

Disaster-Related Information Clearing House

Kohei Arai and Yasunori Terayama

Department of Information Science Saga University 1 Honjo, Saga 840-8502 Japan
arai@is.saga-u.ac.jp

Abstract

In order to provide disaster-related information to the public, a portal site (Disaster-Related Information Clearing House: DiRICle) is proposed and created at Saga University (Saga Model). The model allows for information on satellite locations, the most recent satellite images, disaster-related events, satellite data retrieval, software tools and satellite image data browsing formatted in HDF with DIAL (NWGISS). The proposed clearing house allows one to access the ADRC, PDC, and the other disaster-related sites in the world.

Key words: Disaster Information; Clearing House

1. Introduction

Existing search engines can be divided into two categories: those which allow the user to find the remote sensing satellite data, and those which allow the user to oversee disaster relief, view disaster-related events and so on. There is no search engine which allows the user to find the next available satellite location after the disaster occurrence, the most recent satellite imagery data of the disaster-stricken areas, satellite data retrievals with natural language, satellite image analysis software retrieval, satellite image data browsing formatted in HDF format. In order to monitor and mitigate disaster--natural disasters in particular--satellite image data analysis is badly required. The next available satellite which allows one to observe the disaster occurred areas is important information. The most recent satellite imagery data of the disaster-stricken areas is also important. Quick analysis is then highly required for the disaster mitigation in order to avoid a secondary disaster, making it more important for a smart search engine for the most appropriate satellite data retrieval. Nowadays, almost all the satellite image data is formatted in HDF, so that a satellite image browsing in HDF format is required. One system is developed by CEOS/WGISS, called DIAL, NWGISS (the most recent version of DIAL). The Saga model which is called DiRICle is created for the aforementioned purposes. The model also provides Java-based software tools for satellite image data analysis as well as internet GIS and visualization tools.

2. Proposed Saga Model (Disaster-Related Information Clearing House: DiRICle System)

2.1 Definition of Information Clearing House

An Information Clearing House provides information on sources by using search engines, as shown in [Figs 1](#), [Fig. 2](#), and [Fig. 3](#), which correspond to worldwide, Asian-wide and Nationwide (Japan) information clearing houses. Through this information clearing house, users get information on not only information sources but also information itself--even links to the information provider (in this case the information clearing house looks like a Web portal).

2.2 Saga Model

[Fig. 4](#) shows the site map of the Saga Model. From this site, the next available satellite which allows users to observe the disaster occurred areas is critical. The most recent satellite imagery data of the disaster-stricken areas is also important. Quick analysis is then highly required for the disaster mitigation in order to avoid a secondary disaster, making it more important for a smart search engine for the most appropriate satellite data retrieval. Nowadays, almost all the satellite image data is formatted in HDF, so that a satellite image browsing in HDF format is required. One system is developed by CEOS/WGISS, called DIAL, NWGISS (the most recent version of DIAL).

[Fig. 5](#) shows the main menu. [Fig. 6](#), [Fig. 7](#) and [Fig. 8](#) show satellite location displays, the most recent satellite image displays, and examples of satellite image analyzation results, respectively. In particular, by using the examples of satellite image analyzation results functionally, users may access the disaster-related organizations, including Asian Disaster Reduction Center, Pacific Disaster Center, etc. [Fig. 9](#) shows disaster-related organizations' URL search engines. If users enter a query with natural language, the Saga Model may search the most appropriate URL with keywords in the query. It is a kind of text search function. One of the examples of the search results is shown in [Fig. 10](#) with the keyword of Sea Surface Temperature. [Fig. 11](#) shows a

free software download function. Java applications for satellite image analysis are available with manuals.

Nowadays, almost all the satellite imagery data are formatted in HDF format. For those who are not familiar with HDF (it is a little complicated), DIAL provides the function of satellite image browsing capability. [Fig. 12](#) shows the menu of the DIAL, while [Fig. 13](#) shows a map-assisted satellite data search function. One of the examples of the search results is shown in [Fig. 14](#), while the scientific data browsing result is shown in [Fig. 15](#). [Fig.16](#) shows the search results of ADEOS/OCTS browse image with attributes, while [Fig. 17](#) shows an image's displayed result.

3. Concluding Remarks

The proposed clearing house concept allows access to the ADRC, PDC, and the other disaster-related sites in the world. The clearing house provides information on satellite locations, the most recent satellite images, disaster-related events, satellite data retrieval, software tools and satellite image data browsing formatted in HDF with DIAL (NWGISS). Also, the Saga Model provides Internet GIS based on EXCEL (Map option) which can be used for Open GIS system (the functionality of the format conversion from any format to GIF format is available) together with visualization capabilities based on VIS5D, which allows the display of images in 3D with an animation function.

<Figures>

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