



National Spatial Data Infrastructure Research Program

Development of open source processing technology for
Application of spatial information SW

GeoCMS User Manual



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

1.1. Business overview

Internationally, the importance of utilizing spatial information is increasing, but the spatial information infrastructure including open source software based on domestic is weak, and the level of practical application of related technology is still low, so it relies on foreign software.

Accordingly, we developed an open source based system for generating and managing new and user-space-based new media space information contents on the web and mobile, gained import substitution effect of foreign-based software, improved technology self-reliance, The goal is to do.

1.2. Business background and necessity

In recent years, services such as Instagram, Vine, and YouTube have emerged as a result of increasing demand for services for various new media space information collected through mobile terminals and for linking with external systems. However, this is a simple media management / service technology, Technology for combined service with information service is very limited.

To solve this problem, it is necessary to provide services for efficient management and service of new media space information that is diversified according to the development of mobile and computing technologies such as Google Glass and panoramic space image. In the case of developing / distributing system in open source form, It is possible to manage users' participation in new media space information in private..

1.3. Business Goals

The ultimate goal is to implement and provide open source spatial information content management system (GeoCMS), which will be utilized by public and private operators and put into practical use.

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- 1) New media space information contents authoring and publishing technology development
- 2) New media space information analysis and service engine technology development
- 3) User-Participated Web / Mobile based Geospatial Content Management System (GeoCMS) technology development
- 4) Development of technology for linking and utilizing public and commercial space information systems

1.4. Benefit

1.4.1. Technical expectation effect

- Overcome the dependency of specific foreign SWs and reduce SW acquisition and maintenance costs
- Enhance technology self-reliance with development of open source software for spatial information led by domestic technology, and successfully commercialize R & D results
- Quickly develop and validate high-level SWs to quickly implement products

1.4.2. Economic / Industrial Expected Effects

- Cost substitution and cheap introduction / utilization cost of public information system in the public sector
- Strengthen domestic SW industry ecosystem based on open source SW technology for spatial information
To foster the spatial information software industry, to nurture specialized personnel for spatial information software development and to create jobs

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

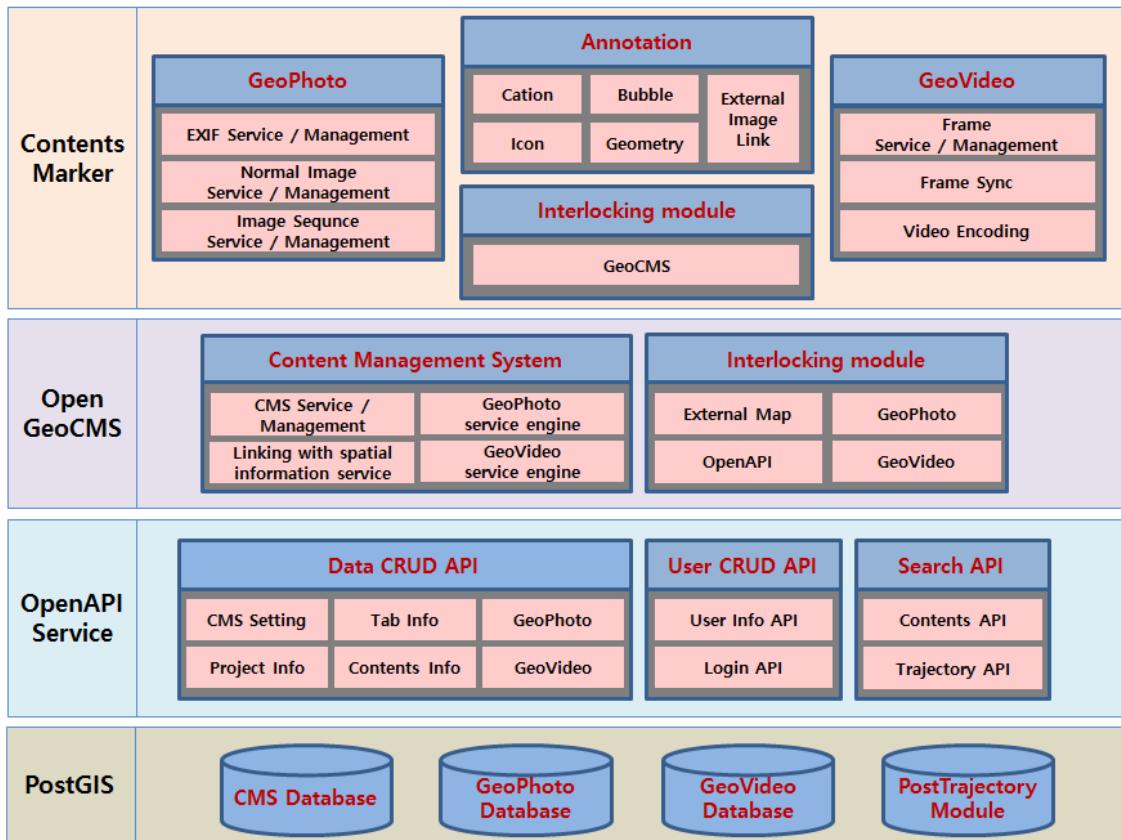
2. Development Contents

2.1. GeoCMS Operating Environment

Software Information		
operating system	server	Apache Tomcat 6.0
	Client	Chrome 44+
Uniqueness (Product activation requirements)	External map engines (such as GoogleMaps) and Open APIs (such as Google Geocoding) should be available. DB :PostgreSQL 9.6	
Hardware Information		
Other environment	2.4GHz, 4G RAM, Winows 10	

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

2.2. System structure

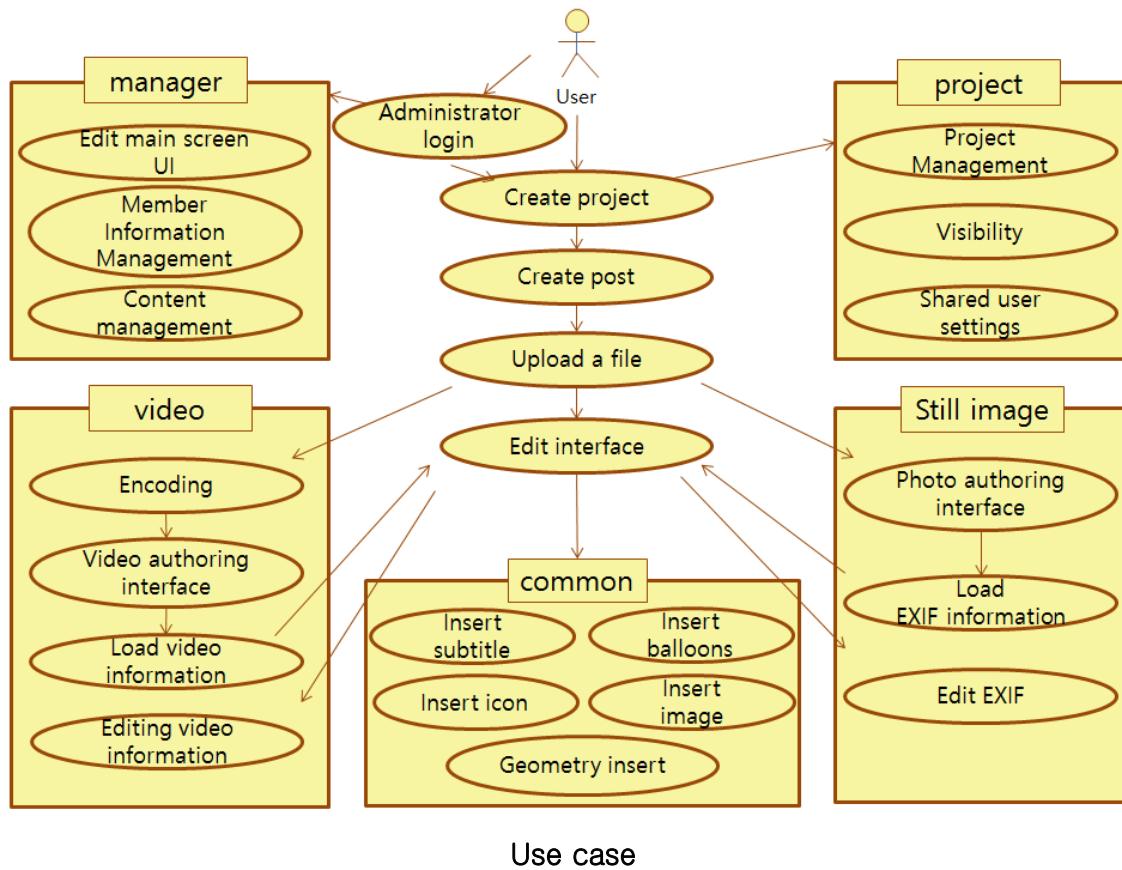


System structure diagram

The GeoCMS platform is divided into authoring function, interworking function, and web service function.

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

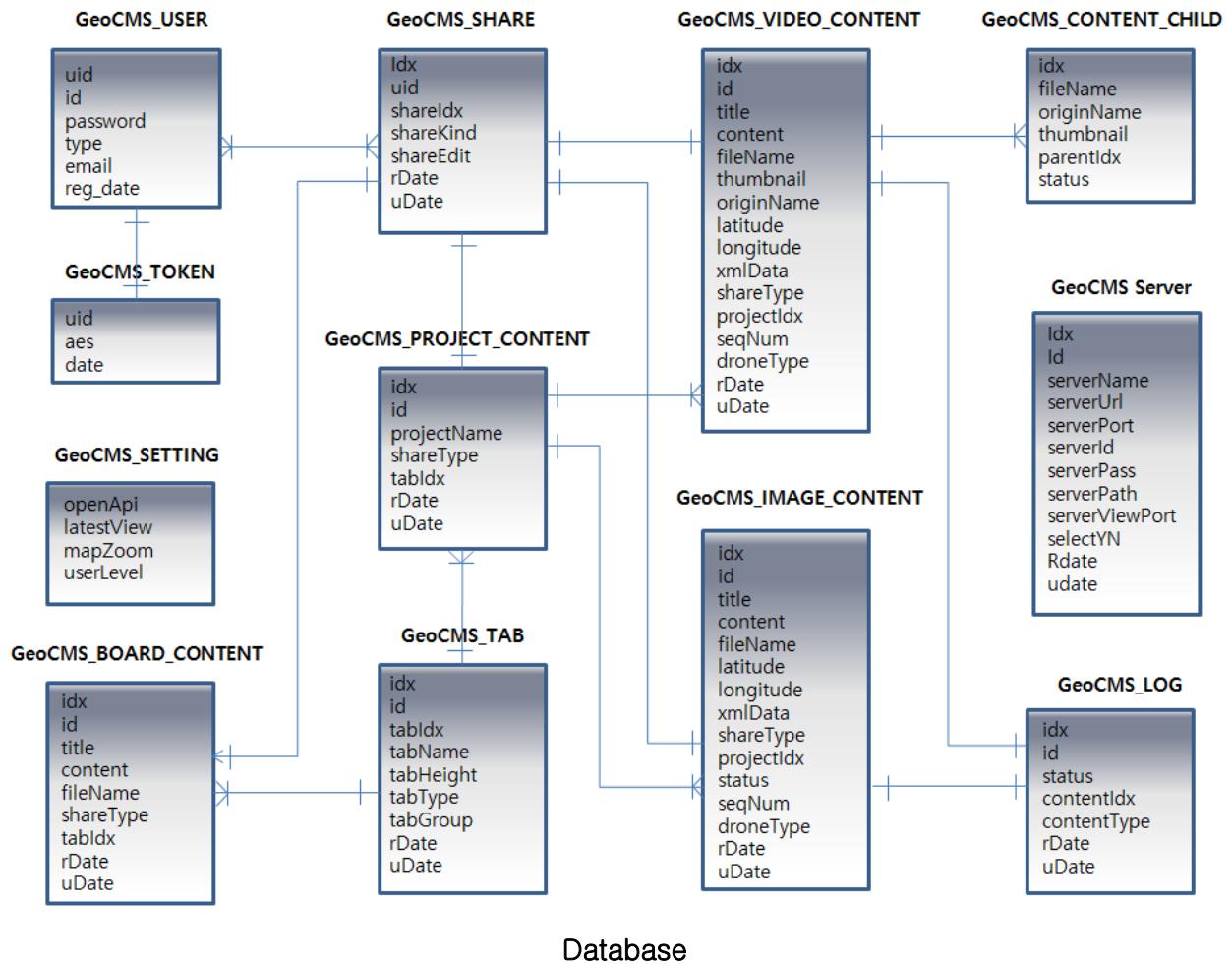
2.3. Use case



Use case

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

2.4. Database



Database

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

2.5. XML Schema

- When the photo and video content information is stored in XML and shared, it is composed of the following schema

```

<?xml version="1.0" encoding="UTF-8"?>
<GeoCMS>
  - <obj>
    <id>g</id>
    <top>300</top>
    <left>235</left>
    <xstr>235_391</xstr>
    <ystr>294_420</ystr>
    <linecolor>#ff0</linecolor>
    <backgroundcolor>#FF0000</backgroundcolor>
    <type>rect</type>
  </obj>
  - <obj>
    <id>b</id>
    <top>250</top>
    <left>232</left>
    <href>false</href>
    <underline>false</underline>
    <italic>false</italic>
    <bold>true</bold>
    <fontsize>H1</fontsize>
    <fontcolor>#ffffff</fontcolor>
    <backgroundcolor>#0000ff</backgroundcolor>
    <text>방지턱 입니다.</text>
  </obj>
  - <obj>
    <id>i</id>
    <top>268</top>
    <left>390</left>
    <width>79px</width>
    <height>68px</height>
    <src>/GeoPhoto/images/geoImg/icon/black/d130.png</src>
  </obj>
</GeoCMS>

```

XML Schema

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

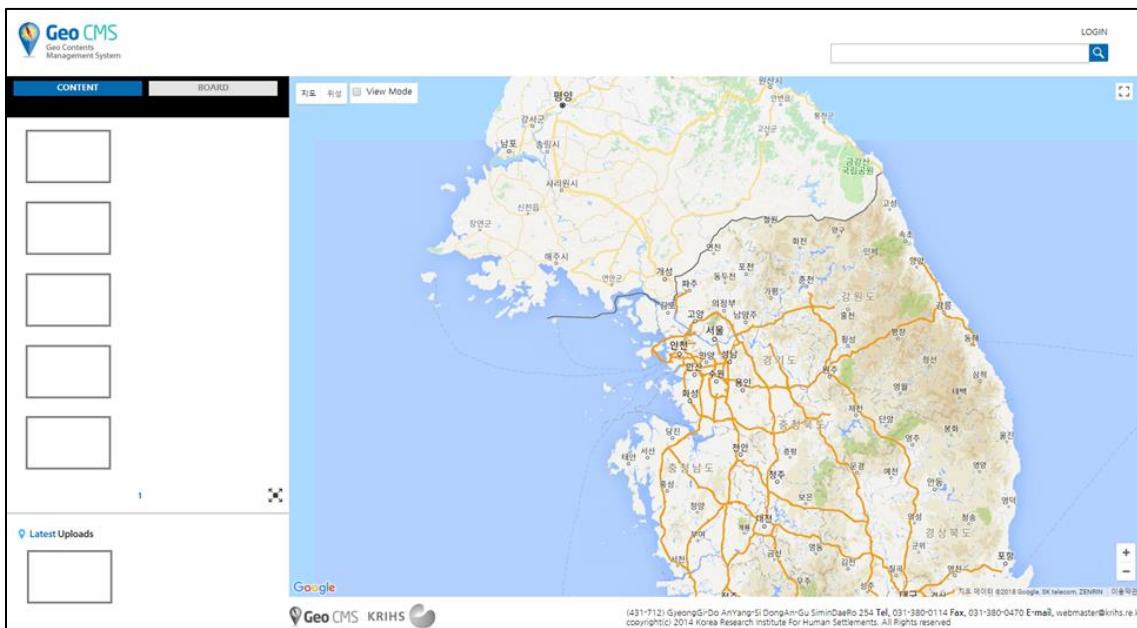
Type	Tag Name	Description
All	GeoCMS	Top-level Tag name
All	obj	Authored Annotation Information Tag
All	id	Annotation ID Tag
All	top	Top Position coordinate value
All	left	Left position coordinate value
Icon	width	Width value of icon
Icon	height	Height value of icon
Icon	src	Src (externally accessible URL) path of the icon
Caption, Bubble	href	External reference link URL path
Caption, Bubble	underline	Underline Attribute value of Text
Caption, Bubble	italic	Italic Attribute value of Text
Caption, Bubble	bold	Bold Attribute value of Text
Caption, Bubble	fontsize	Text size attribute value of Text
Caption, Bubble	fontcolor	Color attribute value of Text
All	backgroundcolor	Annotation background color value
Caption, Bubble	text	User string value
Geometry	xstr	Geometry X Point value
Geometry	ystr	Geometry Y Point value
Geometry	linecolor	Line color attribute value of the geometry
Geometry	type	Type property value of geometry (point, circle, rect)

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3. Using GeoCMS

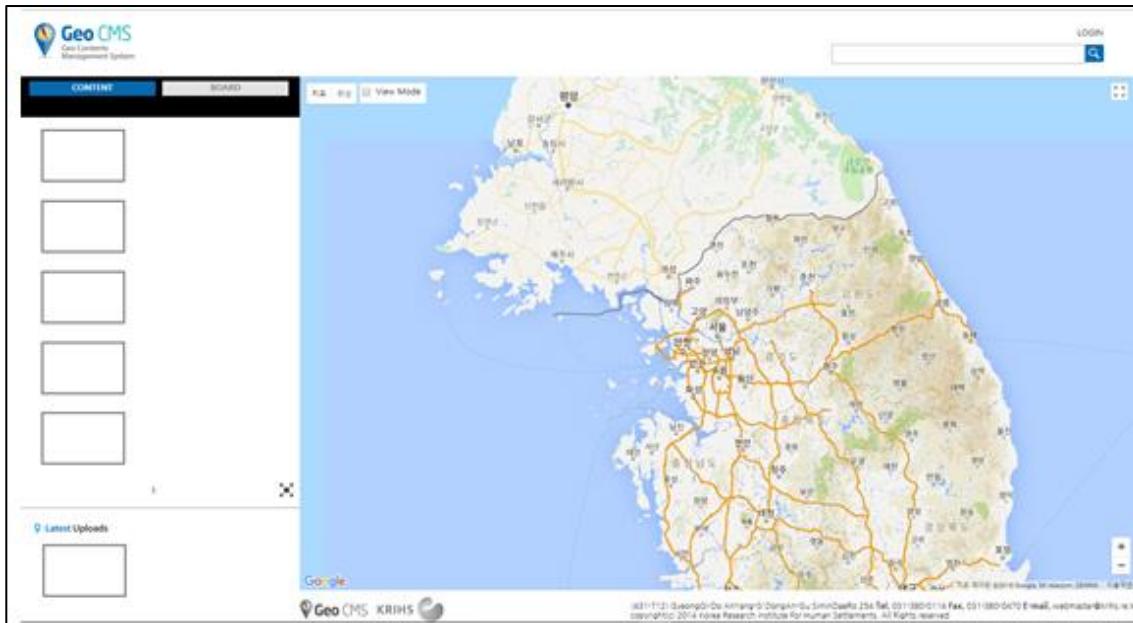
3.1. GeoCMS Manager

- When connecting to the main page, the initial screen appears.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Log in as an administrator.



