DCGG: Digital City Group Grid

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Abstract: There is a serious problem in digital city construction which has not been intentioned and solved before. Different cities construct different digital cities using different data formats and different software, which causes that there are many separated digital cities which can not communicate with each other. We applied grid technology successfully in solving the problem, Digital city group grid (DCGG) can support the communications and collaborations between different digital city application systems and can make all digital cities in DCGG can run together as a large digital city. Users can visit one digital city after another without logging out or switching and can search any information among all digital cities in DCGG.

Key words: digital city; group; grid

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1. Introduction

Current digital cities are constructed for a single city or for an application, such as entertainment and trade, of a single city. The currently digital city usually refers to a single digital city, and many researchers on digital city only concern how to construct a single digital city for a single city [1] [2]. Current digital cities have no relation with each other although corresponding cities have many relations with each other in reality. So the current digital cities can not simulate the real cities when the relationships among them need to be considered. Then many requirements of digital city users can not be met. These requirements include touring from one digital city to another digital city, the polices of many digital cities join up to hunt criminals at large in many digital cities, monitoring the pollution spreading abroad among different cities, analyzing the trade among different cities and so on. DCGG applies grid technology to satisfy such type of requirements, so that different digital cities can know each other, can change with each other and can collaborate with each other just as cities in reality.

3. The application of grid technology in digital city group

Figure 1. The hierarchical organization of DCGG

All the digital cities and the digital city subgroups in a digital city group can be constructed, run, and visited on
distributed computers and other devices which are integrated by a grid, as shown in figure 1. Such grid is brought forward firstly by this paper as Digital City Group Grid (DCGG), as shown in figure 2.

![Diagram of Digital City Group Grid]

**Figure 2.** The architecture of digital city group grid

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**Reference**

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