RESEARCH OF ACTIVE ONLINE THEMATIC MAP CARTOGRAPHY BASED ON RIA

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BACKGROUND AND OBJECTIVES

Thematic maps have been an ordinary application in various industries with its intuitive, efficient and novelty. From the application demand, online thematic cartography can meet the needs of user's real-time mapping and personalized mapping. Firstly, from the perspective of software development, with BS structure of the software model used widely, the original stand-alone thematic cartography has been converted as service-oriented and network based, which is the initial model of online thematic maps. Nowadays, the modes of images of thin client and vector of fat client have been used in the LAN, WAN applications in many areas. But the mode of vector of thin client has many limitations for no unified standard of multiple browsers (IE, FireFox, etc.), which prevents it developing quickly, though it has good prospects for development because of its OGC Standards. And RIA technology is based on the mature lightweight plug-in technology to satisfy the demands of network and stand-alone application, such as flash technology, can address the needs of increasingly demanding from the beautiful graphics, high efficiency and good experiences of online thematic mapping.

The basic work of online mapping of thematic maps, namely the process of thematic cartography is not avoided, and the intelligence and complexity of this process have a direct impact on the effects of online mapping applications. At present, many software have done a lot of work in this area, such as sophisticated template technology mapping, which builds some steps to allow the user to select various parameters, then get the thematic maps, even though, which still having a big gap from easy mapping of thematic maps for persons without professional knowledge. So the author brings out the idea of active online thematic map cartography with reliable knowledge of thematic cartography, which can do lots of work for user as many as possible to reduce the complexity of thematic cartography, especially selecting confused, professional mapping parameters, such as thematic symbols, colors, grade num, etc.

ACTIVE FRAMEWORK FOR ONLINE THEMATIC CARTOGRAPHY

RIA Technology is a new generation of network applications with characters of high-performance desktop applications, the rich user interface and easy deployment as web application, etc.. Rich client of RIA enables the client can load the operating environment of the compiled application (in document form, with the HTTP transfer), and client application uses asynchronous client / server architecture to connect the existing back-end application server, which is secure, scalable and having good adaptability of the new service-oriented model. When users needs only a thematic map drawing without their own mapping data and thematic data, the data search service will be available and using, which can search suitable data for users. In addition, thematic mapping symbol type, grade classification of data, data classification and the number of color choices can be fixed or judged based on user demand by active system to provide proactive service. In short, the initiative of active thematic cartography can be reflected in the two aspects as follows:

1) Searching data: active thematic cartography can search required data to the user initiatively.

2) Finding optimal parameters: active thematic Cartography can construct suitable parameters, and different requirements may construct different mapping parameters.

THE MAIN KNOWLEDGE BUILDING FOR ACTIVE THEMATIC CARTOGRAPHY

In general, thematic map cartography can be divided into four processes: understanding, solution, evaluation and learning. Thus, analysis of thematic map data features is the first step in mapping, and the follow processes of knowledge building are closely linked with the data properties. Thematic data is divided into one-dimensional, two-dimensional and multidimensional, with different dimensions of the data set can be divided into categories (qualitative schemes), sequencing (with order), fixed pitch (which can add and subtract), fixed ratio (which can multiply and divide) and irregular quantitative data, while the irregular quantitative data also can be approximated by different linear function or multiple functions by fitting or interpolation.

Then, through study of thematic mapping symbol type, thematic mapping symbol type (histogram, pie chart, line chart, pyramid, etc.) can also be classified according to the dimension and data characters. Further more, according to adaptability to classes, thematic map symbol types can get correspondence relationship with data classes. By this way, the right type of thematic mapping symbol type is obtained to meet the expressed needs of the display of thematic data, which is helped by original knowledge, knowledge tested and Knowledge learning.

CONCLUSION AND FUTURE PLANS

With the development of online thematic maps, and increasingly high demand of thematic map cartography, this paper probes the methods of knowledge building of Active online thematic cartography. By means of efficient RIA technology platform, active online thematic cartography can easily realize the beauty and animation of thematic cartography, including efficient user interaction. Active Online thematic cartography is an upgrade project of cartography of template, which can help cartographer without professional knowledge to quickly build thematic maps of professional level, promoting the wide use of online thematic maps applications.