– Manager icon

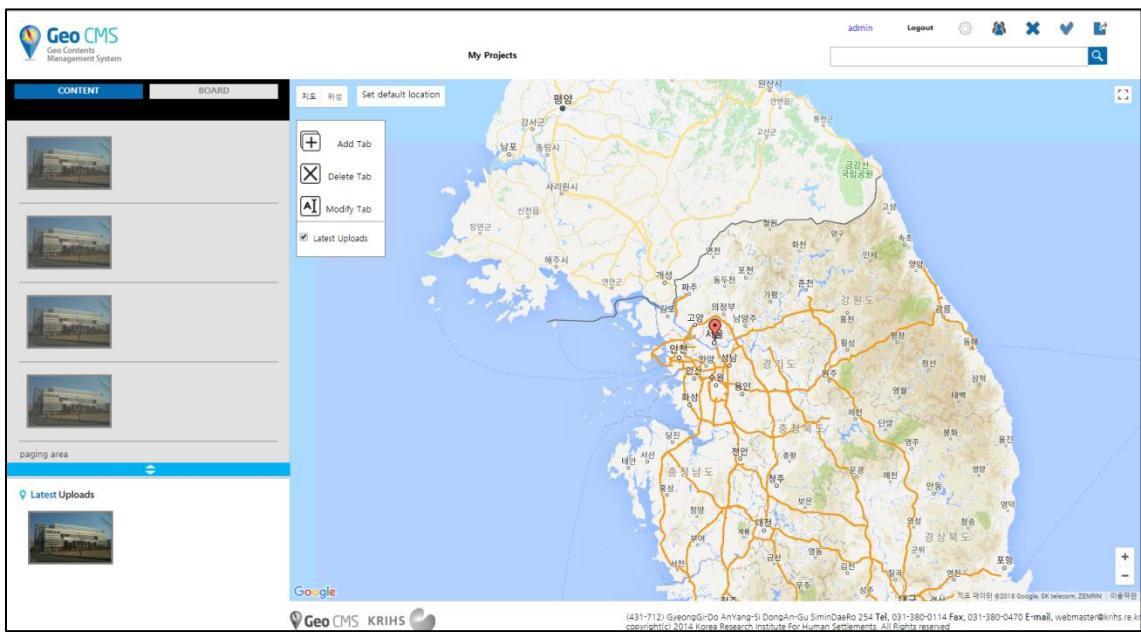


1. Settings: The administrator can set the Membership and Category tab and main screen UI
2. Membership Management: Manage the members' authority.
3. Cancel: Initialize the item that the administrator is modifying.
4. Save: Save the changes made by the administrator.
5. Exit: The administrator initializes the item that was being modified and exits the edit mode.

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.1.1. Admin edit mode screen

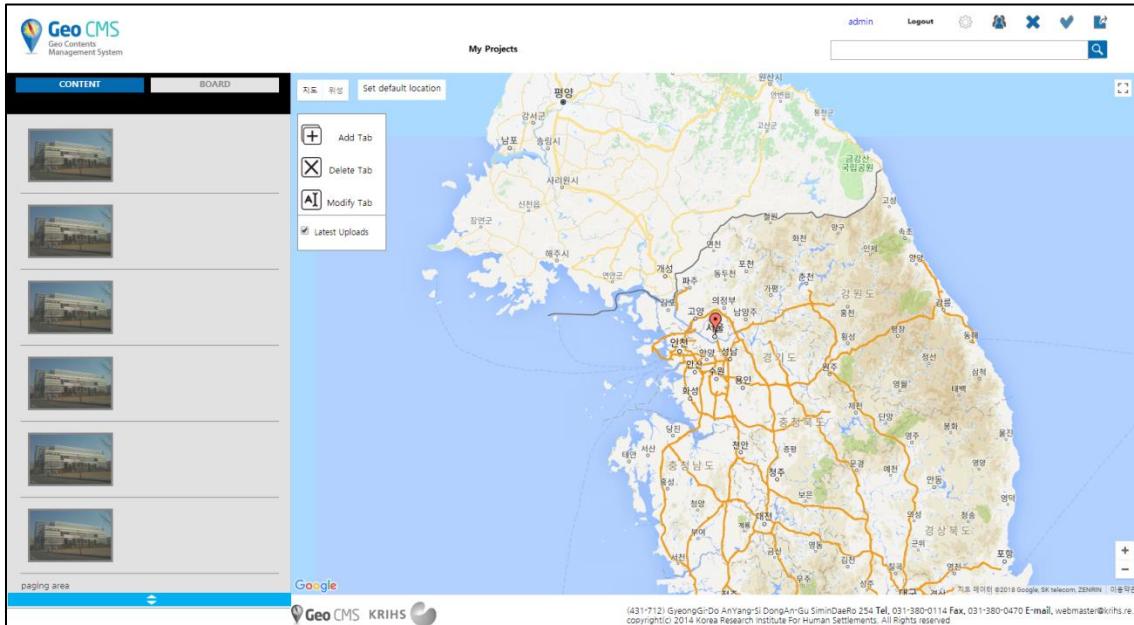
- After pressing the setting button, the administrator edit mode screen
 - Add tab: add category tab
 - Delete tab: Delete selected category tabs
 - Edit tab: Edit selected category tabs
 - Latest Uploads: When unchecked, the Latest Uploads section on the bottom left does not appear.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.1.2. Modify the content UI

- You can adjust the number of contents in the list by adjusting the blue line in the list on the left with the mouse.

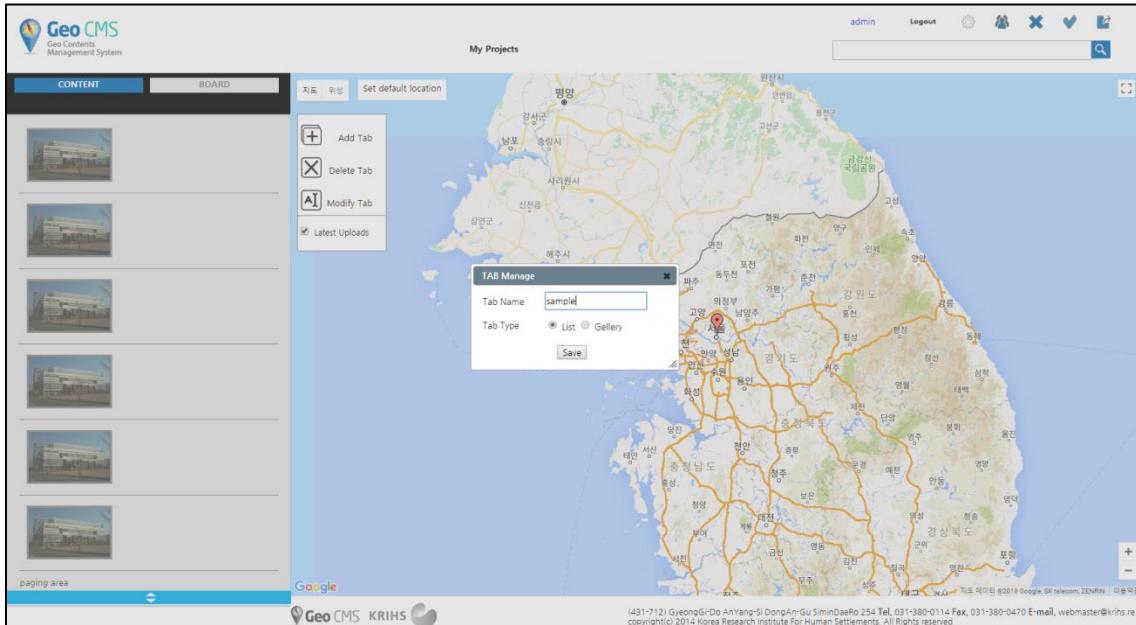


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

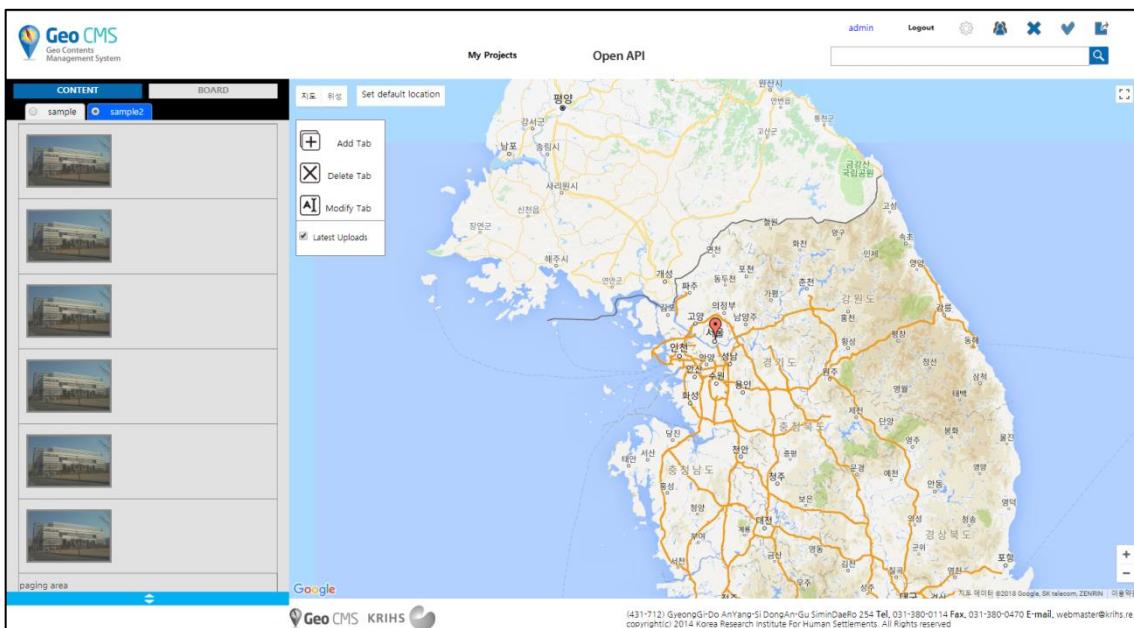
3.1.3. Add Tab

- Adding tabs

– Click 'Add Tab' button and save the tab name and type after setting.



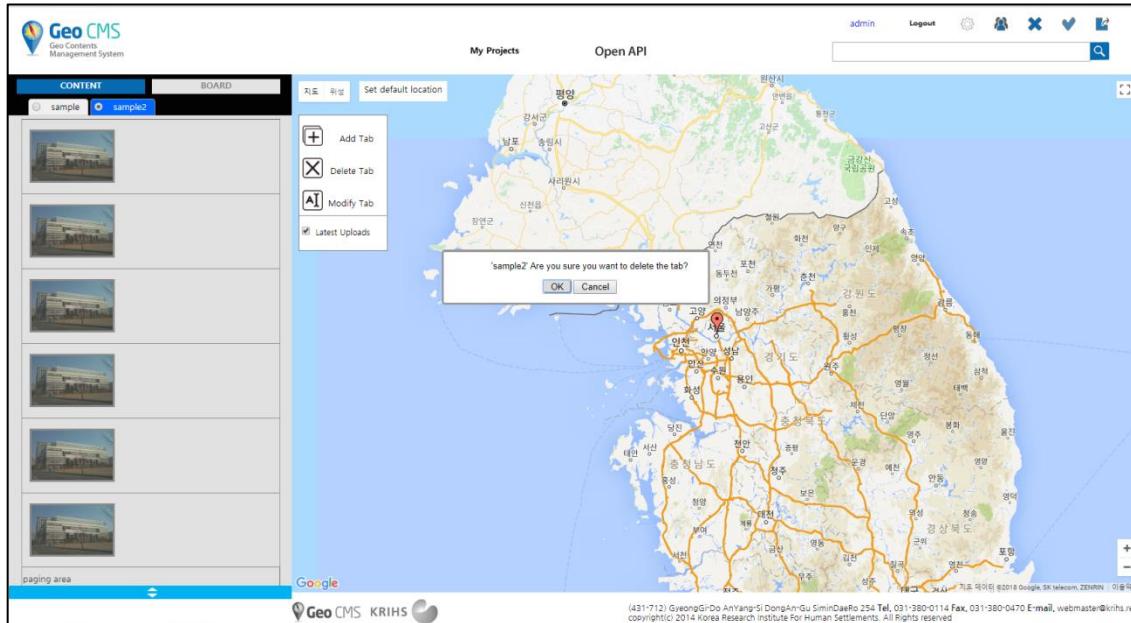
- Completed tab addition



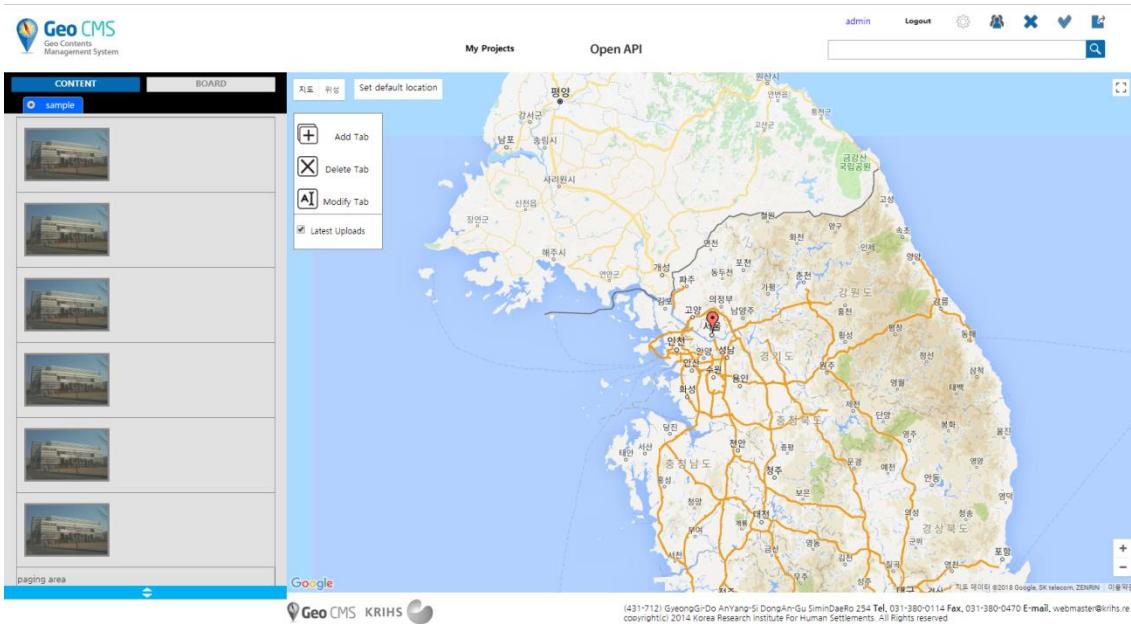
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.1.4. Delete tab

- Deleting tabs
 - Select the tab radio button to delete and click the 'Delete Tab' button and select OK.



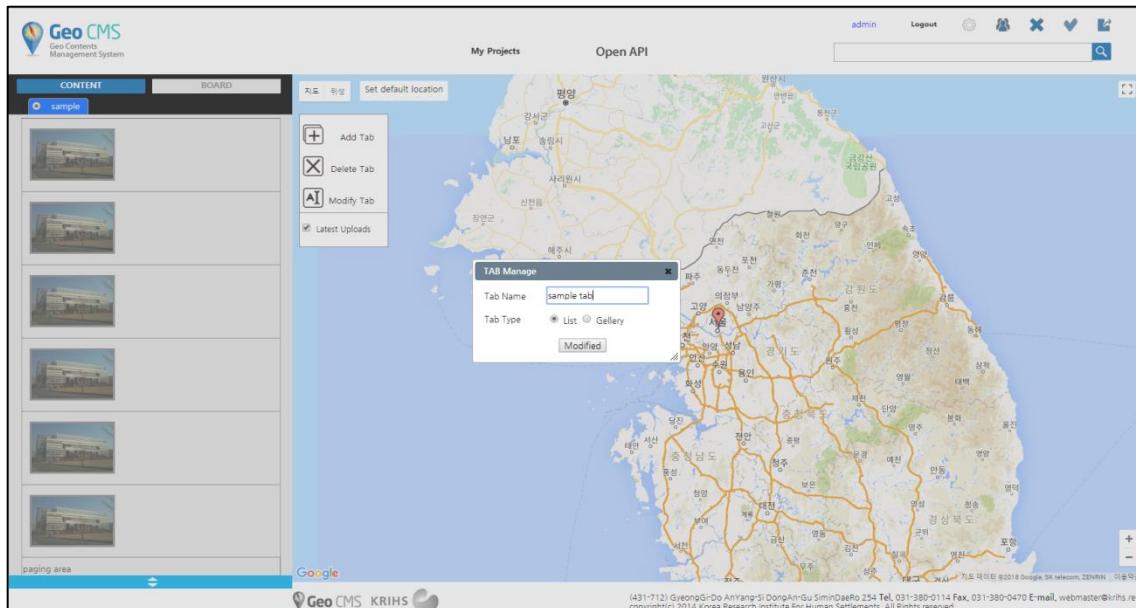
- Tab deletion complete



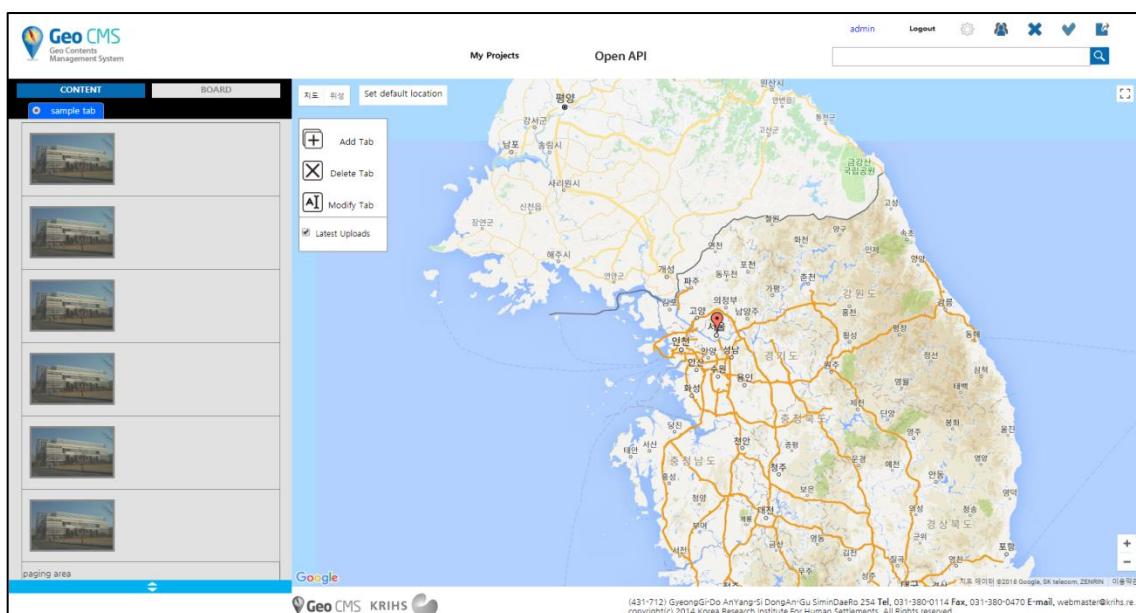
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.1.5. Edit tab

- Modifying the tab
 - After selecting the tab radio button to edit, click the 'Edit tab' button and save the tab name and type to change.



