SuperGeo GIS Software & Solution

Wild Creature Data Survey System

Scenario

In recent years, as the conservation consciousness raises, more and more countries are planning to build up the comprehensive web sites and databases to effectively control the distribution of the domestic wild flora and fauna; therefore, the data can be shared by the various related departments for the use of analysis, conservation plan and other value-added applications.

In Taiwan, Endemic Species Research Institute under Council of Agriculture, Executive Yuan, is the institute in charge of assisting government in promoting biodiversity conservation, survey, research and promotion affairs. To catch the international trend, the institute planned to build up a standard system for exchanging and offering data; with the aid of internet technology, an application system can be created for the purpose of data sharing and internet distribution. As a result, “Biodiversity Geographic Information System” is built up by Web 2.0 architecture in which “Wild Creature Data Survey System” is one of the crucial part for field survey purpose.

Challenges

The jurisdictional area of Endemic Species Research Institute covers entire Taiwan. Thus it is very important to have a survey system equipped with GPS position, data management and powerful capabilities of operation and processing for surveyors when they are doing field survey with great amount of data in such a huge area. In conclusion, to effectively cope with the difficulty in surveying in a huge area is a very urgent issue.

In addition, system stability, future function expansion and whether the system can successfully be deployed to multiple mobile devices are the top priority for the institute, too. Moreover, how to effectively overcome this difficulty mentioned above is the essential issue the developers should pay attention to.

A survey system equipped with GPS position, data management and powerful capabilities of operation and processing can assist surveyors in improving their work efficiency.

Solutions

SuperGIS Mobile Engine is used to be the core of developing “Wild Creature Data Survey System.” With the various GIS objects provided by SuperGIS Mobile Engine and the highly flexible development mode, the developers can easily develop Mobile GIS applications meeting users’ needs, and the expansion of the applications will not be restrained. Another strength of developing with SuperGIS Mobile Engine refers that the developed Mobile GIS applications can be deployed to mobile devices supporting .NET CF in large quantities with less cost, effectively reducing the costs of the application deployment.

SuperGIS Mobile Engine is a SDK based on .NET CF, so the developers develop under MS Visual Studio 2005 development environment. All the customization tools and programs can be fully transplanted to operating platforms such as Windows Mobile Edition, Windows Tablet Edition and Windows XP through installing tools.

Results

“Wild Creature Data Survey System” is the system for filling in and submitting field data. The surveyors can collect and record data in the most effective way with this system. The filling in and submitting system allows users to download data from the server or upload the survey result to the server through synchronization with the server. In this way, the additional cost of keying in hard-copy survey data by hand can be reduced, greatly improving efficiency.

The functions provided by the system can be divided into five categories:

1. Various map manipulation functions are provided, such as zooming in/out, panning, full extent and so on.

2. Map Position:

Users can use buildings, landmarks or coordinates to quick position map to the extent where users are interested. Or users can utilize the GPS receiver to display the related map information with the users’ positions as the map center.

3. Switch and Manage Map:

Through the manager interface, users can not only manage the display of feature layers but also can switch the display mode.

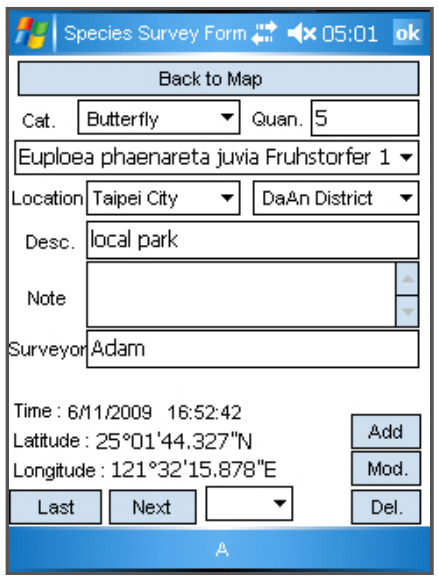
4. Survey Data Management:

The system adopts drop down menus for data input, reducing the inconvenience of hand-writing. Besides, to improve the convenience of inputting, as long as the GPS settings are set ready by users, the system will mark the user’s current position on the map. Whenever the user discovers the surveying species, he/she only needs to switch map to the filling data tab, and the system will automatically input the current coordinate information to the corresponding field.

5. GPS Management:

An easy-to-set GPS setting interface is provided for users to rapidly set up the GPS receiver. Also, through querying current GPS signals, users can understand the receiving status of GPS satellite signals.

In addition, surveyors can bring maps of larger area and more data of flora and fauna with them by storing the data in the high-capacity storage cards without affecting the system performance. In the field, surveyors can effectively collect and build up the detailed spatial and attribute data using the fill-in form and GPS receiver. When the survey is finished, the surveyors can upload the collected data to the server to effectively and centrally manage data. As to the other related departments, they can download data through the server and make the best of the survey data.



The system provides a fill-in form.

Challenges

Endemic Species Research Institute needs a set of system with GPS navigation, data management and powerful capabilities of operation and processing for field survey. And system stability, future function expansion and system deployment efficiency will be focused in development as well.

Software Used

SuperGIS Mobile Engine 3

Microsoft® Windows Mobile® 6.0

Results

- Through the electronic filling in and submitting system, the data is synchronously updated to the server, reducing the hand-registration and effectively improving working efficiency.
- With the highly flexible development environment feature of SuperGIS Mobile Engine, various needed toolbar buttons, forms and many other functions can be customized.

FOR MORE INFORMATION

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