

# WEB 2.0 BASED SATELLITE IMAGES SEARCH THROUGH MASH-UP

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## ABSTRACT:

To maximize the utility of satellite image materials, those who gain access to such for the first time or who lack the necessary knowledge as well as the existing users should be able to access such materials easily. This study sought to come up with an easy and simple search function of images by entering only the year the images were taken and the names of places based on web 2.0, which has been gaining increasing popularity recently. In addition, it was designed to develop a new satellite image search system through Mash-up without drawing the line between users and managers.

## 1. INTRODUCTION

The effective spread and distribution of satellite image data require providing users with detailed information on the price range and various price policies according to the individual's purpose; ditto for offering a portal service with satellite image data as well as simple search service for images to develop a satellite image search system that provides rapidly changing satellite image data, distributes satellite image materials at the state level, and forms communities of buyers.

This could be an opportunity to enhance the values of the satellite image data being used for various purposes as fundamental infrastructure in the satellite image industry.

Furthermore, with the spread of the web and the Internet, we are living in a wealth of contents. Thus, the current system that merely gives us simple texts does not satisfy users' insatiable needs.

We are in need of an improved system, necessitating going beyond using the system for searching texts only. By reflecting the webpage designers' ideas and using new contents such as the recently emerging UCC, a webpage design that can arouse the interest of users can be realized.

Mash-up can have a big role in the business environment. This study will discuss a few of the practical uses that could be made of this technology; with specific reference to, the end-user desire for personalised information services, addressing information overload issues, and the need for technology integration.

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## 2. STUDY RELATED TO MASH-UP BASED SYSTEM

Mash-up creates new software service and database by integrating web-based information and services. It has captured the attention of the people with its web 2.0 configurations.

It also includes the map service provided by Google, Yahoo, and Microsoft and product information offered by online Amazon.

Mash-up create new services for consumers which allow them to create a lot of new possibilities. It is becoming more straightforward for end-users to create Mash-up sites regardless of their technical skill level by using a site's Application Programming Interface (API).

This provides a simple way to implement Mash-up and new consumers can create a Mash-up easily. With all APIs available, enterprises can easily build applications that are cheaper, more reusable and more maintainable.

The web 2.0 is all about the personalisation of information. In that context, Mash-up can grow faster since every Mash-up can offer new features from existing websites, in fact, Emory M. Craig states that on Programmableweb.com around three new Mash-up sites are added every day.

It is easy to imagine how you can create a personalised information service when you have the ability to add features with Mash-up. As they are a part of the web 2.0, Mash-up increases the level of personalization of the Internet. (<http://en.wikipedia.org/wiki/Mashup>).

Mash-up are a form of technology integration as they can be adapted to join together many technologies and use many types

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of implementation languages. Some mash-ups can be as simple as mixing together some JavaScript code with XML to create a new and innovative web-based service.

Other larger Mash-up which are the main focus of their respective website will take advantage of services such as Google Maps and a database which uses street addresses to link the two together and project information onto the map.

This study sought to build a system using web-based HTML, ASP, and Dream weaver so that a new satellite image search system can be created using the new service (<http://en.wikipedia.org/wiki/Mashup>).

In addition, DBMS (Database Management System) and ORACLE Version 9.2 were used to build the system. AJAX, which is asynchronous, was used to create a comfortable and fast search environment. Visual Basic 6.0 was used for the coordinate transformation to change it to component so that users can use more precise coordinates on the web.

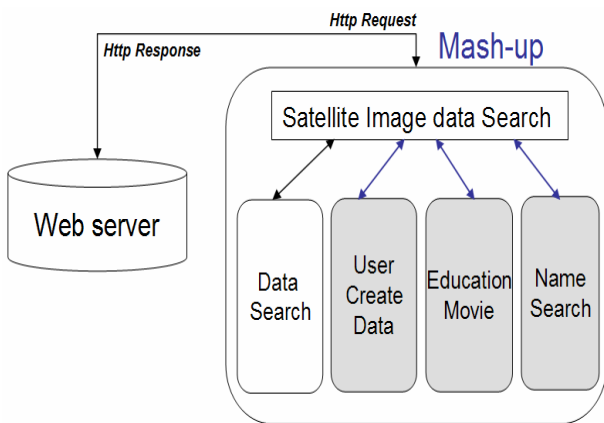


Figure 1. System architecture

### 3. SATELLITE IMAGE SEARCH SYSTEM USING MASH-UP

#### 3.1 Data Search

Aside from the simple search functions for entering the names of satellites and sensors, cloudiness, processing level, and coordinates, more detailed search conditions were added. Likewise, the detailed search function enables providing the coordinate transformation service in the system for the user's convenience.

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Figure 2. Data search

#### 3.2 Education Movie

The satellite image search system offers online classes to enable students to acquire basic knowledge and apply satellite images as well as enhance the utility of satellite images further.