- Completed tab editing



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.1.6. User Management

- Manage users
 - Changing the user's authority (TYPE) and saving will change the authority of the user.

ID	EMAIL	Reg_Date	TYPE
kimgk88	kimgk88@gmail.com	2018-06-23	MODIFY
user2	ssong2yang@gmail.com	2018-06-22	MODIFY
parkgk88	parkgk88@gmail.com	2018-06-22	MODIFY
user1	user1@gmail.com	2018-06-22	MODIFY
admin	undefined	2018-06-22	ADMIN

Change Type : -select--

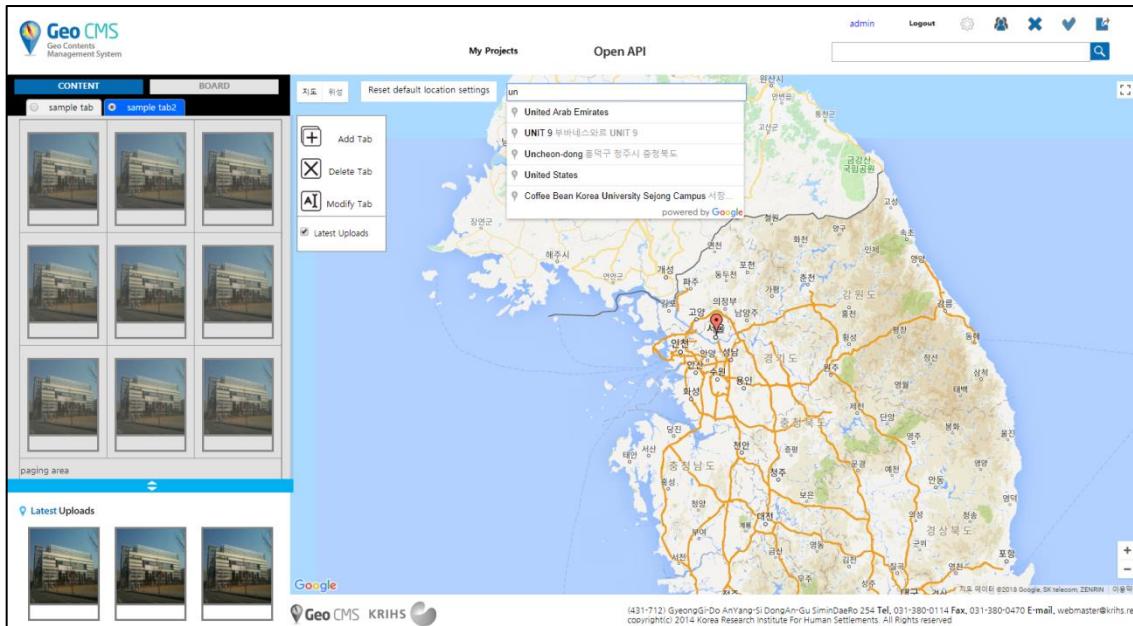
10 < 1 > save cancel

- Set initial map screen

The screenshot shows the GeoCMS interface. On the left, there is a sidebar with tabs labeled "CONTENT" and "BOARD". Under "CONTENT", there are two tabs: "sample tab" and "sample tab2", with "sample tab" currently selected. Below these tabs is a grid of thumbnail images. To the right of the sidebar is a large map of South Korea, showing major cities, roads, and geographical features. At the bottom of the map, there is copyright information: "(431-712) Gyeonggi-Do Anyang-Si Donggyo-Gu SiminDaeRo 254 Tel. 031-380-0114 Fax. 031-380-0470 E-mail. webmaster@krihs.re.kr copyright(c) 2014 Korea Research Institute For Human Settlements All Rights reserved".

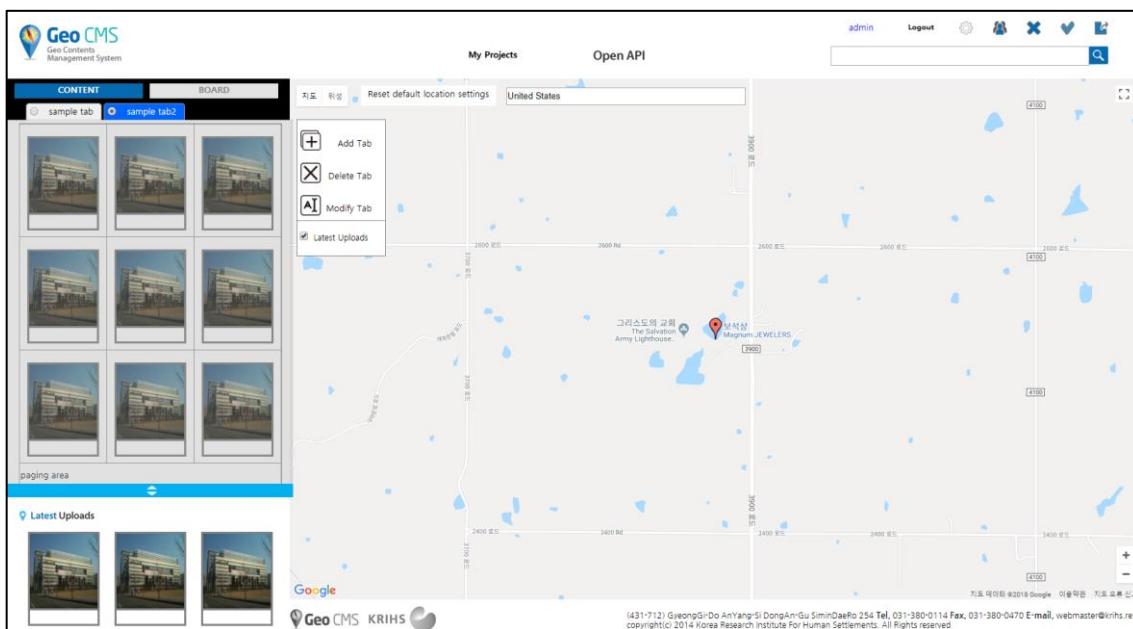
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Search for location



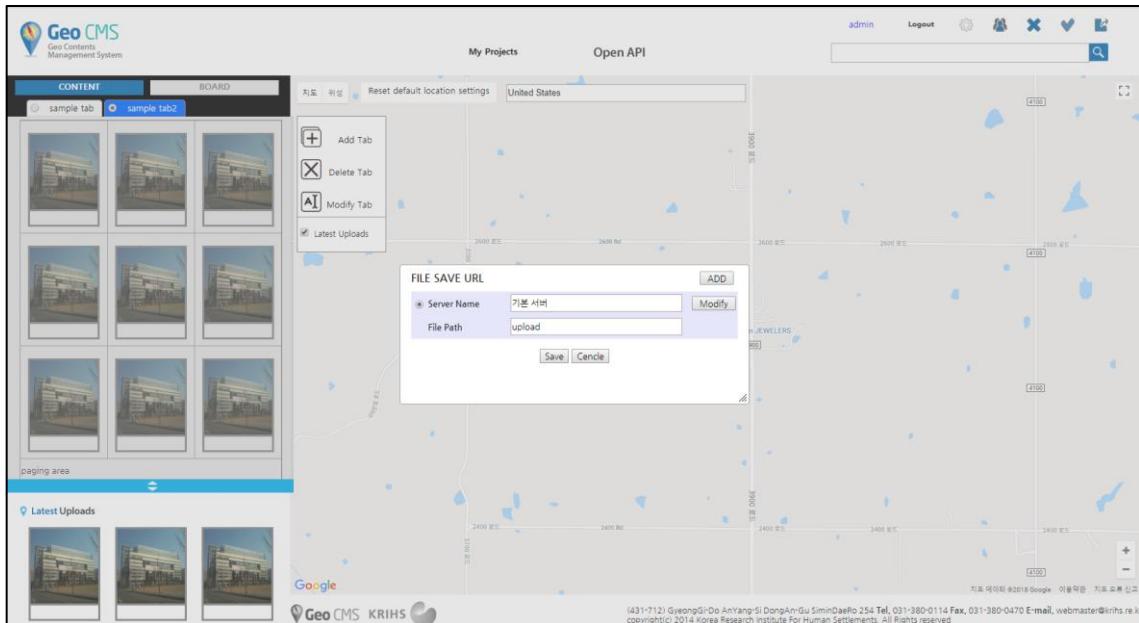
- Select location

- If you select a location in the location list, a marker is displayed at the location.
- Move marker to select position.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

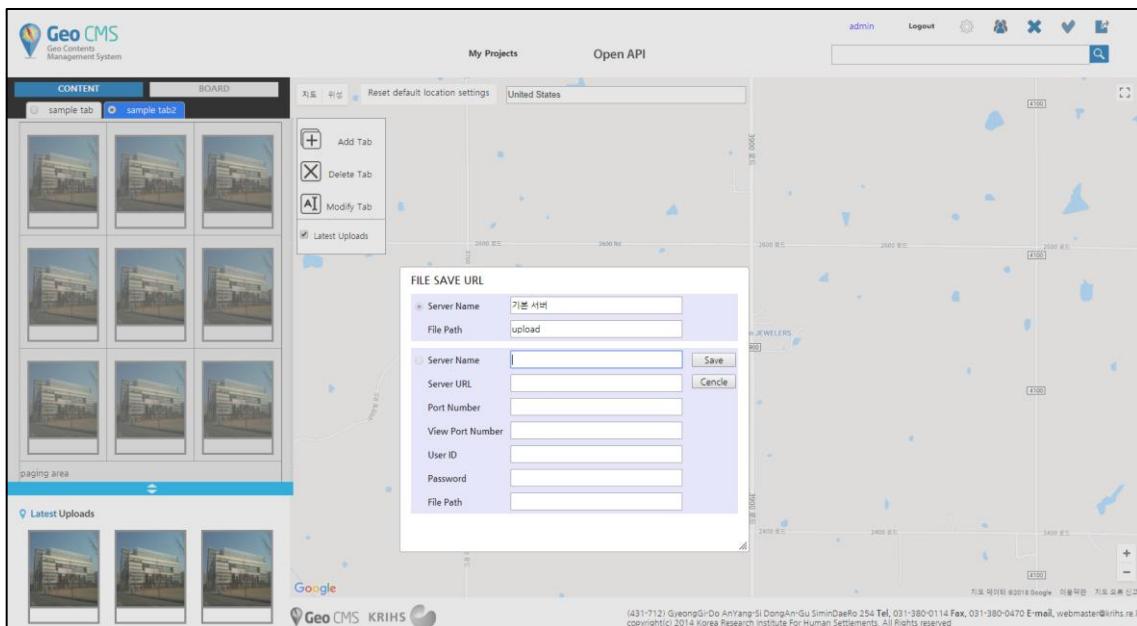
- Setting the file server address
 - Pressing the Save button displays a popup window to set the file server address.
 - The default storage address is upload, and the actual storage path is GeoCMS \src \main \webapp \upload folder.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

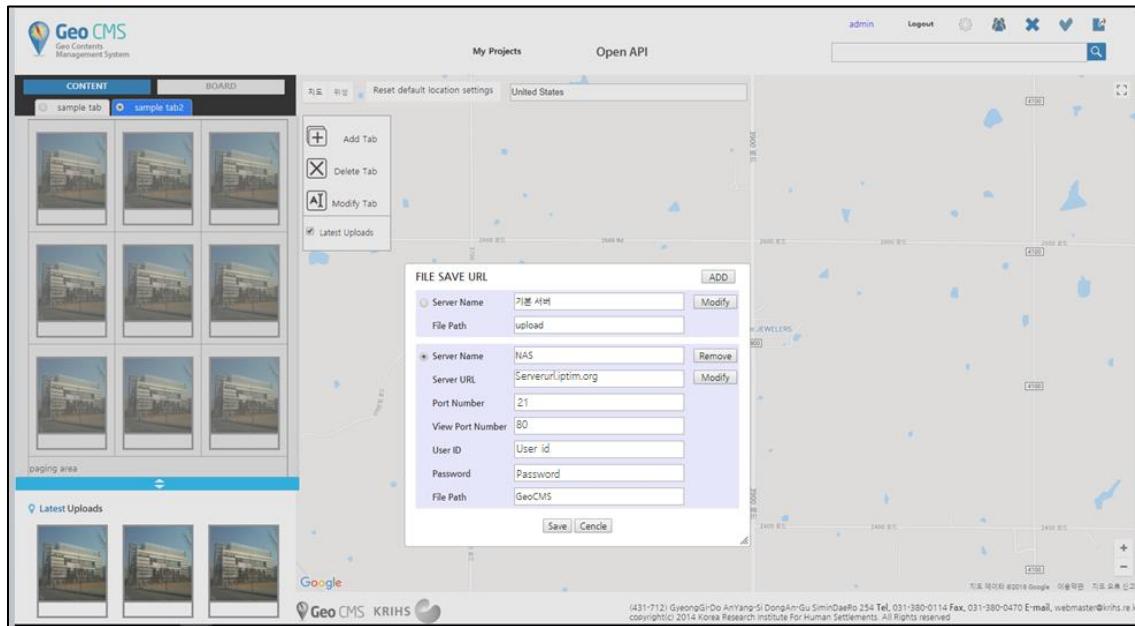
- Adding a server

- Click the Add button to add an area to save the file server address.
- Enter the server name, server address, port number, external connection port, server ID, server password, and server file path and click save button to add new server.

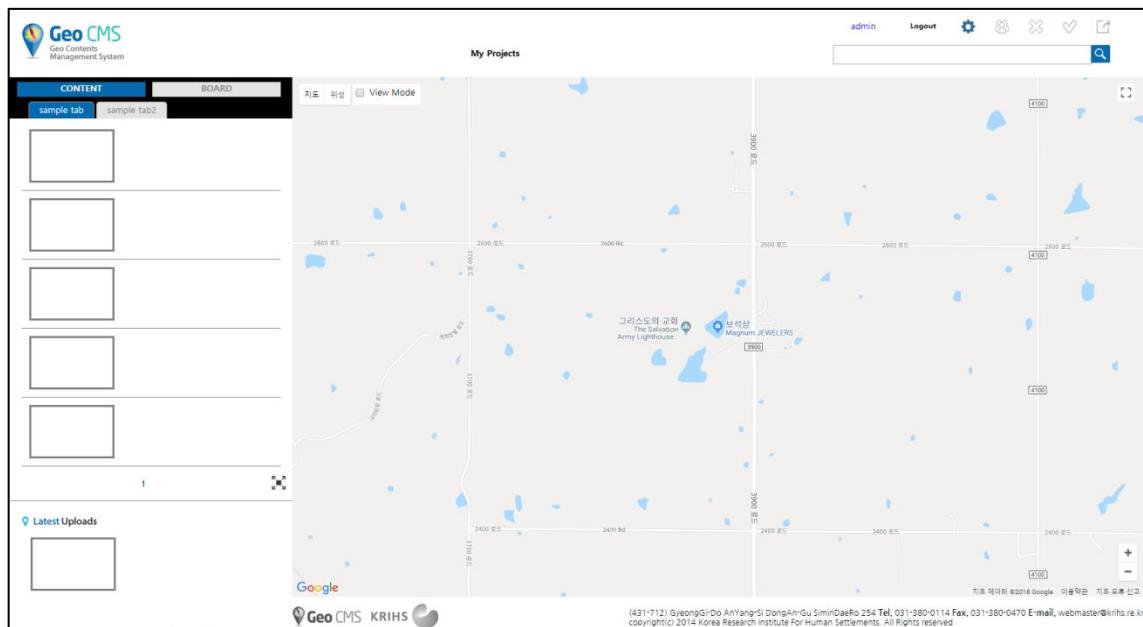


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Server settings
 - After adding the server, select the server to be set as the default server and click save button to save the administrator setting.



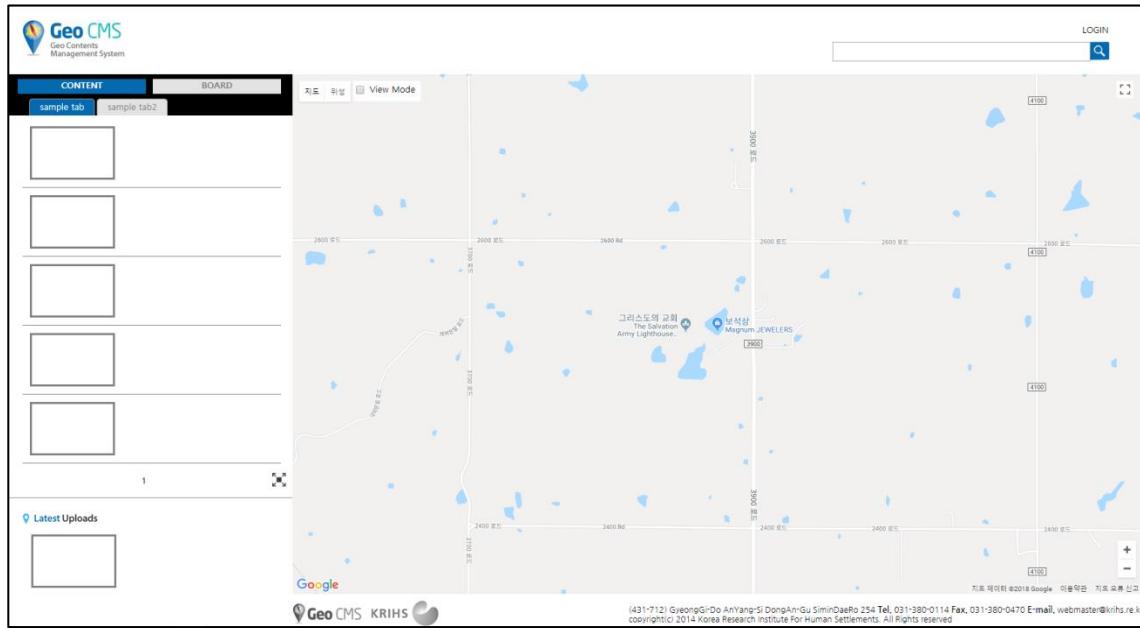
- Initial screen after changing UI



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2. GeoCMS users

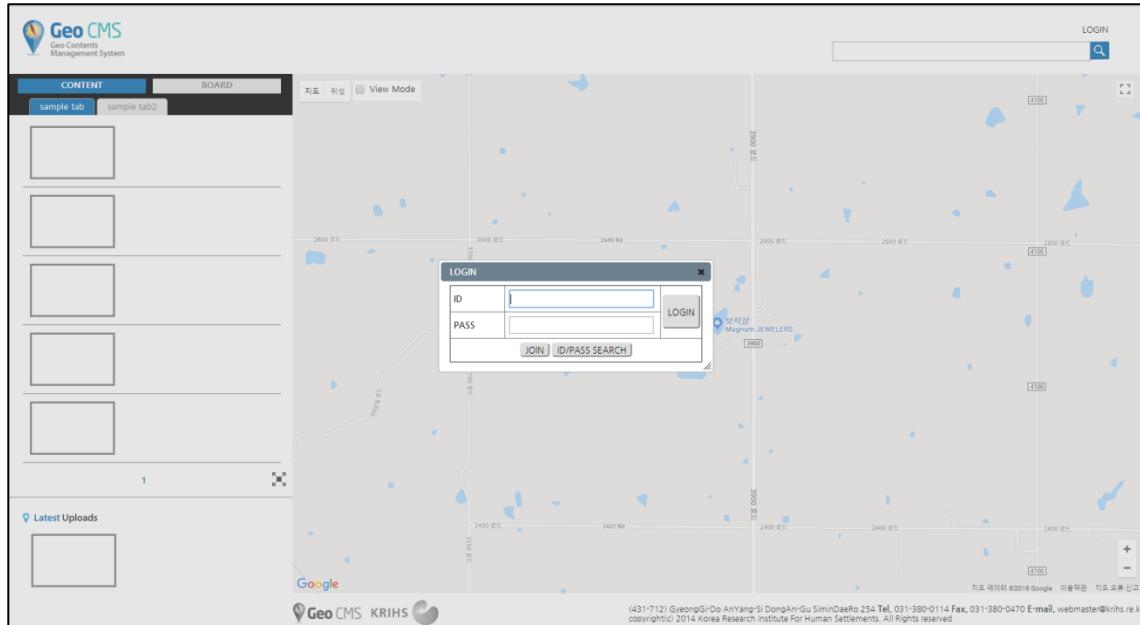
- When connecting to the main page, the initial screen appears.



