to order "personally fitted maps". This application meets the demand of the "broader interactions between citizens and government." One can simple describe the area to be mapped, the kind of the map and its main characteristics (for instance: with or without orthophoto background, names of streets, buildings and addresses, cadastral blocks and parcels, topographic contour lines, hydrography, etc.), the scale demanded – and order it via internet (fig. 4.). The "personally fitted map" will be produced by standard, modular tools of the National GIS.

3.2 Professional Information to Professional and Non-professional Users

More professional information is supplied by SOI mainly to geodesists, GIS experts, mapmakers and surveyors – and other permanently growing user groups. Data of the SOI permanent GPS network and the new RTK and VRS are dedicated to the above mentioned

professionals (fig. 5.), but, for instance, application links like “Transverse Mercator Calculator” are very popular for many others using cheap GPS receivers for various purposes.

An internet application allows to study the “history” of a parcel since the original land settlement through changes caused by different building development projects and carried out on the base of mutation plans as required (fig. 6.). This application used not only by licensed surveyors, but surprisingly also by lawyers, real-estate professionals and others.

3.3 Functional Developments Bringing Accompaniments to Citizens

SOI developed a functional system for qualification of licensed surveyors [Forrai, Kirschner, Klebanov and Shaked, 2004]. The system is interfaced to another which continuously updates data of licensed surveyors and their apprentices. As a result, a list of licensed surveyors is advertised in SOI Website in accord with them, containing basic and relevant information to consumers, like the dimension and the main profiles of their companies, experience, specialization, etc.

An ambitious cadastral control, follow up and management system named “Shalom” [Forrai, Murkes, Voznesensky and Klebanov, 2004] is under development in advanced phase at the Survey. This application will also supply up-to-date information to clients on the exact phase of the checking and proving procedure of mutation plans and of the preparation of cadastral block maps ordered.

4. INTER-MINISTERIAL INFORMATION SYSTEMS TO THE PUBLIC

Different ministries operate a number of separated E-governance elements. Their selective, thematic integration is strongly desired. During the last period, a number of encouraging attempts have been done. One of them is the establishment of the Governmental Portal mentioned above. In cadastral field, five governmental agencies (The Israel Land Administration, the Land Registration Office, the Ministry of Construction and Housing and the Survey of Israel and the Treasury) established a common system of using the same “unified key code”, enabling a simpler information-interaction between the separated ministry data bases and following systems regarding various cadastral projects. The unified key system is planned to be operated via Internet in June 2006. The characterization of the new, GIS based computerized follow-up system of the Land Registration Office (which belongs to the Ministry of Justice), is carried out in coordination with the National GIS and the “Shalom” project of the Survey.

Following the Nueba earthquake (6.3 Magnitude at Richter scale, at 22nd of November 1995, epicenter some 70 km South of Eilat along the Syrian – African fault line), an inter-ministry steering committee, with the participation of scientist as well as GIS professionals, has been formed for examining alternative ways of realignment for similar earthquake events and other large-scale disasters. Contacting the committee website (http://www.eqred.gov.il/eqred/), citizens can study the recommended preparations and the basic rules of proper behavior in case of an earth quake event (fig.7.).

The most important, national-size land tenure coordination with E-governance tools is initiated by the Director General of the Survey of Israel, who also serves as chair of a governmental inter-ministry GIS committee. The idea is to establish a comprehensive National Portal of Geographic Information [Srebro, 2005]. A significant development has already been completed. No doubt that the portal, which will be released for public use via Internet in 2006, will dramatically improve the governmental service to public in geographic information field, and will reduce respective governmental expenses.

5. CONCLUSION

More and more governmental agencies, involved in land tenure, realize the necessity and importance of integrated e-governance systems. The Survey of Israel, as national agency for geodesy, cadastre, mapping and geographic information, plays a key-role of integrator in the establishment of relevant, comprehensive governmental systems based on (or supported by) the National GIS.

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BIOGRAPHICAL NOTES

Dr. **Joseph Forrai** was awarded an M.Sc.(1974) and D.Sc.(1980) degrees at Technical University of Budapest, Hungary. He was Lecturer and Senior Lecturer at TU Budapest, Tel Aviv University, Israel Institute of Technology (Technion) and Bar Ilan University (Tel Aviv) since 1976. Appointments at the Survey of Israel: Chief of Research Division (1987-1992); Head of Photogrammetry Department (1989-1993); Deputy Director (1993-1994), and Chief Scientist (1995-2003), Deputy Director General for cadastre (2003-).Professional and research background (partial): crustal movement detection; photogrammetric data acquisition (national GIS topographic data base); permanent GPS station network; GPS support for geodynamics; development of cadastral management systems. Memberships of the Israeli Society of Photogrammetry and Remote Sensing (president between 1995-2001); Association of Licensed Surveyors in Israel (national coordinator of FIG affairs); Israeli Cartographic Society.

