

Real Estate

# Geographic Information System

receives Award at  
Mideast User Conference



"The best Use of Analysis Tools" award was won by the Real Estate Information System during The 5th Annual Middle East GIS ESRI User Conference held in Beirut - Lebanon and organized by Khatib & Alami.



Due to the phenomenal growth in urban development during the last 20 years, there was a relatively large volume of land related records. As urban development rapidly expanded, the total number of parcels multiplied. Meanwhile, the RERD working procedures adopted during the end of 1960's are still being applied for the current large amount of transactions. The current RERD data had outgrown the manual system being used. This creates problems for land owners, public planning, administration and civil services functions.

The Qatari delegation that participated in that conference included Mr. Qassim Al-Ghanim, Head of The centre for GIS and several other employees at the centre for GIS and other GIS units in Qatar. The heads of delegations participating in the conference were received by His Excellency Mr. Saleem Al-Houss, Prime Minister of Lebanon

*More on the conference on page 8*

## Background on The Real Estate Registration System

The Real Estate Registration Department (RERD) was established in 1967 with a manual system designed for the workload at that time. RERD is the only department authorized to maintain a Land Cadastre, other agencies which require cadastral data must refer to RERD.

Lately, more attention have been given to land recording and management functions in Qatar, especially from senior government planners. It became evident that the existing land registration system



Meeting with H.E. the Lebanon's Prime Minister

needs to be developed to be able to handle the current as well as the future workload. As a result, The Center for Geographic Information System (CGIS) has started the long awaited GIS Project last November of 1994. The objective of the project is to develop a state of the art Real Estate Information System (REIS). The REIS will fully automate the land

registration process in Qatar using GIS. It will also address the increasing great problems such as duplicate/similar owner names, ad-hoc inquiry, non-standard office procedures, redundant pieces of information and many other issues.

Converting the existing tabular and spatial data records of RERD into digital format is the major activity of the REIS. Tabular and spatial records of the last 31 years that represent different transactions occurred on more than 95,000 parcels are converted into high quality digital data. A huge number of homegrown applications were used to perform conversion activities.

The development of the final REIS is currently under final touches, it is expected to be finished by the end of June 1999. Meanwhile, the digital data resulted from conversion activities is being migrated to the new database structure of the final system.

Once the all development activities are finished, the system is going to be tested. A parallel run along with the manual system will be applied to test the new system and to make necessary updates or enhancements. The parallel run period is expected to take two months. Results of

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# for Municipal Beirut

By: Dr. Fawzi Kabbara  
Khatib & Alami

The use of computerized information is a growing part of everyday life. In today's society people look to electronically stored geographic, social, economic, political, and environment information to help them answer practical questions in their daily lives. The answers they find influence their personal choices and business decisions. Geographic Information Systems (GIS) are an exciting new set of technologies, which can be increasingly utilized as a powerful tool to analyze spatial data.

## Project Mission

The purpose of this project is to develop a user-friendly public guide for Municipal Beirut using Geographic Information Systems (GIS). The objective is simple and similar to the objective of any guide map on paper. However, what's impressive about using GIS here is the ability to have an interactive map, or what we call an intelligent map, whereby you can ask questions and get instant answers about places in mind. you can also inquire about specific places shown on the map and find its location instantly. Spatial data has two distinct forms; "what" something is (its non-spatial quality) and "where" something is (its spatial quality). The challenge is to organize the interface and the functionality so as to make these two forms interact.

## Local Data

Fortunately, a wealth of data at the local level is available and up-to-date, through our organization. The part of it that we used for this project is the street centerlines, street blocks, as well as sectors of Beirut, as presented in figure 1. One of the missions of this project is to provide a new set of local data in a form of themes, which can be used later on.

This digital data included government, historic, entertainment, as well as cultural sites. The common opinion is that people relate better and react more strongly to data they can recognize.



Figure 1

## Project Themes

Themes below were shown on the digital base map of Beirut, together with the information available on each one of them. Figure 2 illustrates a combination of some of the themes in one part of Beirut. You can view any one of them in relation to the landmarks that are permanently shown on the map.



Figure 2

- 1- HOTELS – (Name, no. of stars, location, tel. no.).
- 2- RESTAURANTS – (Name, specialty, location, tel. no).
- 3- EMBASSIES – (Country, location, tel. no).
- 4- MINISTERIES – (Ministry, location, tel. no).
- 5- UNIVERSITIES – (Name, location, tel. no).
- 6- SHOPPING CENTRES – (Name, location, tel. no.).
- 7- MOVIES – (Name, location, tel. no).
- 8- CULTURAL SITES – (Name, location, tel. no).
- 9- HOSPITALS – (Name, location, tel. no).