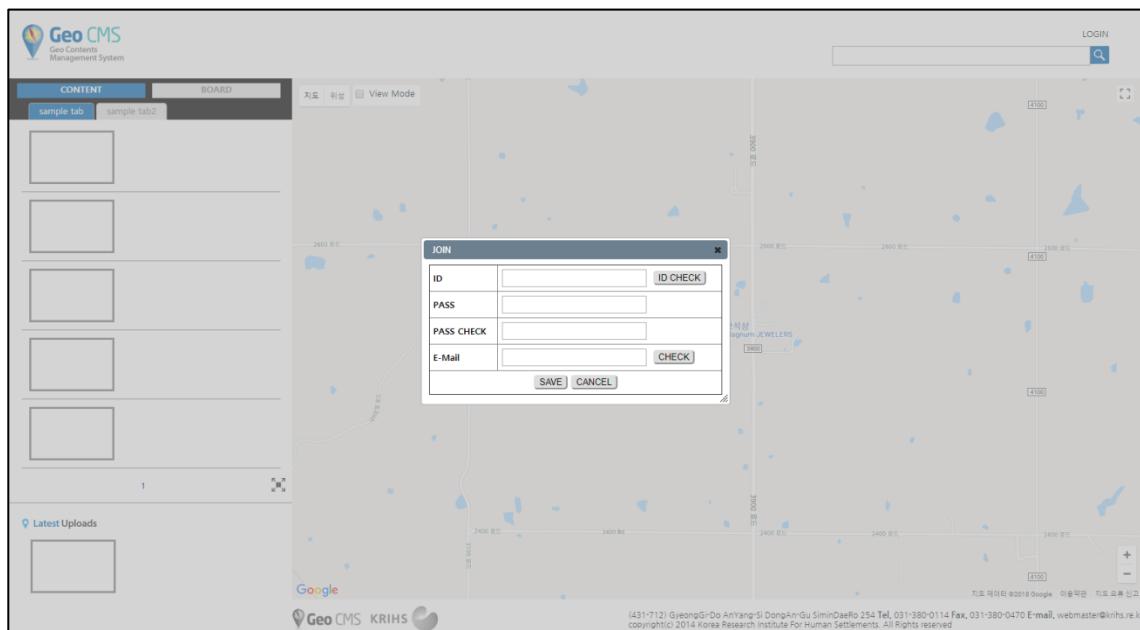
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.1. Sign Up

- To register, click the 'LOGIN' button on the top right.

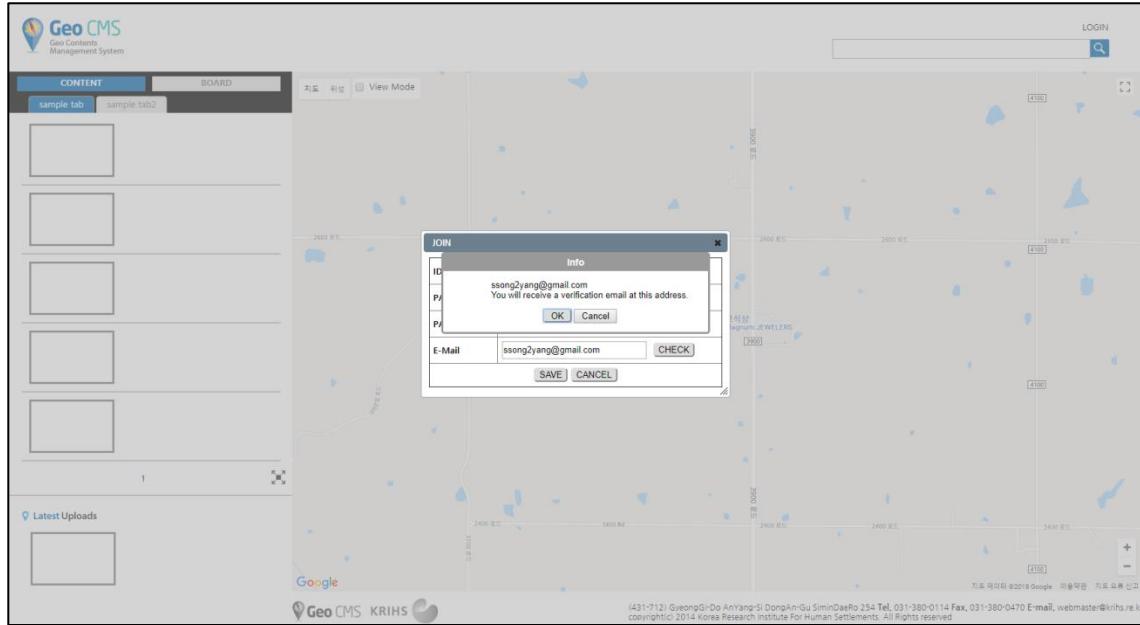


- Click the 'JOIN' button to join the membership.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- After creating ID, click 'ID CHECK' button (check same ID), and after creating PASS and E-Mail, click 'CHECK' button to receive authentication number.



- In the authentication e-mail, enter the authentication number at the bottom of e-mail, click 'CONFIRM' button, and save.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.2. Find ID / Password

- Find ID / Password

- Click the 'ID / PASS SEARCH' button on the login screen.

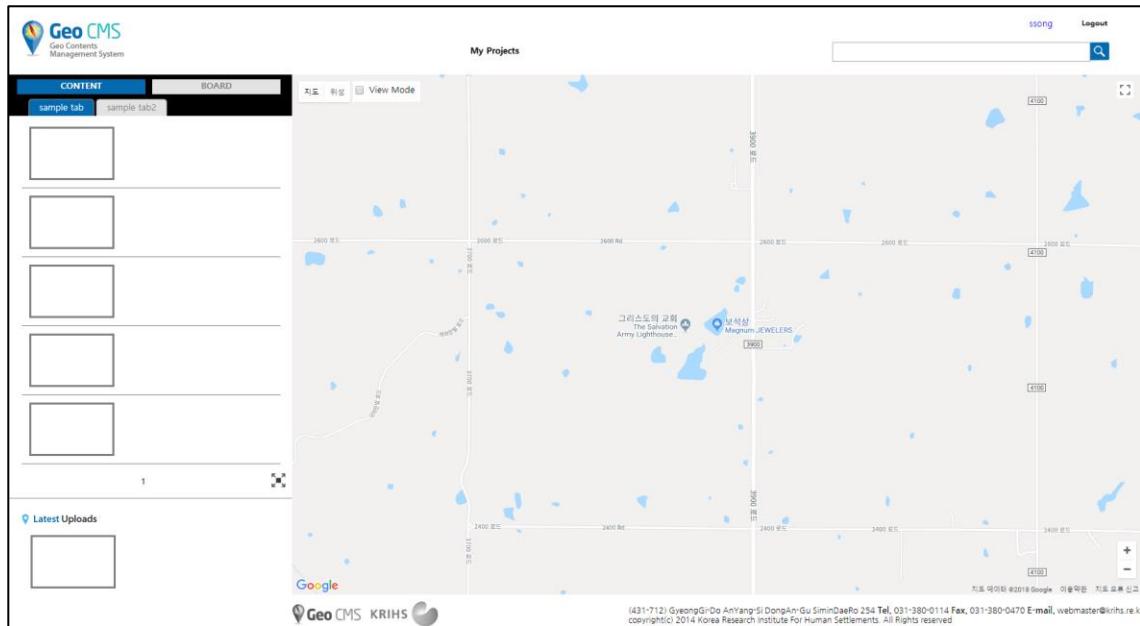
The screenshot shows a 'LOGIN' window with a dark blue header bar. Below it is a form divided into two columns. The left column contains 'ID' and 'PASS' labels with input fields. The right column contains a 'LOGIN' button. At the bottom are 'JOIN' and 'ID/PASS SEARCH' buttons. A close button is in the top right corner.

- If you press 'search ID' button, ID will be sent to the email you entered. If you press 'search PASS' button after inputting ID and email on the right side, give.

The screenshot shows a 'FIND' window with a dark blue header bar. It has two main sections: 'ID SEARCH' on the left and 'PASSWORD SEARCH' on the right. Both sections have 'E-Mail' labels and input fields. Below each input field is a 'search' button ('search ID' for the left, 'search PASS' for the right). A 'CANCEL' button is at the bottom center. A close button is in the top right corner.

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

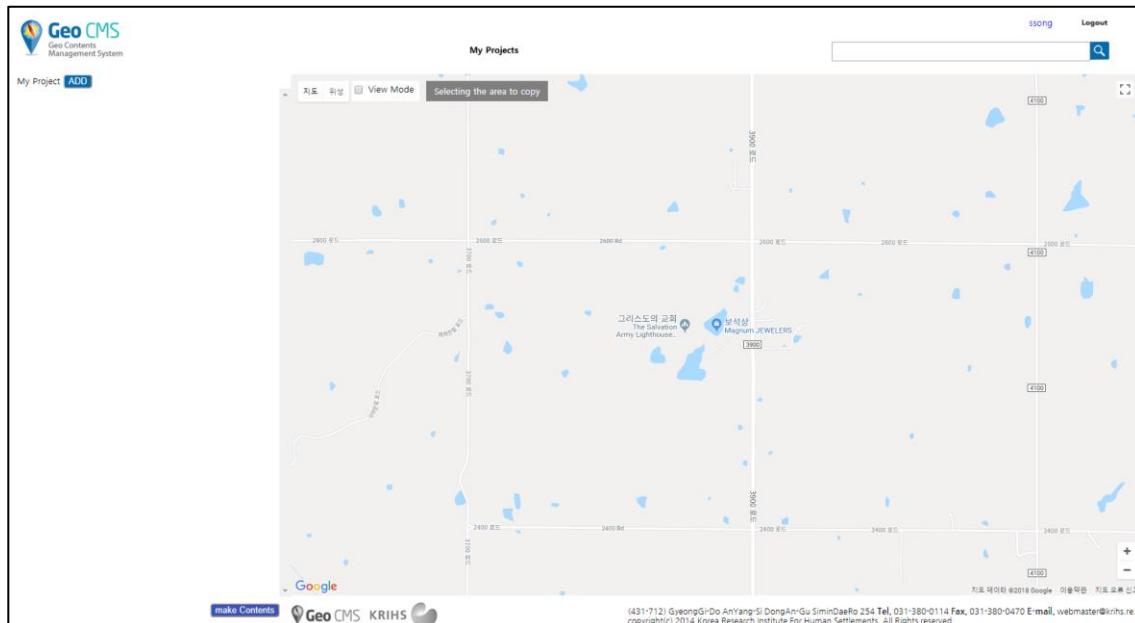
- The first screen after log-in (all public contents and contents that are revealed to oneself are shown)



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.3. Create project

- Click the My Project menu.
 - Your project list appears and coordinates registered on the right map are drawn.
 - List shared by other users is also displayed.



- Registering a new project
 - After clicking 'ADD' button, after setting tab name, project name, and disclosure settings, a new project will be created.

The screenshot shows the 'Make Project' dialog box. It has a title bar 'Make Project' with a close button 'x'. Inside, there are two input fields: 'Tab Name' with 'sample tab' and 'Project Name' with 'Safety zone'. Below these are three disclosure options: 'Nondisclosure' (selected), 'Full disclosure', and 'Selective disclosure'. At the bottom are 'Save' and 'Cancel' buttons.

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- When a specific person is selected, a window will be displayed to select whether the user is to be released and whether he / she has permission to edit.

ID : search remove

<input type="checkbox"/>	ID	<input type="checkbox"/> Edit authority

ok cancel

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Add it after searching for the user to be published.

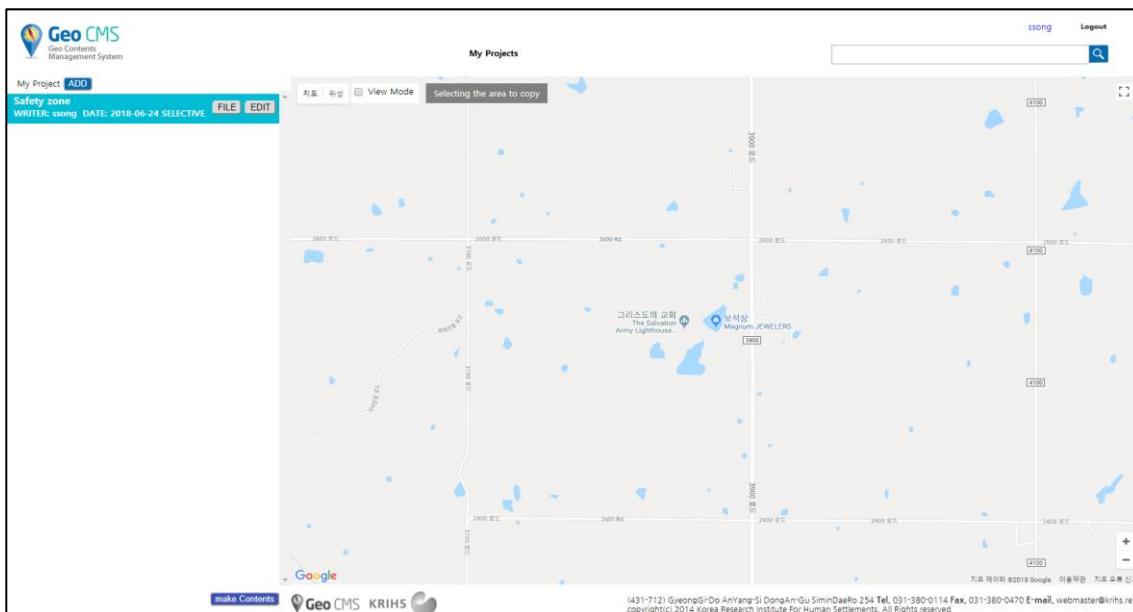


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- After granting the right of editing to a specific user, it is saved. (The shared user can view the contents of the project created by the user, and the sharing user with editing authority can modify the authored object in the corresponding content.)



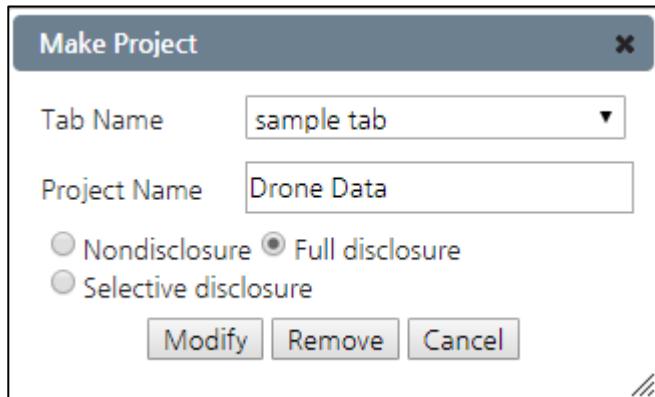
- Project creation completed
 - After creating the project, it appears as a list on the left screen and you can upload contents.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

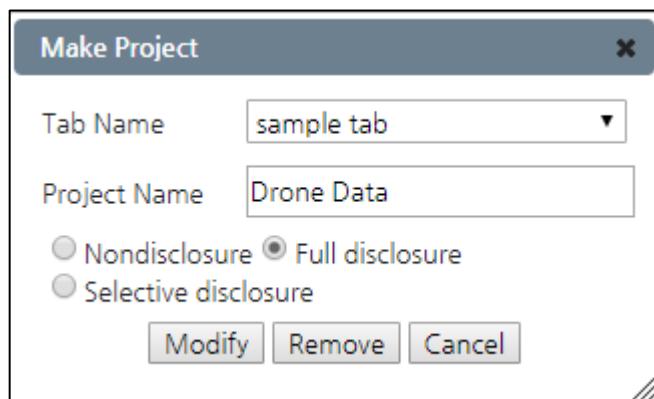
3.2.4. Modify project

- You can modify the tab name, project name and visibility setting when you click 'EDIT' button of project.



3.2.5. Delete project

- When you click 'EDIT' button of the project, if there is no image and video data belonging to the project, 'Remove' button is displayed.

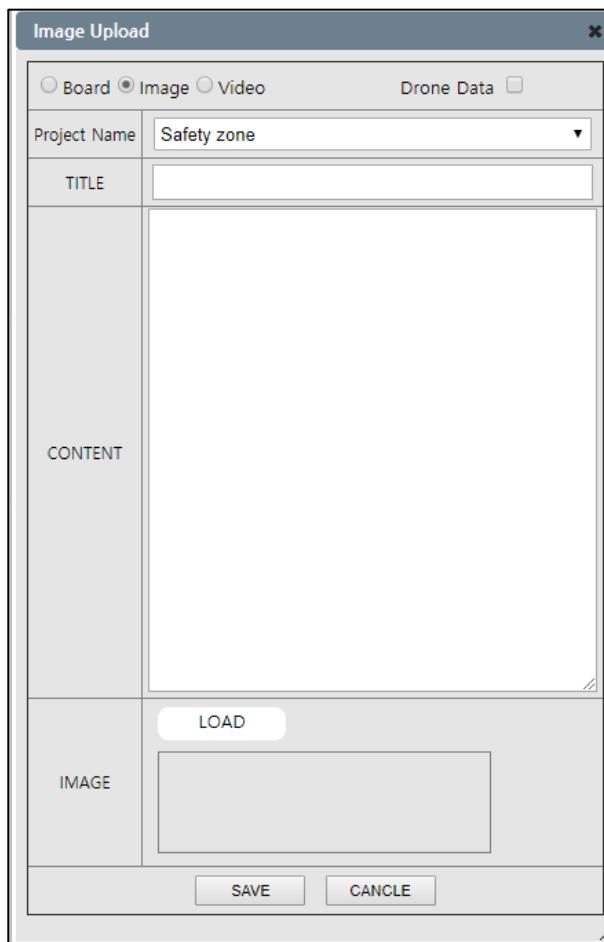


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.6. Upload image

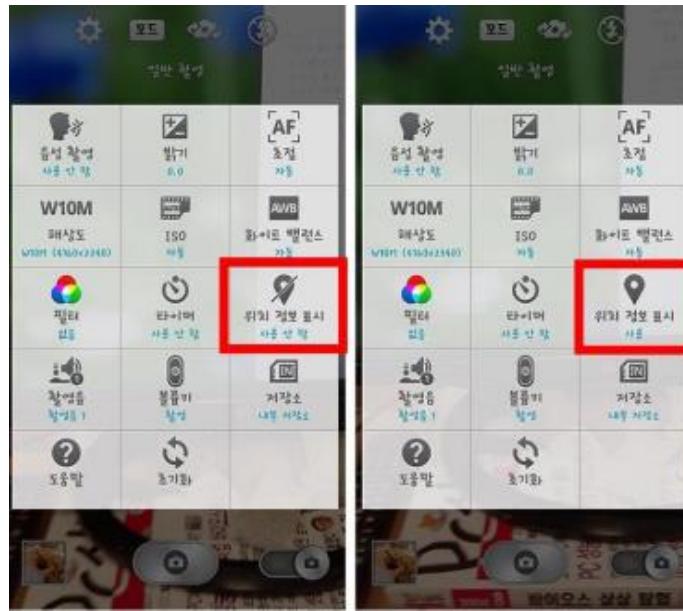
- Uploading images

- Click the 'make Contents' button to create the content and upload the photos.
(When drone data is checked, it is stored as drone data type, and radius is drawn in circular shape instead of fan shape of normal picture.)
- If there is no EXIF information in the photo, the location will not be saved. You can upload location information to .jpgw, .gifw, .pngw, .bmpw, .jgw, .gfw, .pgw, Do. (Matches the file name. See Uploading Coordinate File in 3.2.16.)