Contents consist of the following: an outline of spatial information technology, the concept of remote sensing, the integration of satellite images and GIS (1) and (2), and the utility of satellite images to build a U-City.

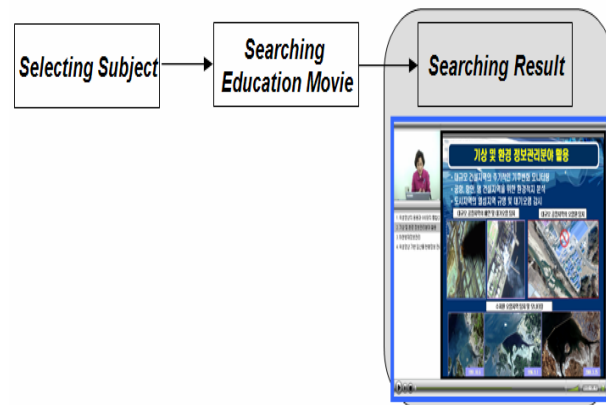


Figure 3. Education movie

#### 3.3 User Create Data

Among the major functions of the satellite image search system, the Archive function is based on UCC, i.e., made by users. In fact, UCC has been gaining increasing popularity in recent years.

When logging in to the system, the manager ID is given to access the system and enter the details (names of satellites and sensors, cloudiness, processing level, and coordinates at the top left and bottom right of the satellite image) of the data in the Archive to search their images.

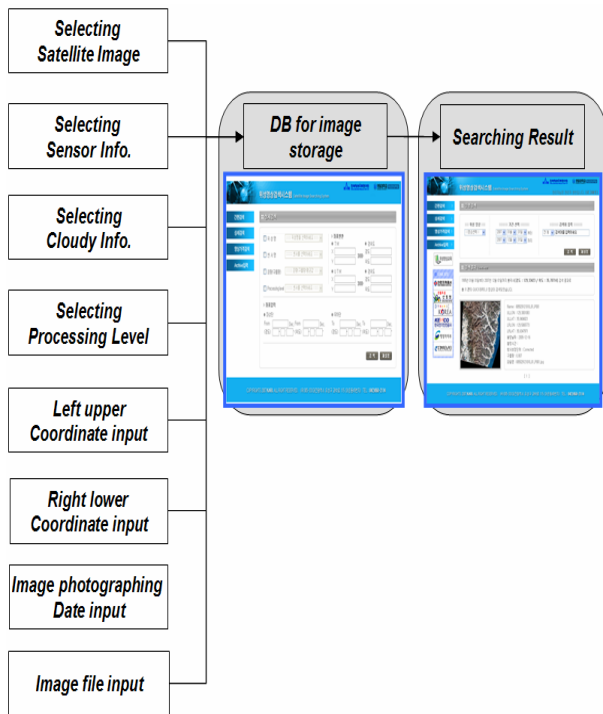


Figure 4. User create sata

### 3.4 Price Search

Among the major functions of the system, the Price Search function allows calculating only the area needed by a user and provides price information by area instead of selling satellite images by scene.

Moreover, if a user selects the names of the city, gun, and myeon he/she wants to search, the system automatically calculates the area and provides price information on the area in real time. Entering the name of a major area as well as administrative districts enables searching price data based on the overall price of selected areas.

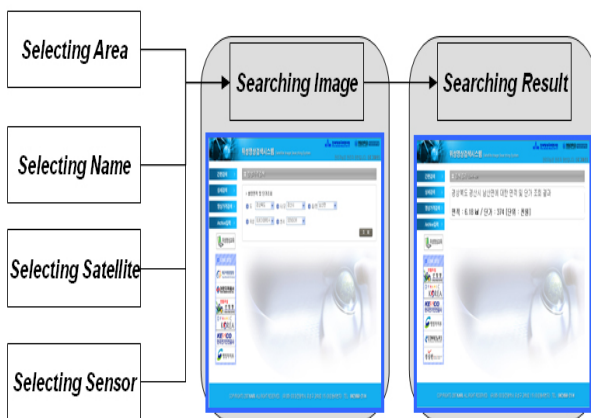


Figure 4. Price search

## 4. CONCLUSION

This study offers detailed information on the price range and various price policies according to an individual's purpose. Moreover, portal service with satellite image data and simple search service for images are provided, with a satellite image search system offering rapidly changing satellite image data developed.

Satellite image materials at the state level are also distributed, and communities of buyers, formed. In terms of the development of a web-based commercial satellite image site using high resolution, a portal site with people participation has become popular.

In line with the recent trend, user-oriented price search, online educational classes, and UCC (User-Created Content) can be connected with the satellite image industry.

There is a need to distribute image data, manage systematically the information for distribution (purchasers' personal information, information on related areas), analyze precisely the current search system, and review the improvement thoroughly.

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