Abstract

master's degree attestation work
on a theme:
“Grid is the system for the Earth sciences”
Olga Bilobrova

Actuality of work

Modern development of informative society is characterized by the processes of globalization and active application of achievements of informatics and computing engineering for the decision of economic and ecological issues of the day with the purpose of providing of steady development and safety of population. Information technologies and newest achievements in the area of high-efficiency calculations become far more accessible, than before.

For today both in the whole world and in Ukraine, become popular and the distributed informative systems which give access to the large depositories of information and other resources find the application. In same queue, there is extraordinarily swift growth of volumes given in all possible directions, in that number scientific, in particular in the Earth sciences. The flows of data are registered in a digital kind or digitised with a purpose them subsequent computer treatment and analysis. Quick all the volumes of information grow in such areas of the Earth sciences, as a remote sensing, supervision of Earth from space, sun earthly copulas, meteorology, seismology, applied geophysics, search of useful minerals, climatology, including the problems of global change of climate. Thus, there is a problem of effective treatment and storage of enormous arrays of information that filled up continuously.

Grid is the opened and standardized environment, which provides the flexible, safe, co-ordinated division of calculable resources and resources storages of

information, which are part of this environment, concerted, within the framework of one virtual organization.

Presently Grid technology and created on their basis the informative systems are up-diffused develop actively. Moreover, it is necessary to mark that in many application areas exactly with conception of Grid link the nearest prospects. To the number of such subject domains it follows to take and sphere of processing of data for the Earth sciences.

Taking into account the high cost of architectural components of Grid system of information which are processed, and also actuality and importance of the tasks decided in them, it is arisen up scientifically applied problem of study of Grid systems for the Earth sciences with the purpose of their creation in the future. To the decision exactly of this problem and the devoted work.

Purpose of work

The purpose of work is research of features of Grid systems and their application for the Earth sciences, by the study of existent initiatives and projects in the area of the Earth sciences and application of Grid systems in world practice and estimation of national situation of introduction of Grid technologies for recommendations in relation to introduction of Grid systems for the Earth sciences in Ukraine.

Tasks which get untied in-process

1. Research of features of existent projects of Grid technology in the area of the Earth sciences with the purpose of their study and application of world practice in the construction of national Grid infrastructure.
2. Research of features of construction of Grid systems is for the Earth sciences, with the purpose of the use of such possibilities in the Ukrainian segment of Grid.
3. An analysis of the modern state and progress of Grid trend is in Ukraine.

4. Estimation of possibility of creation of Grid systems for the Earth sciences in Ukraine.

Attained results

Uniting tasks which are put in-process, an author protects:

1. Results of analysis of Grid systems are for the Earth sciences.

2. Formulated recommendations in relation to creation of Grid systems for the Earth sciences in Ukraine.

Scientific novelty of work

The scientific novelty of work consists in that:

1. The analysis of Grid systems is first carried out for the Earth sciences and recommendations are formulated in relation to creation of similar Grid systems in Ukraine;

2. Technologies of co-operation are investigational between components (by levels) in architecture of Grid systems for the Earth sciences.

3. Grid - is considered systems which organize global access to the up-diffused information from the Earth sciences.

4. It is analysed modern world Grid of initiative and projects in the area of the Earth sciences.

Practical value of work

The practical value of work consists in that:

As a result, of analysis and study of different world Grid projects and Grid systems for the Earth sciences, the row of recommendations was formulated in relation to development of semantic Grid technologies in Ukraine.

Conclusions

1. The modern state and progress of different projects of Grid trends is analysed, constrained with the use of geoinformation data, and also certainly basic features of their development and future applications for the Earth sciences.

2. International projects are considered in the area of geoinformation researches and the Earth sciences, most which are oriented to such tasks, as global changes of climate, research of space, study of bottom of ocean and terrene, design of seismic processes.

3. The conducted analysis of constituents of Grid systems is for the Earth sciences, the row of general lines, which was observed for all considered Grid systems and row of features, inherent only some of them, was selected as a result.

4. The analysed situation of introduction of Grid technologies in Ukraine. As a result of consideration of reports in relation to realization of the «Government having a special purpose scientific and technical program of introduction and application of Grid technologies on 2009 – 2013 years» a few projects were selected from development of Grid- of technologies for the Earth sciences in Ukraine, they are analysed basic directions of development.

5. Recommendations are formulated in relation to application of semantic Grid technologies for the Earth sciences in Ukraine.

Work contains 68 pages, 18 picture, 35 sources.

Keywords: Grid system, Grid technology, Grid for the Earth sciences.