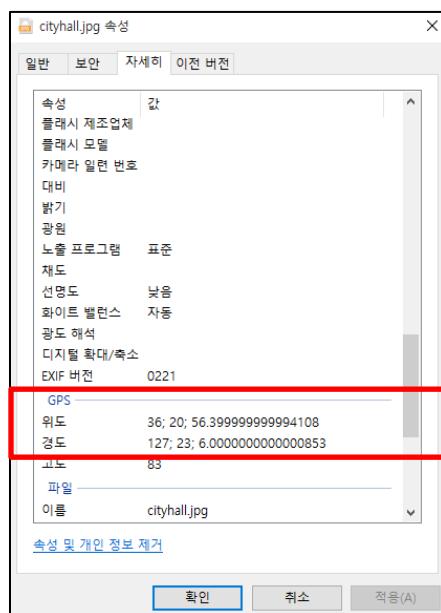
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- The location information is displayed only if the photo contains gps information.
- Before you take a picture, you need to set the location information in the settings of your smartphone to enable the location information. And when you use the camera app, you can also use the GPS function of the camera app.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- When you view the information of the photo taken after setting the location information display, gps information is included with EXIF information.
- Exif (EXchangable Image File format) is an image file format used in digital cameras. This data is used in JPEG, TIFF 6.0, RIFF, and WAV file formats and adds metadata that includes information about the photo. Exif is not supported for JPEG 2000, PNG or GIF files.
- Exif metadata provides information such as camera manufacturer, camera model, rotation direction, date and time, color space, focal length, flash, ISO speed, aperture, shutter speed, gps.



- pgw file example
- The fifth line has longitude coordinates, and the sixth line has latitude coordinates.

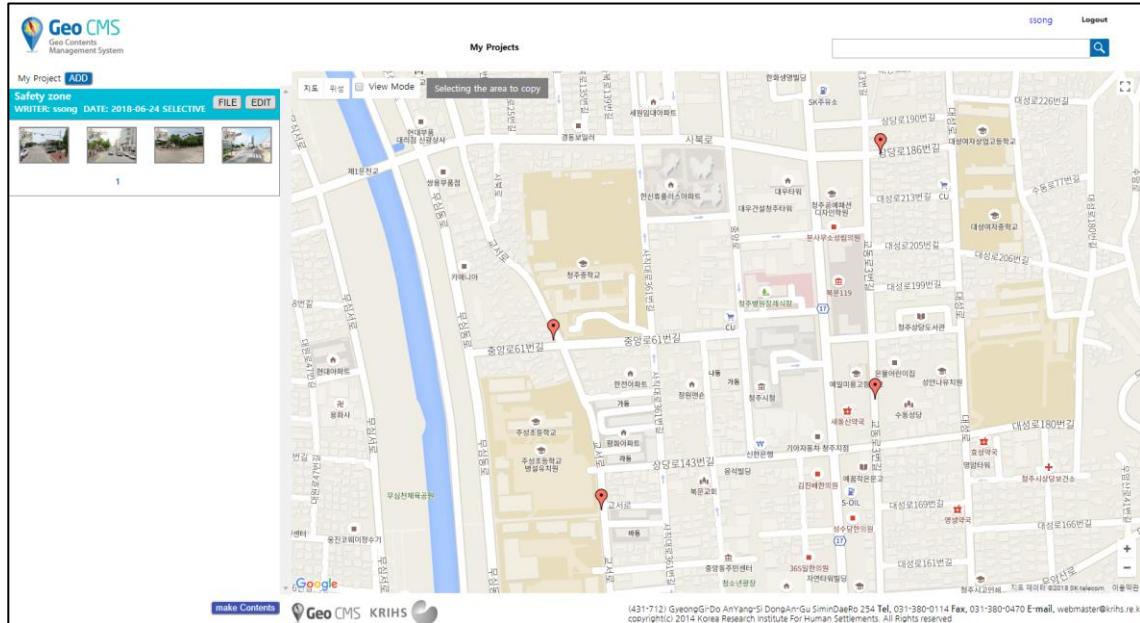
```

0.0000033990993301096
0
0
-0.0000026949458523586
17.86015502501203400243
40.43544545377322663171

```

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- After uploading a photo, a list of photos will appear in the project list on the left, and the location of the photos in the active project will be displayed on the map on the right.

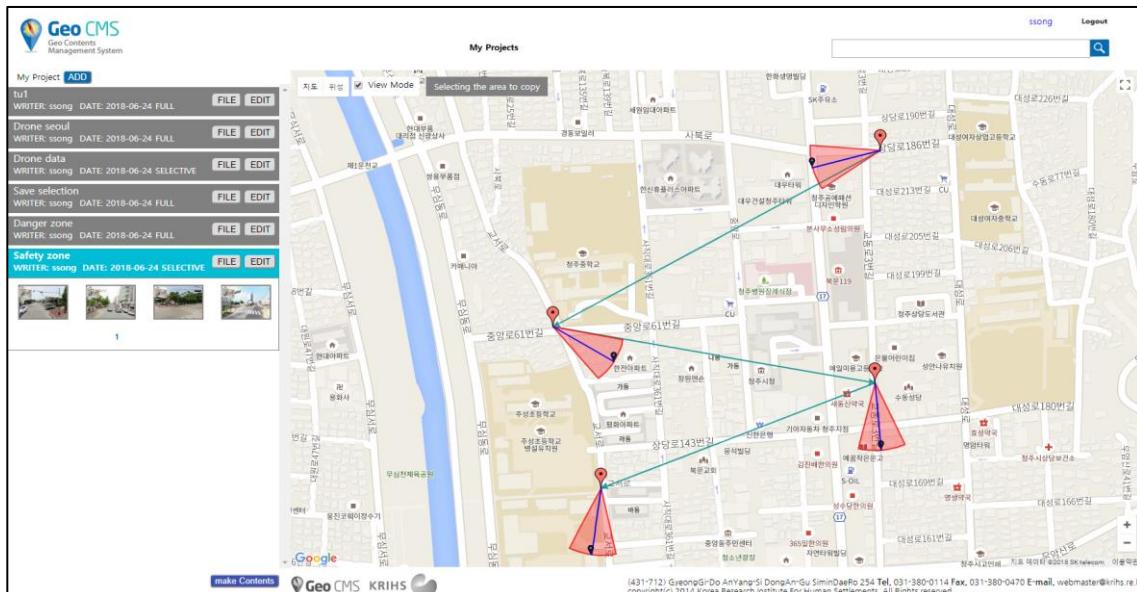


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.7. View Mode

- When you check the view mode on the right map, the route is drawn in the order of seqNum of the corresponding project on the map, and the radius is displayed together.

- General data



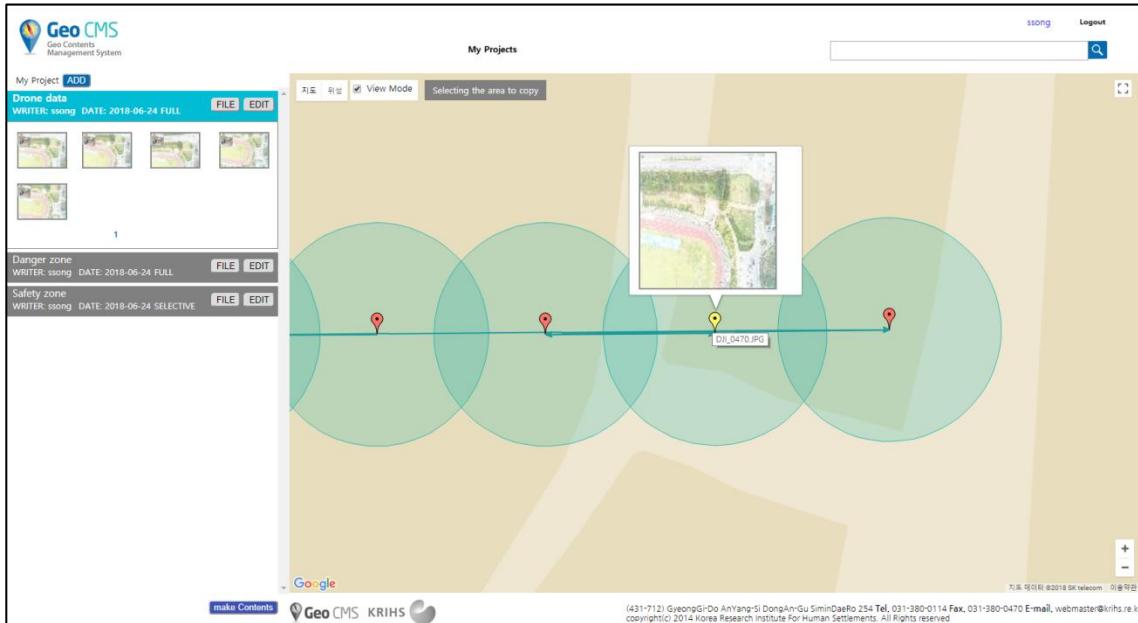
- Drone data



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

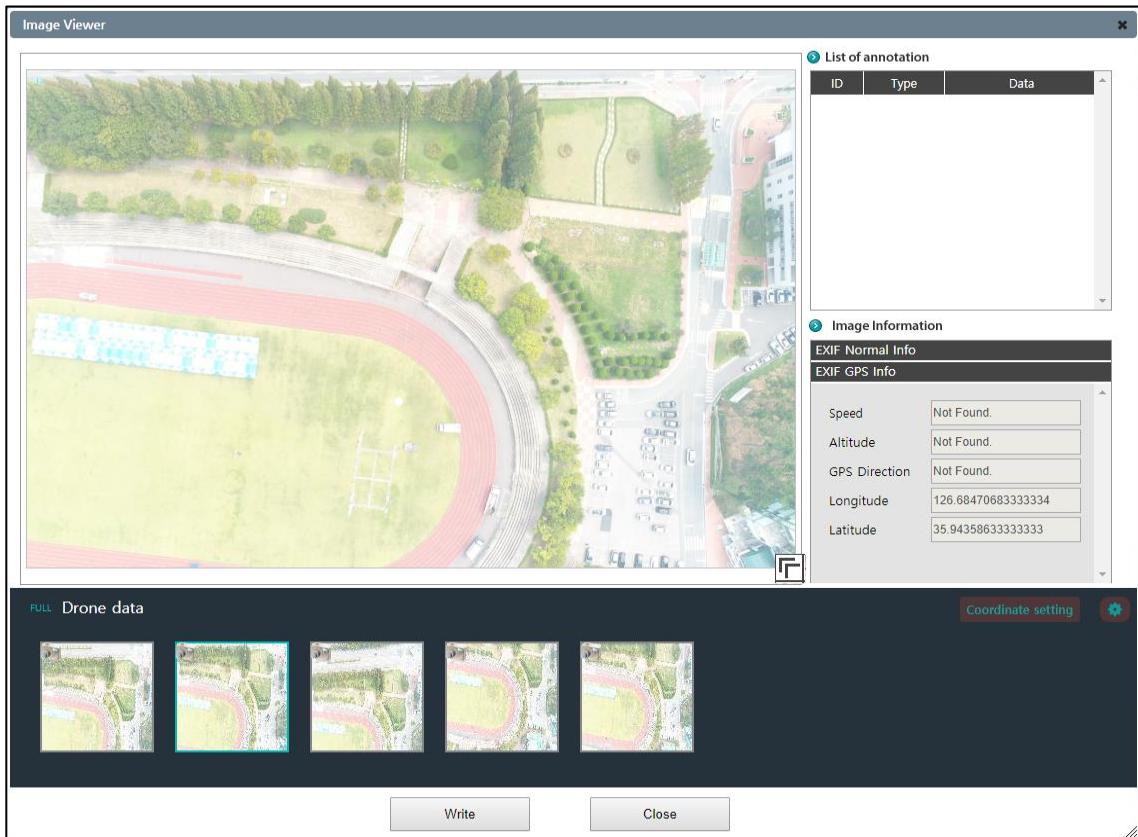
3.2.8. Image viewer

- When you click on the picture on the right side, the position of the picture is displayed on the right side with a yellow marker.



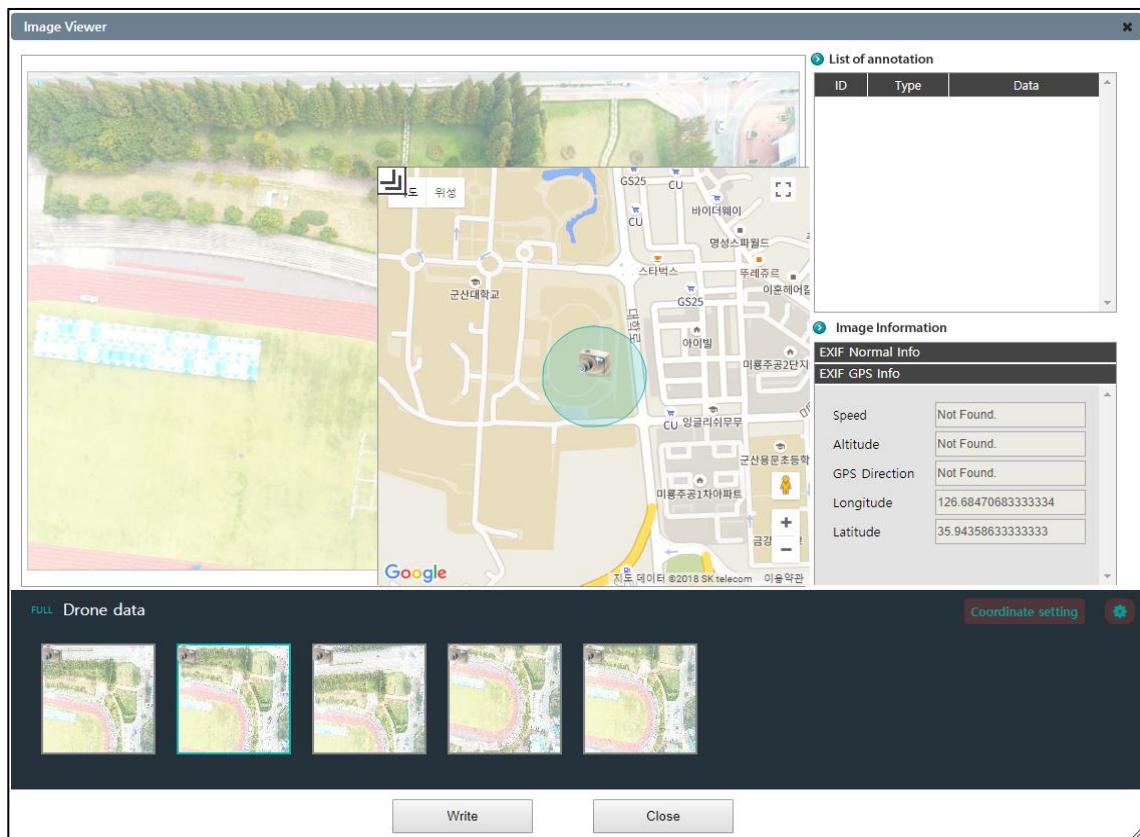
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- When clicking the Marker, the Image Viewer window will appear.
- – The selected image is set as the main image and the corresponding image in the bottom image and video list is displayed as a green frame.



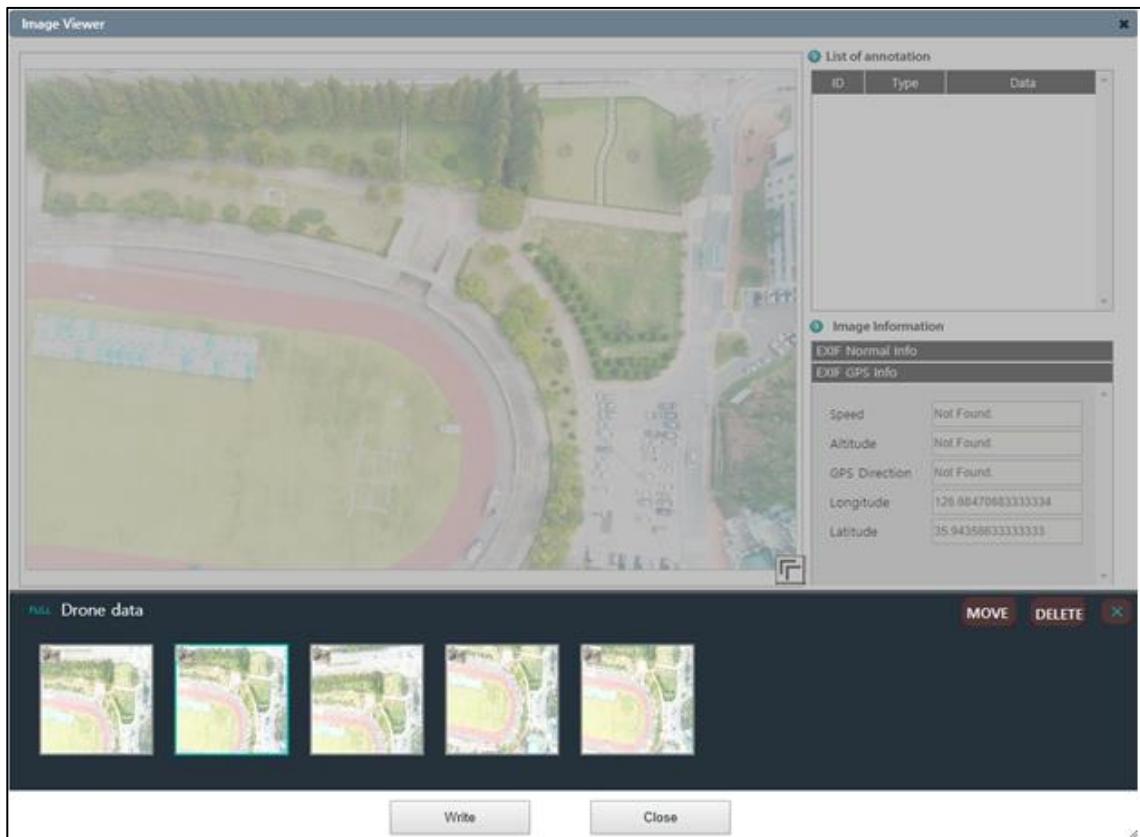
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- In the Image Viewer window, the list of annotation, EXIF information (Image Information) and Map information and radius of the corresponding photo, and the image and video list of the project are displayed together.
 - You can see the map by using the arrow buttons at the bottom right of the main image.