## Project Development

In our view, the selection process of any site should take into account the entire spatial analysis process. This

process will take care of "What questions do we want to ask? How do we ask our questions? What information do we need in order to answer these questions?" In general, the performance criteria for this process are as follows:

- 1- The application should work quickly.
- 2- Data access should be streamlined.
- 3- Zooming in and out on maps should occur easily and quickly.
- 4- Data input should be easy.
- 5- Common operations should be customized.

The process will be limited to how users manipulate the software to ask questions and get their answers. This is a big challenge, since we expect this project to be used by the general public who may know very little about computers and nothing about GIS.

The user needs only to choose the theme that he is looking for, such as Restaurants for example, in order to have the specified theme list open for him. Next he can choose a restaurant from our list and immediately view its location on the map and its information (such as specialty, telephone, and address) on the side as shown in figure 3.

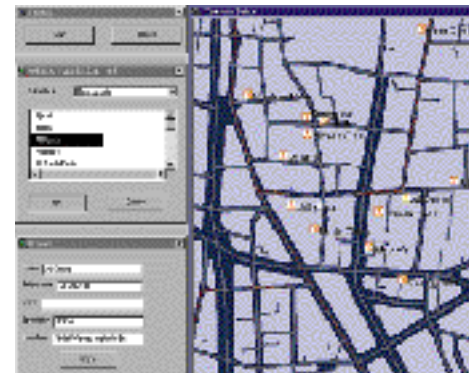


Figure 3

Moreover, by choosing the Hotels theme, for example, you can view all the hotels in Beirut (figure 4 shows the hotels in a specific area). You can also narrow your choice by indicating the

number of stars that you desire to have. Then you can point at one of them on the map, and get more detailed information about its location name, address, and telephone number.



Figure 4

It is also possible to find the best route that you need to follow in order to reach a specific address from a certain point. For example, if you need to go from a certain hotel to a specific embassy, you just open both Hotel and Embassy themes. Then you select the starting, as well as the ending points, and ask the program to solve the network analysis. By looking at figure 5, we can see how the best route to follow is shown as a red line between the two green bullets, which represent the initial and destination stations.

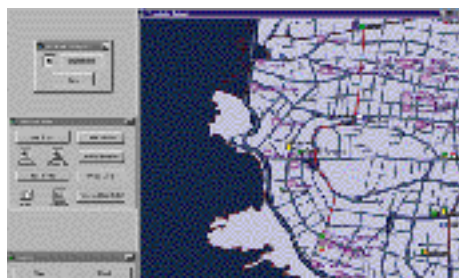


Figure 5

## Future Developments

What's good about such projects is that it gives guidance to people trying to find places in Beirut, in addition to laying the grounds for additional input possibilities. Once we have the base map, we can add more themes to the map at any time, and make it more fruitful and usable for other applications. Hence, increase its benefits in spatially analyzing the area we live and work in.

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manual and new system will be compared for each transaction during the parallel run period, If everything is proved to be O.K., the manual system will be stopped completely and the new system will be applied.

The REIS system has been developed under Forms 4.5 of Developer 2000 while Reports 2.5 were used to develop report generating modules. There are more than 280 Forms and Reports that have been developed. In accordance with the year 2000 concern (Y2K), all data entry screens having data fields were broken down into three sub-fields namely the date, month and year, the year field uses the "YYYY" format. Many Sub-Systems are being developed to handle different transaction types as well as security and Database maintenance.

## REIS provides the following benefits:

- Eliminate uncertainty concerning the extent and content of rights in land and reduces lack of information on how to resolve disputes. Consequently, less litigation and less work for the courts will be resulted.
- Provide guaranteed information on all existing rights on lands and hence provide easier transactions.
- Converting existing land records into digital format involves comprehensive correction of existing data and hence reduces inconsistency among data sources.
- Reduce the long turn-around time and unacceptable delays of registering parcels.
- Provide a digital, accurate and up-to-date cadastral database that is urgently needed for many other departments, especially Lands & Acquisition Department and Planning Department as well as for private agencies and the public.
- Facilitate digital data exchange between RERD and other interrelated departments.
- Facilitate data storing, processing, editing and retrieval and provide unlimited information processing functions and analysis at little or no additional human effort.

## Highlights from the conference

- Khatib & Alami's Marketing & Technical Support staff, headed by Dr. Fawzi Kabbara, and assisted by Ms. Rana Eleid and Mr. Jack Koftikian have done a wonderful job to guarantee the success of this event.
- The theme of the "5th Annual Middle East GIS ESRI User Conference" was "Building Together our Spatial Community".
- Aside from the trade show a Map Gallery was also organized, where participants displayed their GIS work in a map format.



The opening Session of the Middle east User Conference



The Exhibition and Map Gallery