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FIGURES

Fig.1. The "Israel Government Portal"

Fig.2. Polling station marked on a map, according to voter's identity number

Fig.3. Cadastral block- and parcel numbers, according to the postal address of a land property

Fig.4. An electronic "print" for the "personally fitted map" specification

Fig.5. GPS permanent stations, RTK, VRS and other geodetic services

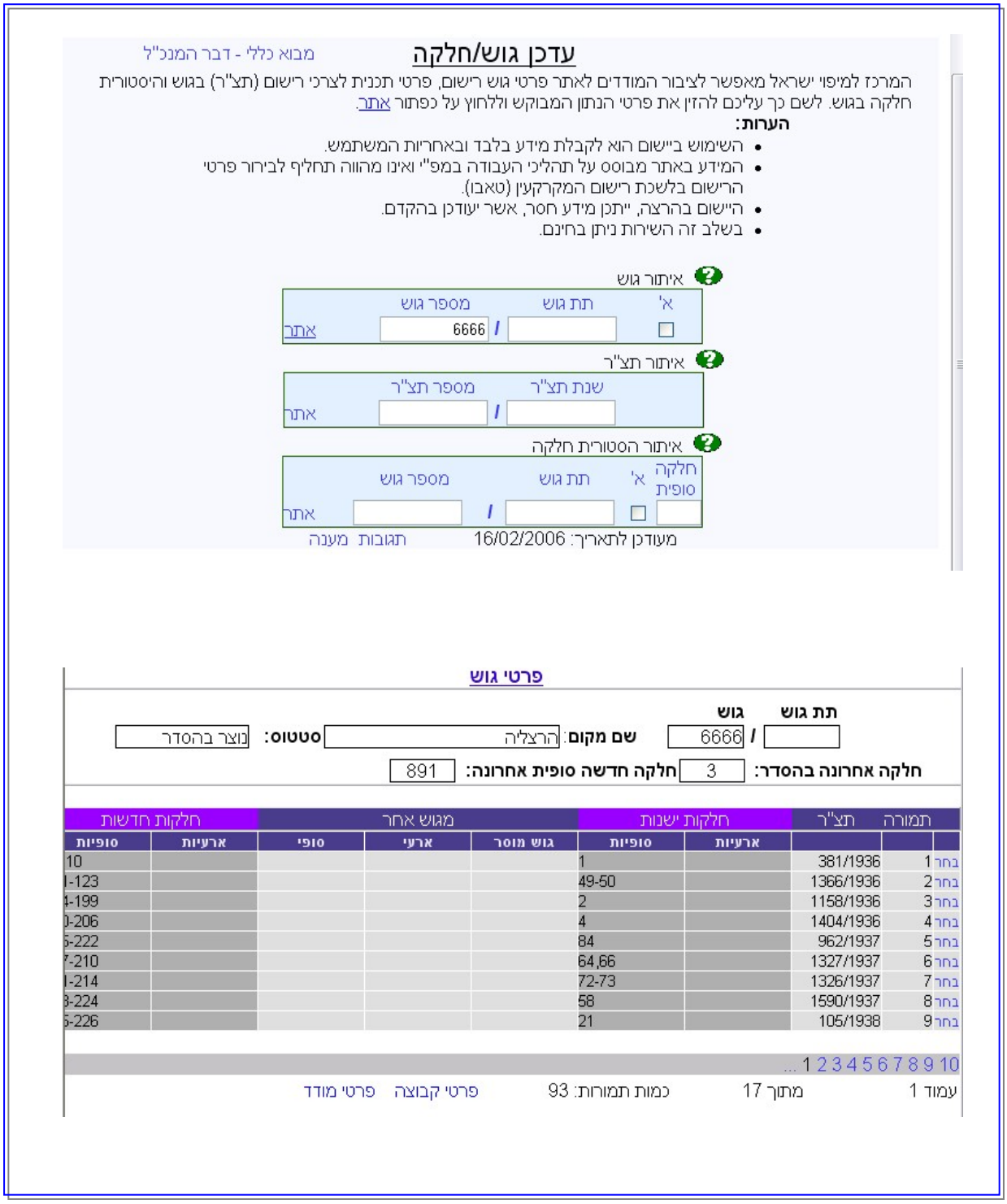

Fig.6. The cadastral history of a parcel (necessary for re-partition plans)

Fig. 7. Recommended preparations and the basic rules of proper behavior in case of an earth quake event, as described on a governmental web-site