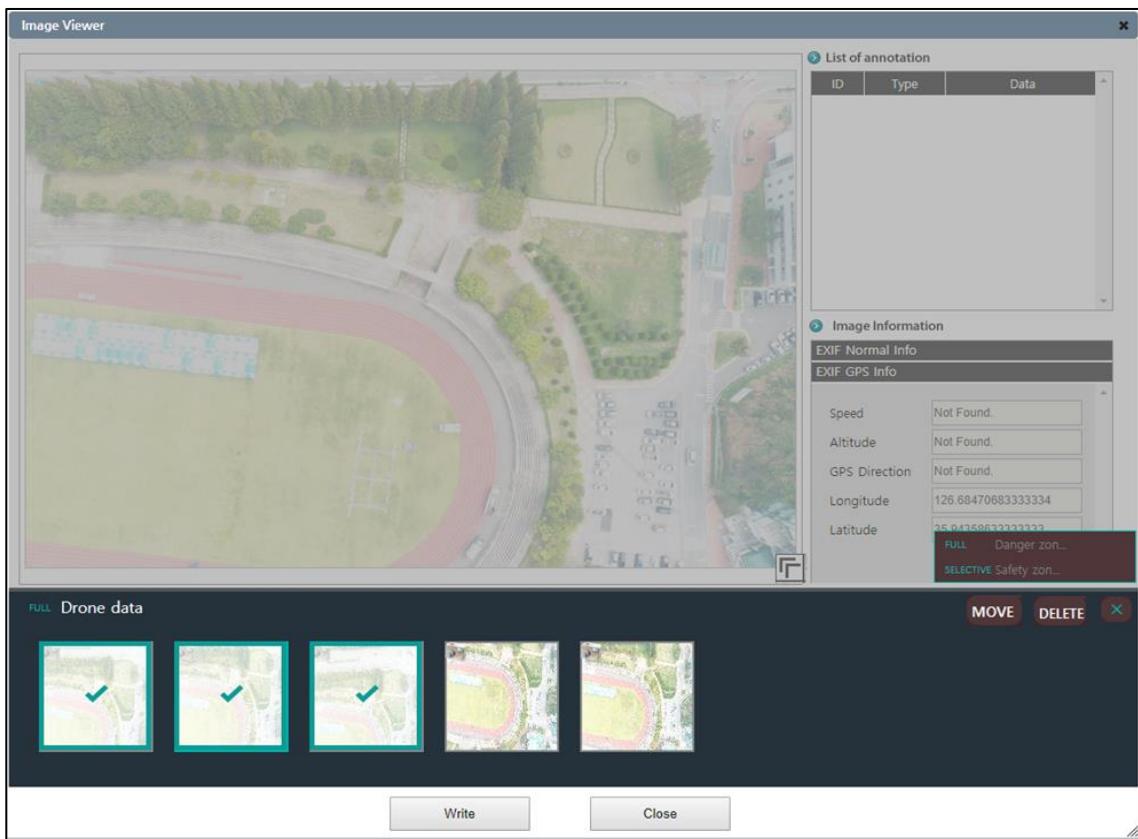
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- When clicking the setup button on the bottom right, you can select multiple images and movies and move or delete them to another project.
 -  (Settings button) Click screen



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

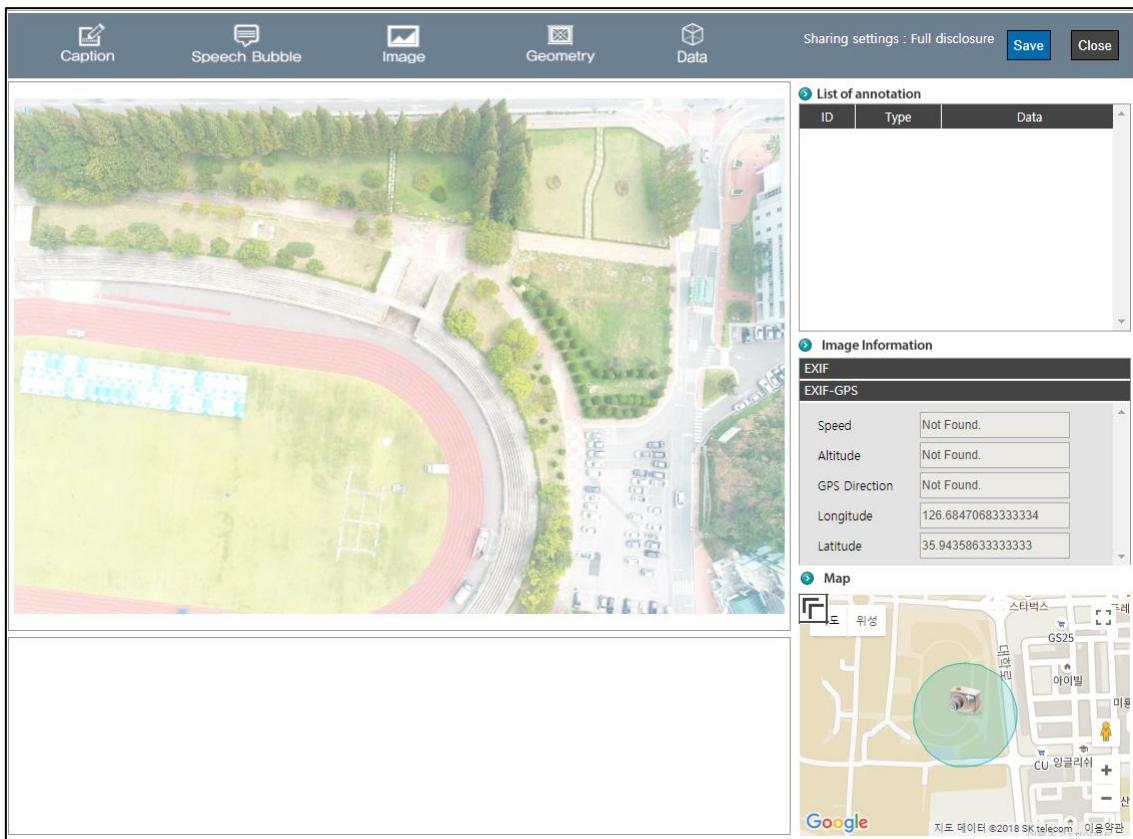
- If you click 'Go' button after selecting images and videos, a list of projects that can be moved will appear, and the selected images and movies will be moved to the corresponding project. (When moving the main image, the main image is changed to the first data of the remaining project list. If there is no data in the project, the notification window is opened and the window is closed.)



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

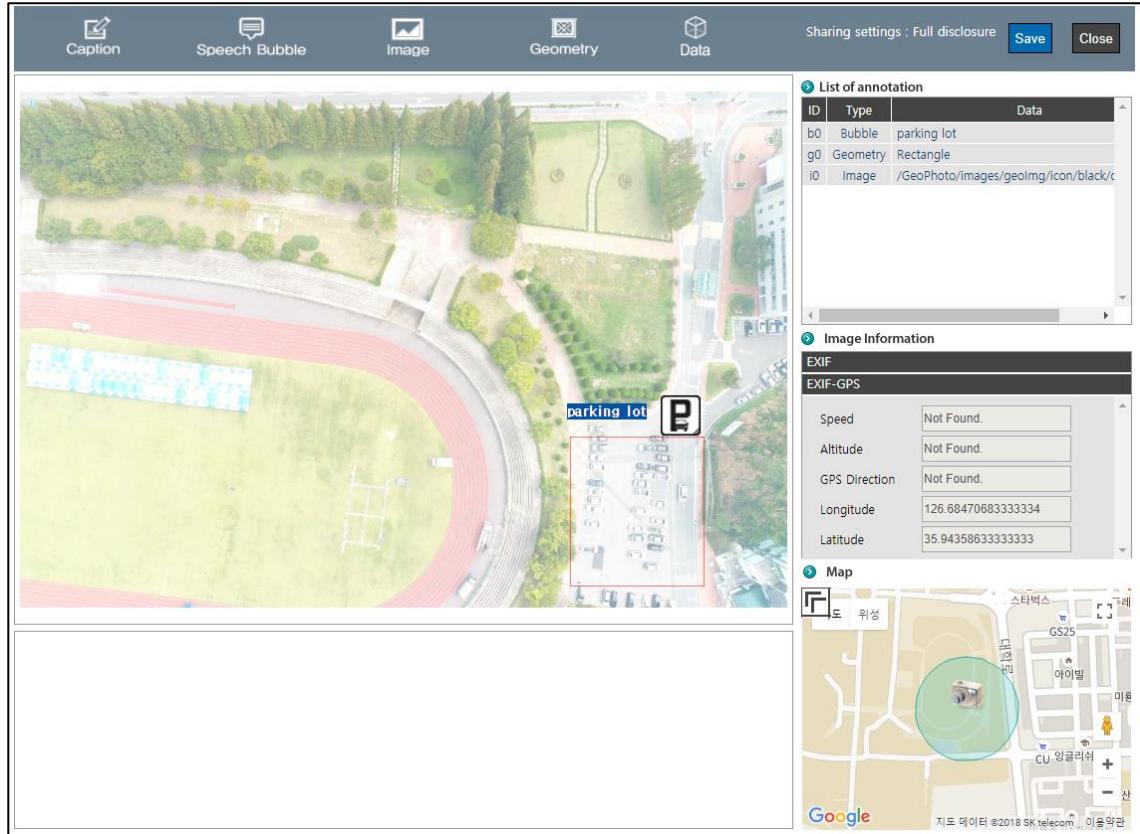
3.2.9. Image editor

- Click the 'Write' button at the bottom to display a window where you can edit the object in the picture.
- Zone settings and captioning, speech bubbles, and authoring information represented by icons
- – Top menu: Caption / speech bubble / icon / area setting / data information
- – Expressions in captions and speech bubbles
- – Expression of authoring information using icon
- – Free area representation using area setting options
- – Check the list of objects added to the List of annotation on the right side



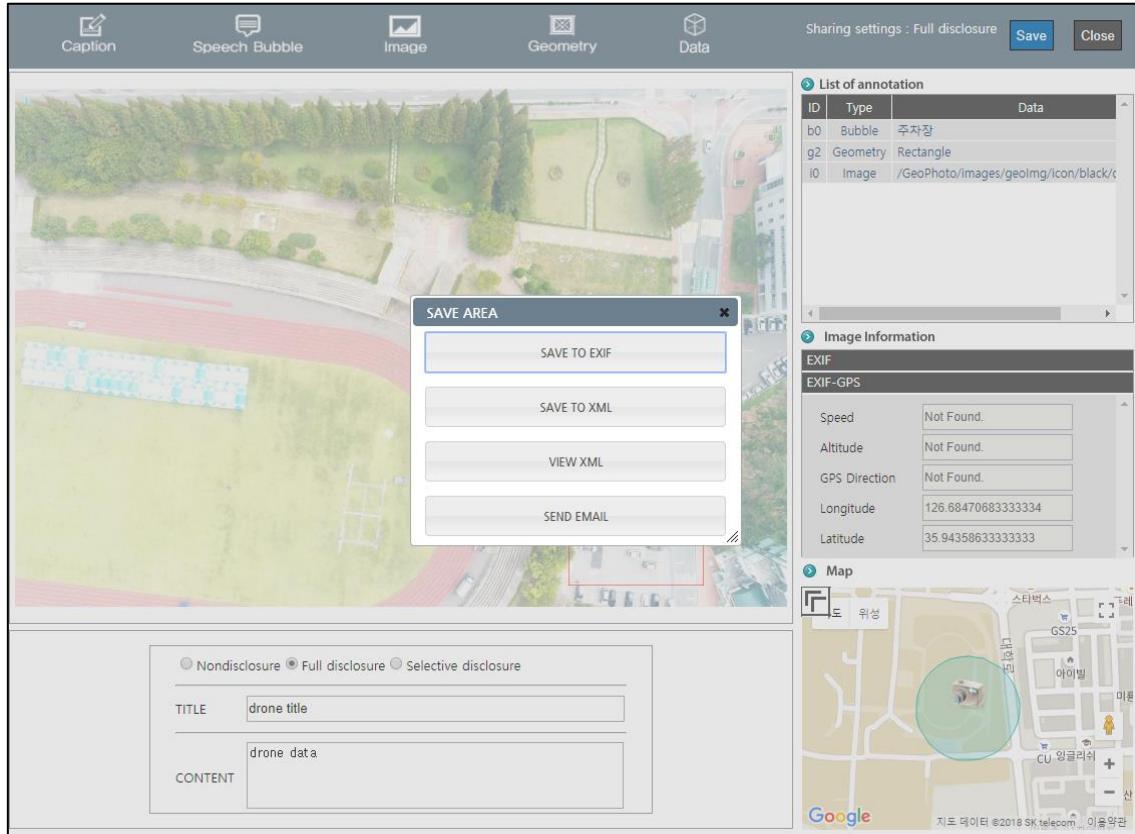
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Apply various icons to change additional presentation and data and sharing settings



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Select the save method after authoring
 - Save to EXIF
 - Save to XML
 - Content sharing via e-mail



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Check XML file

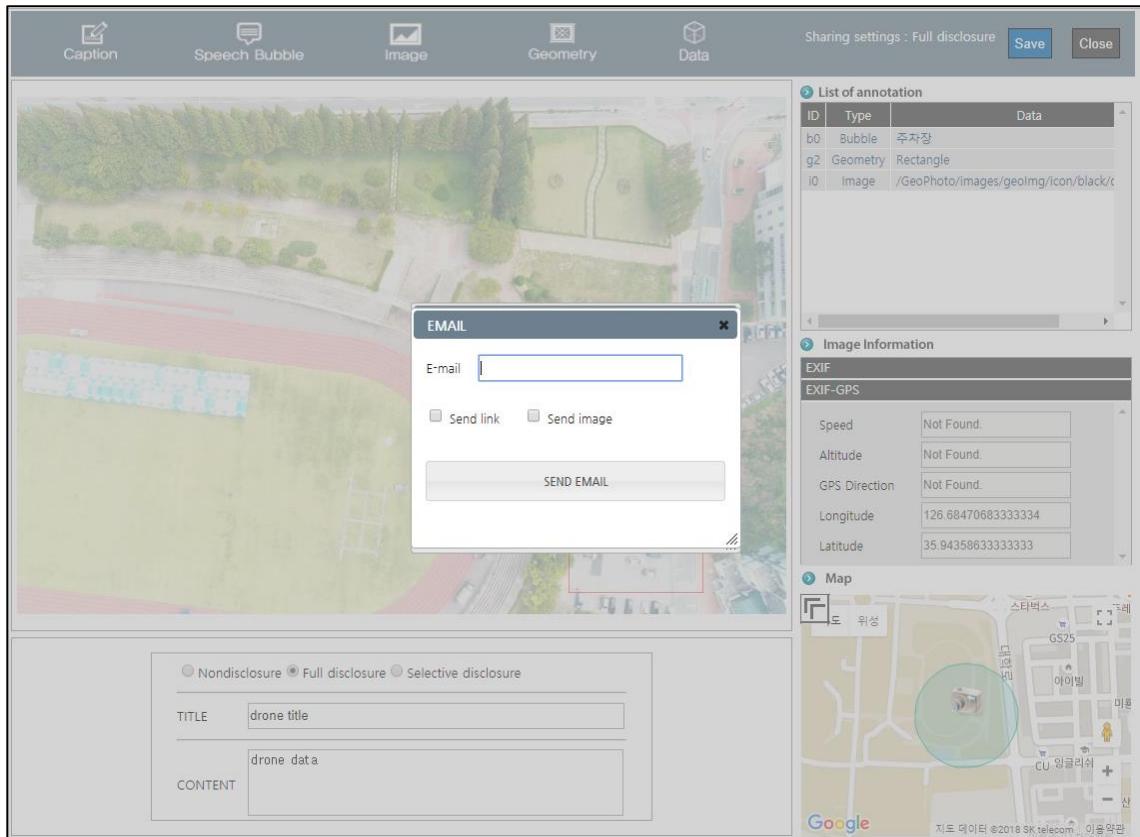
```

<?xml version="1.0" encoding="utf-8"?>
<GeoCMS>
<obj>
<id>b</id>
<top>311</top>
<left>553</left>
<href>false</href>
<underline>false</underline>
<italic>false</italic>
<bold>true</bold>
<fontsize>H3</fontsize>
<fontcolor>#ffffff</fontcolor>
<backgroundcolor>#0054a5</backgroundcolor>
<text>주자장</text>
</obj>
<obj>
<id>g</id>
<top>359</top>
<left>557</left>
<xstr>557_692</xstr>
<ystr>344_493</ystr>
<linecolor>#f00</linecolor>
<backgroundcolor>#FF0000</backgroundcolor>
<type>rect</type>
</obj>
<obj>
<id>i</id>
<top>318</top>
<left>648</left>
<width>40px</width>
<height>40px</height>
<src>/GeoPhoto/images/geolmg/icon/black/d100.png</src>
</obj>

```

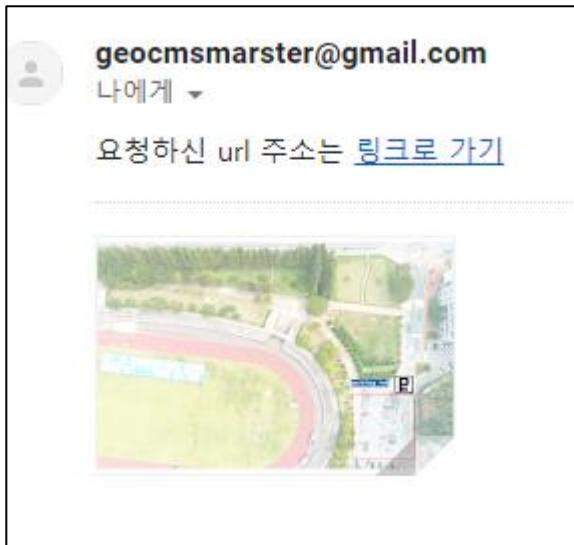
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Click the 'SEND EMAIL' button to enter the email to be shared, then select Send Link and Send Image to share the link and image.

