【Grant-in-Aid for Scientific Research(S)】

Integrated Science and Innovative Science (Comprehensive fields)

Title of Project : Development of International Geospatial Data Sharing System for the Understanding of Land Environment

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Research Area : Remote sensing

Keyword : Remote sensing, Geographic information system, Environmental information

【Purpose and Background of the Research】

As the recognition of the importance of global environment spreads, many researchers/ research organizations have been produced different types of environmental data in different academic fields. However most of the produced data are used only in a limited research community. In order to understand our environment more, we need to analyze the environment by integrating existing data. This idea was published by Tateishi and Hastings (2000).

The purpose of this project is to develop international data sharing system for further understanding of land environment. The requirements of the developed system are 1) capability to overlay researcher's own data on other researchers' data, 2) capability to browse images by any person, 3) Theoretically unlimited expansion of servers.

【Research Methods】

The main part of the project is system development and the other part is applications using the developed system. Two applications are planned: the production of global land cover data and environmental analysis of Asia.

The steps of the system development are as follows. 1) Survey of existing data distribution systems, 2) Design of the system, 3) Development of minimum system in Japan within two years, 4) improvement of the system and international expansion in the following three years.

【Expected Research Achievements and Scientific Significance】

The main expected achievement is the development of an international free-access cluster-type geospatial data sharing system (Fig. 1) which allows users (researchers who use geospatial data) view others' data, overlay his/her data with others, and register/download data freely. Scientific significance of the project is that this system can promote to discover new research subjects and to analyze relationships among different geospatial data by overlaying his/her data with other data easily and freely. The system will be maintained and used even after the 5-year project period.

Though the developed system can be used for any geospatial analysis, two applications will be expected in this project. One is the production of high-accuracy global land cover data. The other one is the understanding of environmental changes in East and South-east Asia for 100 years using by satellite data and old maps.

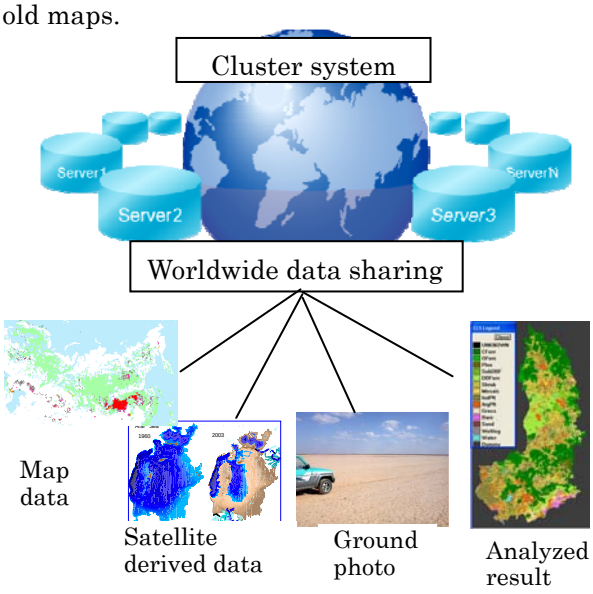

Fig. 1 International geospatial data sharing system

【Publications Relevant to the Project】

・Tateishi, R. and D. Hastings (Ed.), Global Environmental Databases, ISPRS WG IV/6 (1996-2000), 250p., July 2000

・Chandra Giri, David Hastings, Bradley Reed and Ryutaro Tateishi, Chapter 9, Status and Future of Global Databases, Manual of Geographic Information Systems, pp.113-139, ASPRS, 2009

【Term of Project】 FY2010-2014

【Budget Allocation】 83,100 Thousand Yen

【Homepage Address and Other Contact Information】

http://www.cr.chiba-u.jp/~tateishi-lab/home.htm