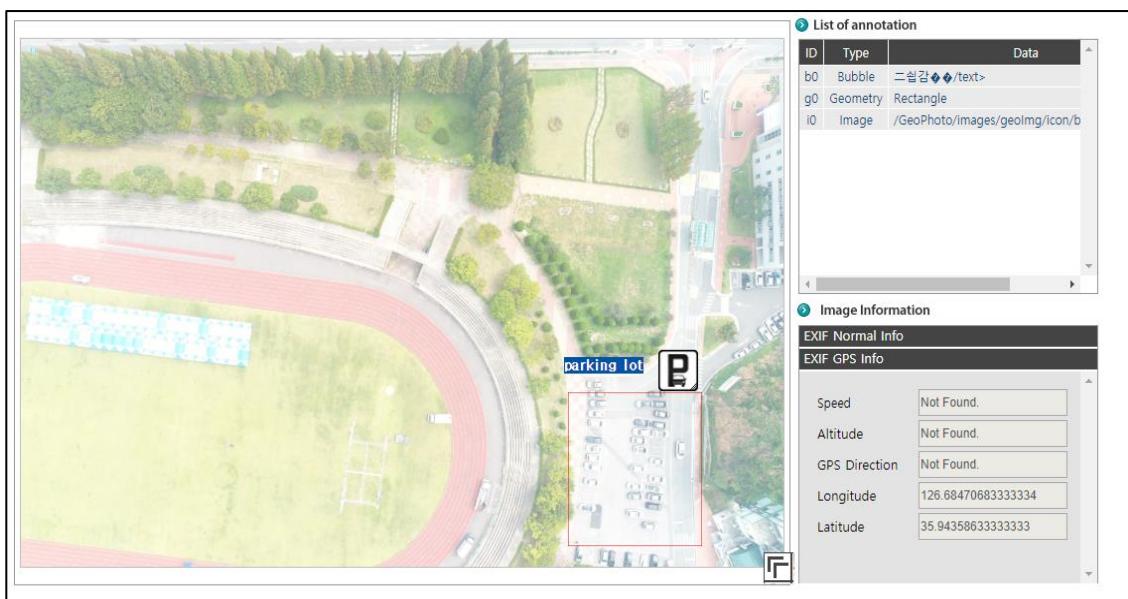


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- You can go to the link and check the image through the received e-mail.
 - Click the link button to display the corresponding image viewer.



- Confirmation of authoring items through Image Viewer
 - When I check the image viewer by link, the bottom image and video list are not shown.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

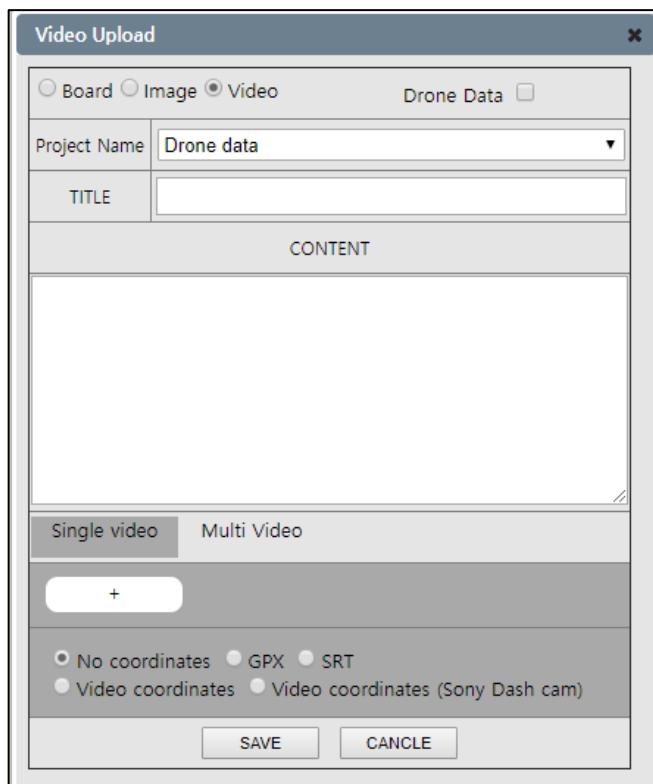
3.2.10. Upload video

- Uploading videos

- Click the 'make Contents' button to create the content and then select the video to upload the video.
- When uploading the video, you can upload the gpx file and the srt file containing the video file and the location information together, or if the video contains the coordinate information, select the video to extract the coordinates and upload it.

(See Uploading Coordinate Files in 3.2.16)

- Up to 4 video files can be registered.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- The gpx file and the srt file with location information can be added and registered using the add button. The corresponding gpx and srt files are merged and stored in the order of the files.

The image displays two side-by-side screenshots of a 'Video Upload' dialog box. Both screenshots show the same interface with minor differences in the file selection fields.

Left Screenshot: The 'GPX' radio button is selected under 'No coordinates'. The 'Add' button is visible, and the 'GPX' button is highlighted.

Right Screenshot: The 'SRT' radio button is selected under 'No coordinates'. The 'Add' button is visible, and the 'SRT' button is highlighted.

Both screenshots include fields for 'Project Name' (set to 'Drone data'), 'TITLE', and 'CONTENT'. Below these are tabs for 'Single video' and 'Multi Video', with the 'Single video' tab selected. At the bottom are 'SAVE' and 'CANCEL' buttons.

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- A video file containing location information is extracted and displayed by selecting a file to extract coordinates and then storing the coordinates of the video.

The screenshot displays two instances of a 'Video Upload' dialog box. Both instances have the following fields filled:

- Project Name:** Drone data
- TITLE:** (empty)
- CONTENT:** (empty)
- Drone Data:** (checkbox is unchecked)

Below these fields, there are two tabs: **Single video** and **Multi Video**. Under the **Single video** tab, there are four entries listed:

- DJI_0028.MP4
- DJI_0029.MOV
- (plus icon)
- (plus icon)

Each entry has a **Remove** button to its right. At the bottom of the dialog, there are several radio button groups:

- No coordinates** (radio button)
- GPX** (radio button)
- SRT** (radio button)
- Video coordinates** (radio button)
- Video coordinates (Sony Dash cam)** (radio button)
- DJI_0028.MP4** (radio button)
- DJI_0029.MOV** (radio button)

At the very bottom are **SAVE** and **CANCEL** buttons.

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- The GPX eXchange format (GPX) file
- VP, MapSource, OziExplorer, MapSend Lite, GTM and other GPS mapping software. It contains GPS data information such as waypoints, tracks, and routes.

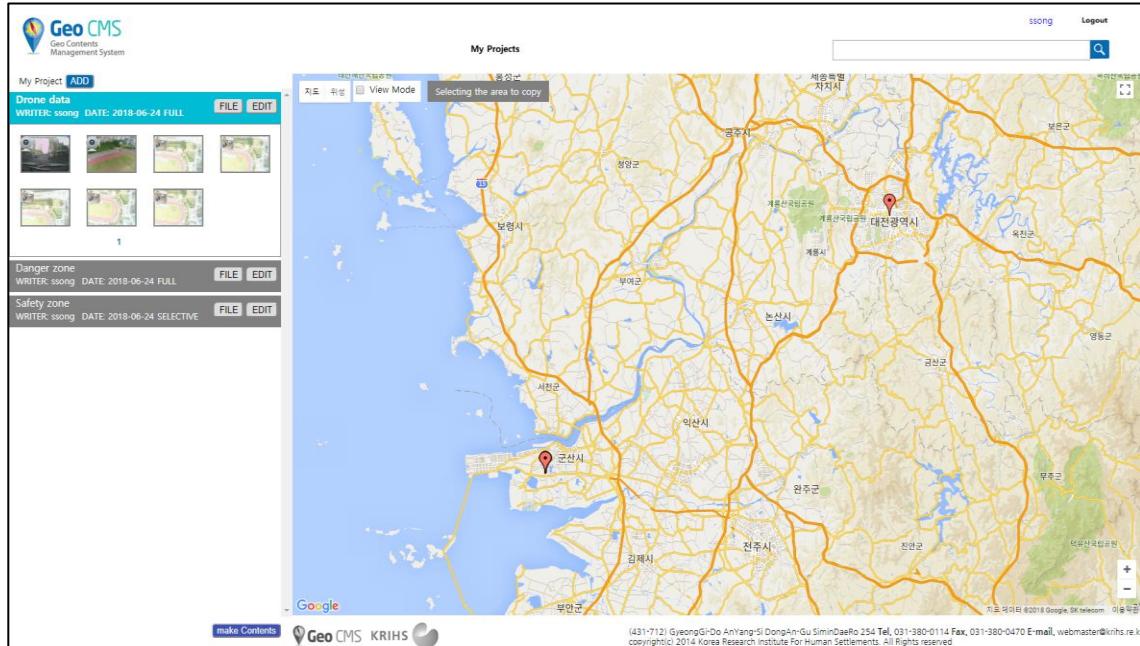
```

<?xml version="1.0" encoding="UTF-8"?>
<gpx xmlns="http://www.topografix.com/GPX/1/1" creator="GPS
<metadata>
<link href="http://www.gpstm.com">
<text>Geo Studio Tecnology Ltd</text>
</link>
<time>2010-03-07T03:17:44Z</time>
</metadata>
<trk>
<name>25-video_20100305_112506 on GPSies.com</name>
<trkseg>
<trkpt lat="36.349095424" lon="127.38477134698378"></trkpt>
<trkpt lat="36.349095424" lon="127.38456749909865"></trkpt>
<trkpt lat="36.349095424" lon="127.3843421935414"></trkpt>
<trkpt lat="36.349095424" lon="127.38417053216445"></trkpt>
<trkpt lat="36.349095424" lon="127.38398814195143"></trkpt>
<trkpt lat="36.349095424" lon="127.38379502290236"></trkpt>
<trkpt lat="36.349095424" lon="127.38352680200087"></trkpt>
<trkpt lat="36.349095424" lon="127.38330149644362"></trkpt>
<trkpt lat="36.349173195" lon="127.38320493691909"></trkpt>
<trkpt lat="36.349268249" lon="127.38319420808303"></trkpt>
<trkpt lat="36.349389225" lon="127.383162021574"></trkpt>
<trkpt lat="36.349458355" lon="127.383162021574"></trkpt>
<trkpt lat="36.349579331" lon="127.383151292738"></trkpt>
<trkpt lat="36.349683025" lon="127.383151292738"></trkpt>
</trkseg>
</trk>
</gpx>

```

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

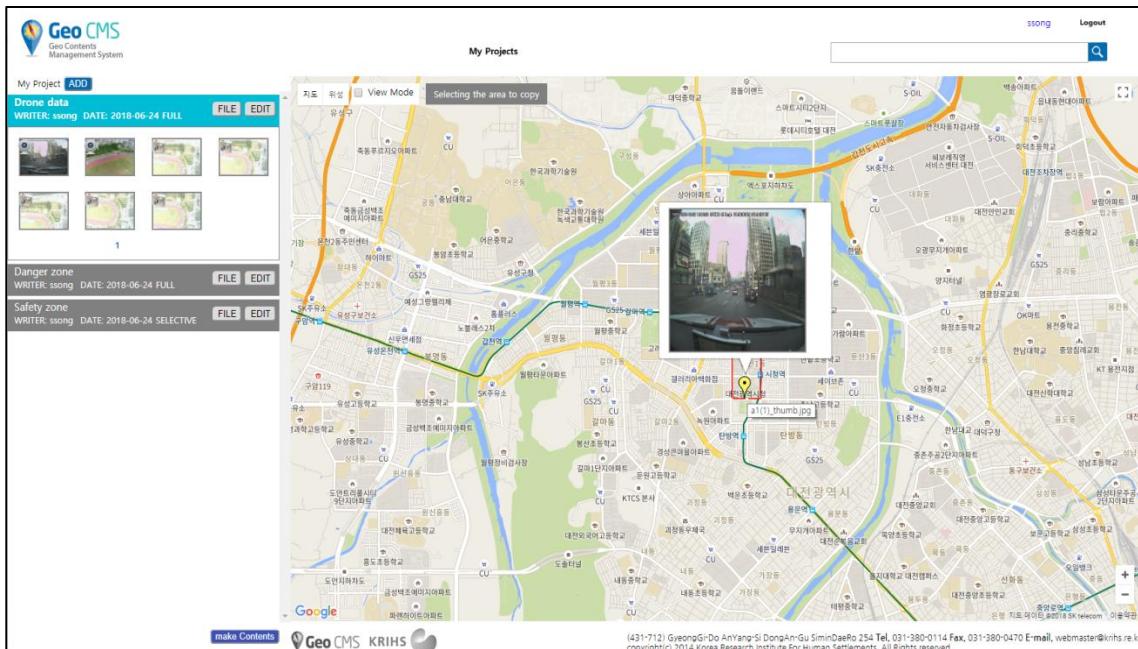
- After uploading the video, the thumbnail image of the corresponding video will be displayed in the left list in the corresponding project and the location information corresponding to the first position of the gpx file will be displayed on the right map.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

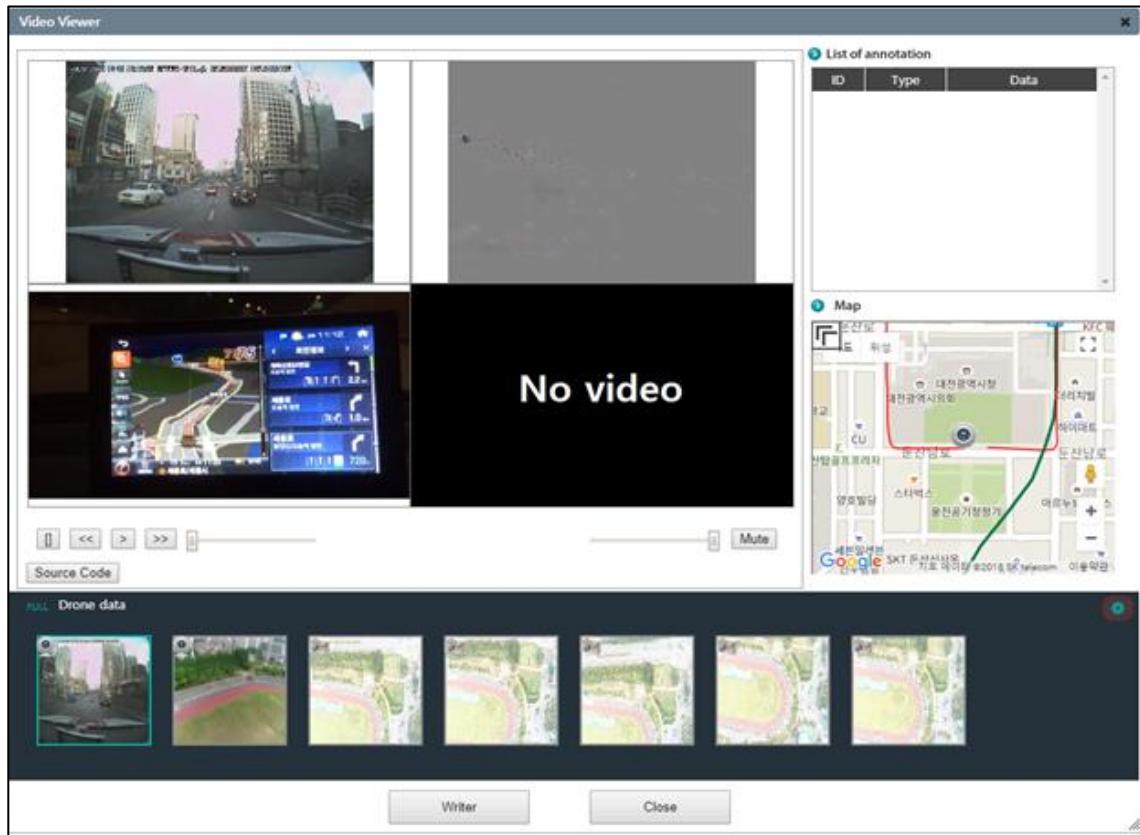
3.2.11. Video Viewer

- Click the image of the video on the left side and it will be displayed as a yellow marker at the start position. The path corresponding to the gpx file will be displayed as a red line, and the corresponding thumbnail and thumbnail name will be displayed when the mouse over.



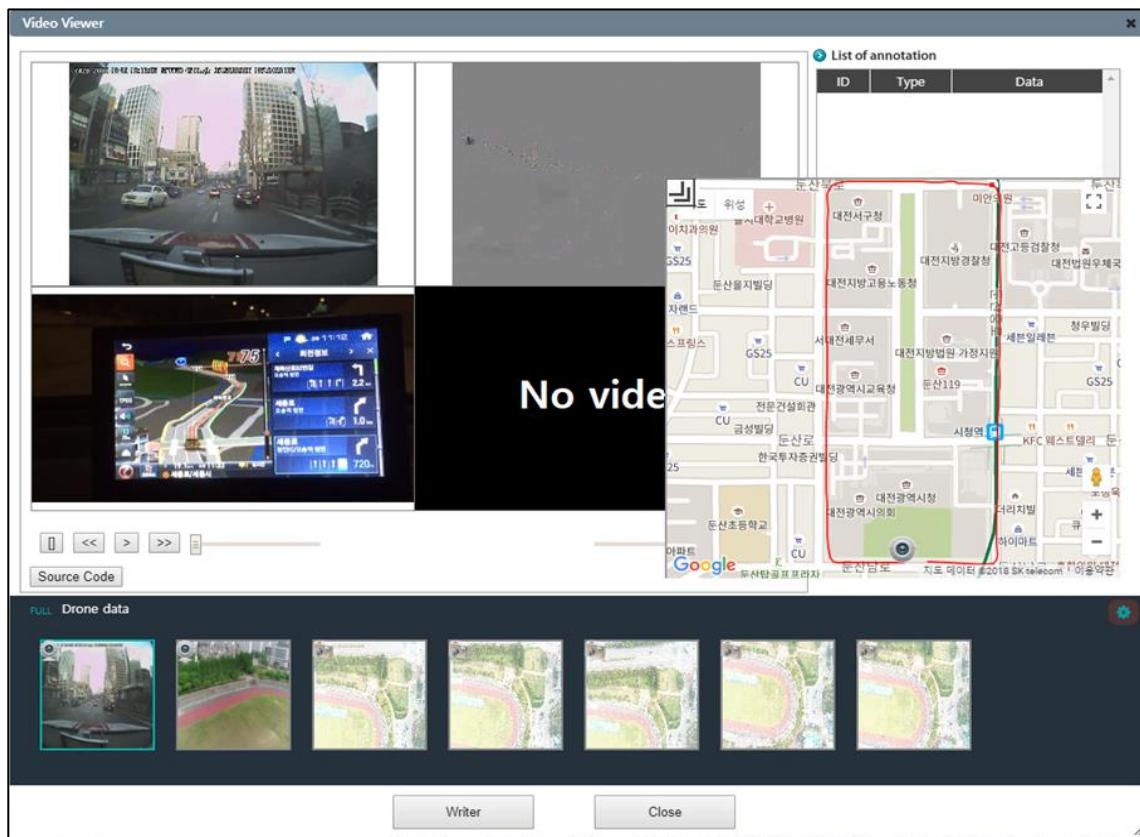
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- When clicking the marker, a window showing the video is displayed.
 - The selected movie is set as the main movie, and the thumbnail image of the movie in the bottom image and movie list is represented by a green frame



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

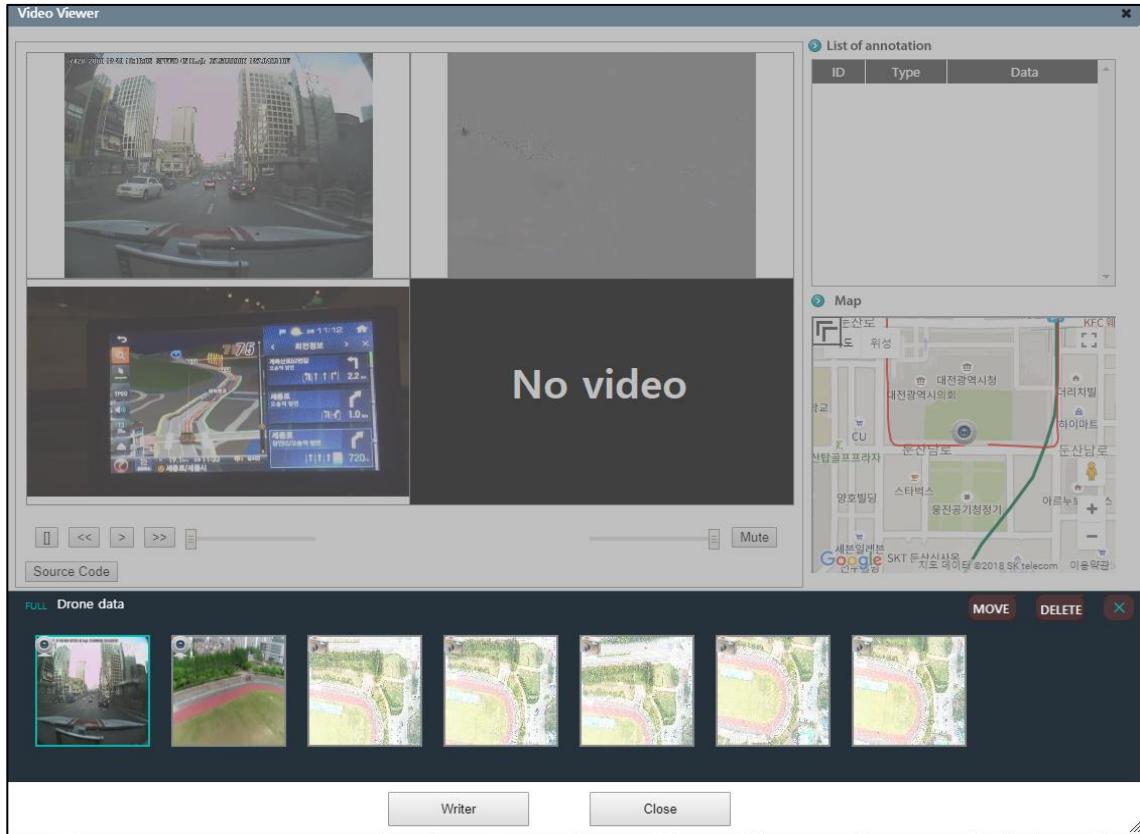
- In the video viewer window, click the 'Source Code' button at the bottom of the video, the source code for attaching the video will be displayed. On the right is a list of the annotation and a map showing the route. At the bottom, a list of images and videos of the project is displayed.
- Click the Play button to move the marker on the right while playing the video. (It is divided by the maximum movie length and moves every 1 second.)
- You can change the size of the map by using the arrow buttons on the right map.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

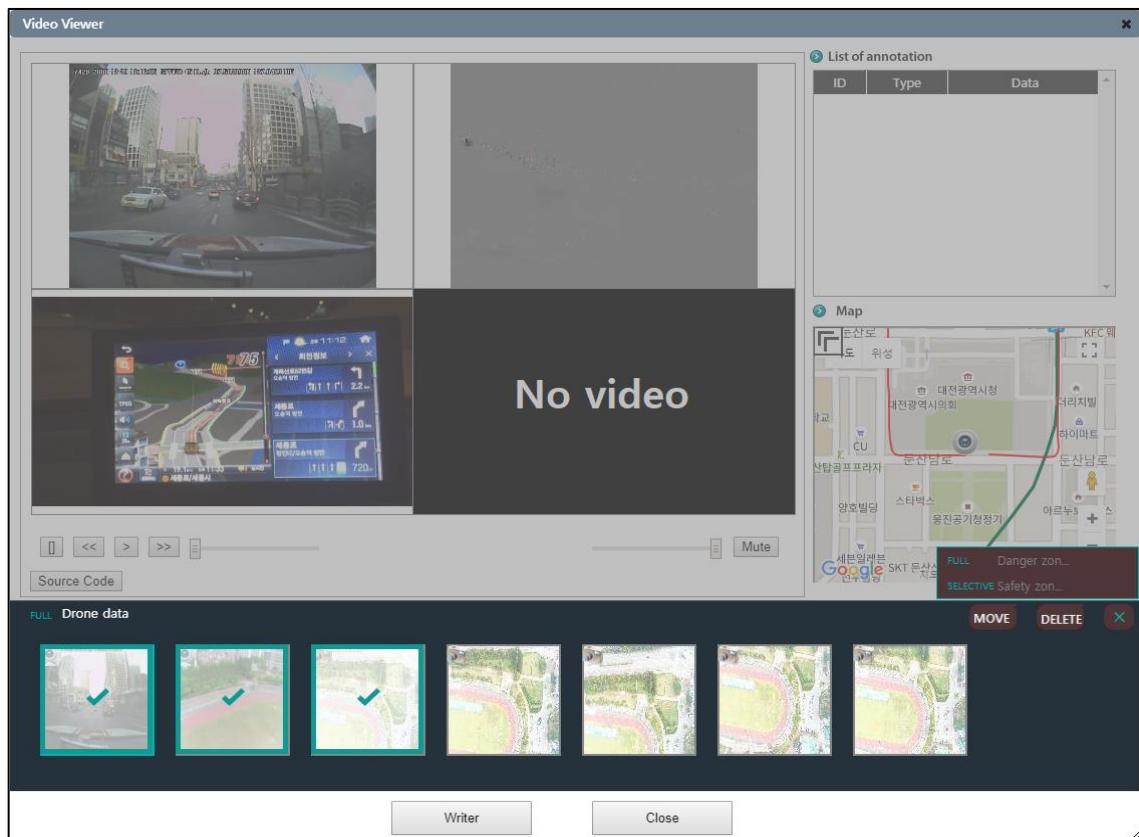
- When clicking the setting button on the lower right side, you can move and delete images and movies to other projects like image viewer.

–  (Settings button) Click screen



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

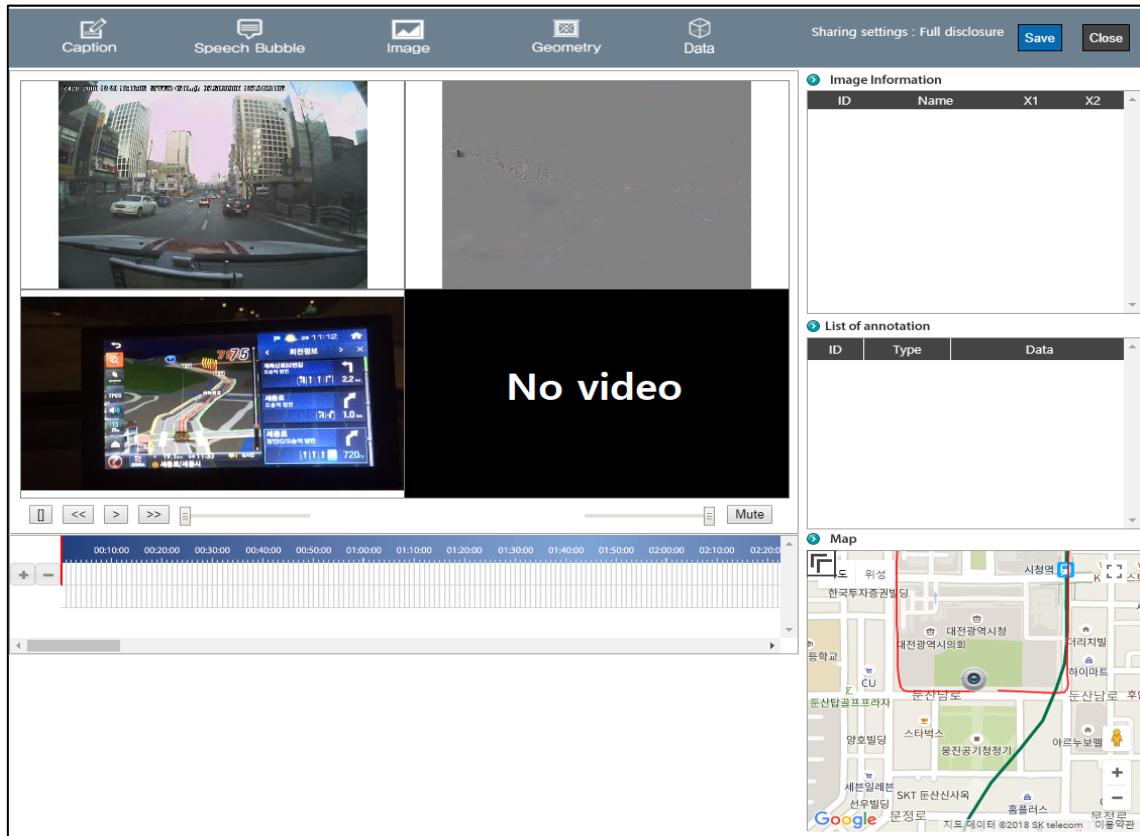
- If you click 'Go' button after selecting images and videos, a list of projects that can be moved will appear, and the selected images and movies will be moved to the corresponding project. (When moving the main image, the main image is changed to the first data of the remaining project list. If there is no data in the project, the notification window is opened and the window is closed.)



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

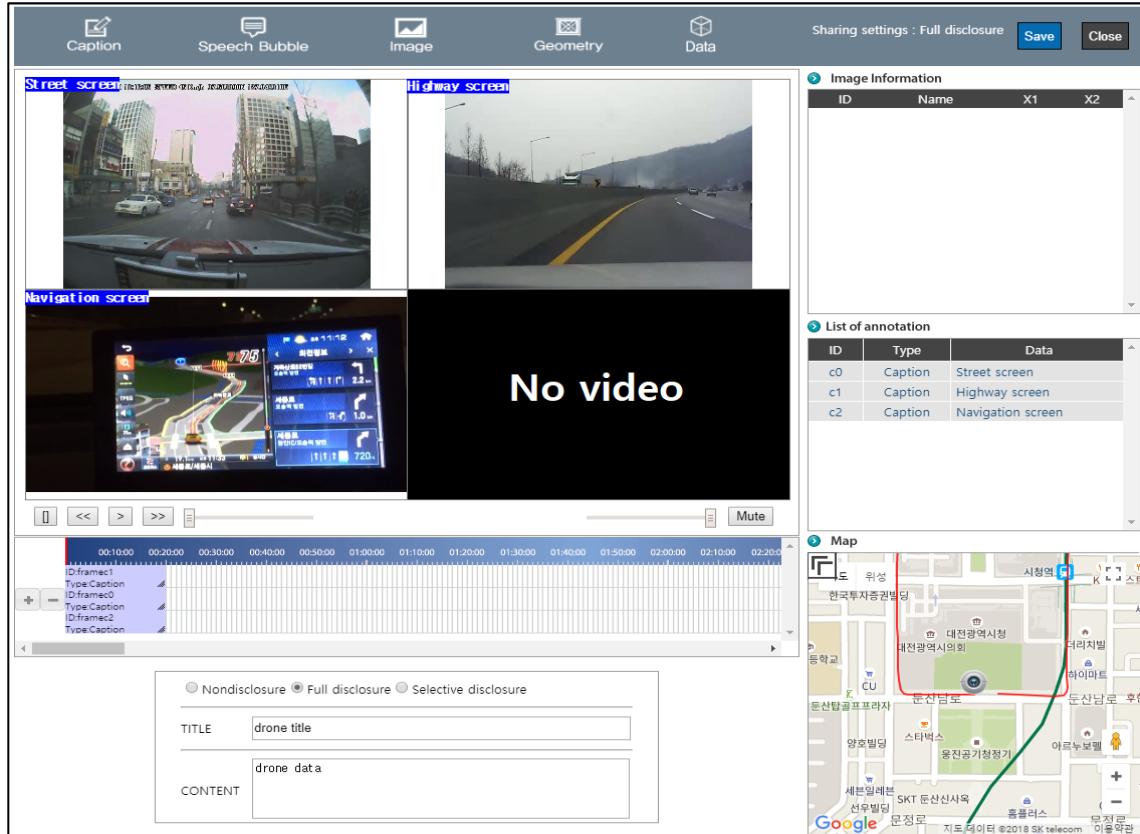
3.2.12. 동영상 저작기

- Click the 'Write' button at the bottom to display a window where you can edit the object in the picture.
 - Zone settings and captioning, speech bubbles, and authoring information represented by icons
 - Top menu: Caption / speech bubble / icon / area setting / data information
 - Expressions in captions and speech bubbles
 - Expression of authoring information using icon
 - Free area representation using area setting options
 - Check the list of objects added to the List of annotation on the right side
 - The frame area at the bottom of the video (information of the objects to be displayed in the corresponding frame of the moving picture)



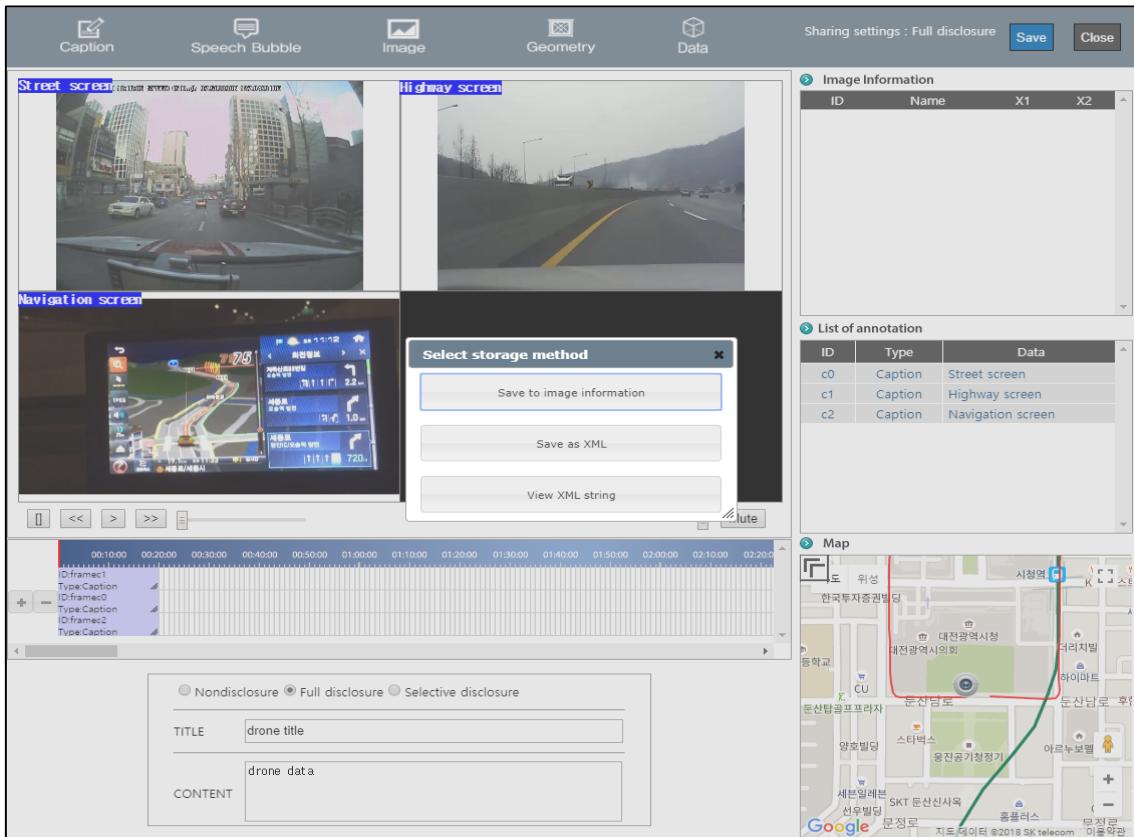
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Apply various icons to change additional presentation and data and sharing settings



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Select the save method after authoring
 - Save to EXIF
 - Save to XML



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Check XML file

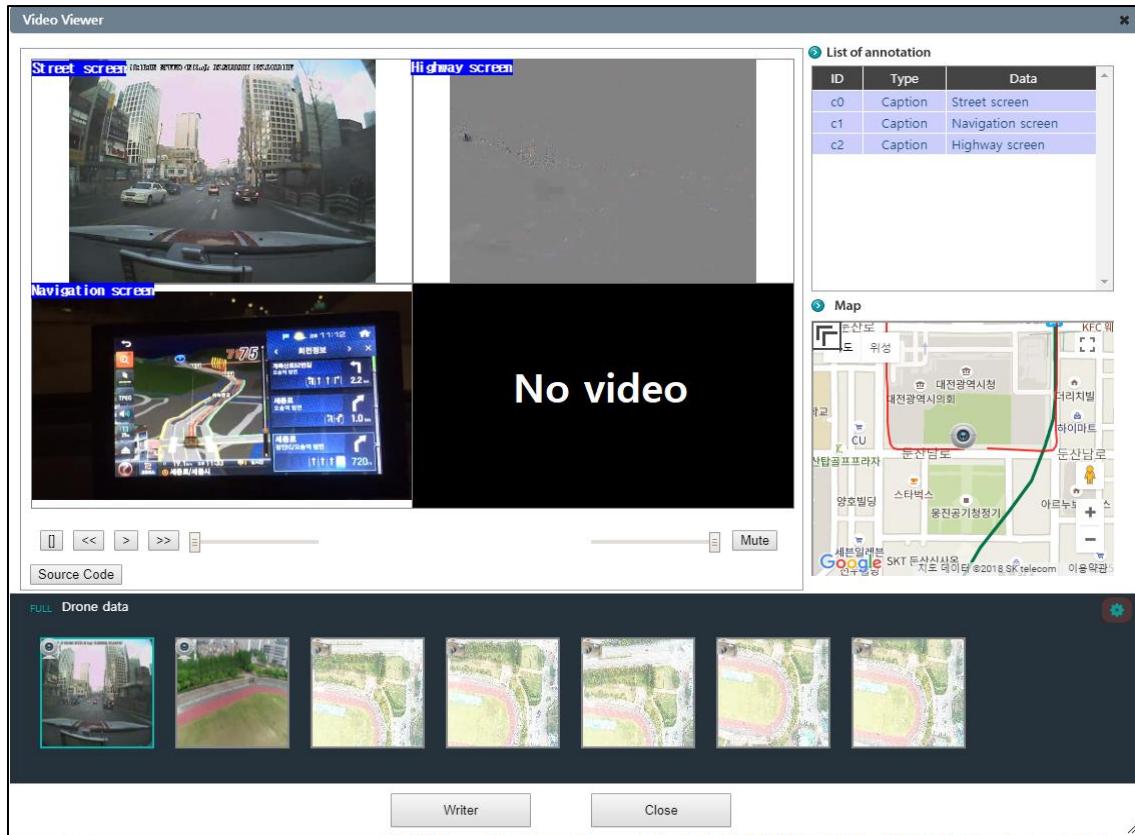
```

<?xml version="1.0" encoding="utf-8"?>
<GeoCMS>
<obj>
<id>c</id>
<top>-6</top>
<left>10</left>
<href>false</href>
<underline>false</underline>
<italic>false</italic>
<bold>true</bold>
<fontsize>H3</fontsize>
<fontcolor>#ffffff</fontcolor>
<backgroundcolor>#0000ff</backgroundcolor>
<text>Street screen</text>
<frameline>25</frameline>
<framestart>0</framestart>
<frameend>100</frameend>
</obj>
<obj>
<id>c</id>
<top>-4</top>
<left>390</left>
<href>false</href>
<underline>false</underline>
<italic>false</italic>
<bold>true</bold>
<fontsize>H3</fontsize>
<fontcolor>#ffffff</fontcolor>
<backgroundcolor>#0000ff</backgroundcolor>
<text>Highway screen</text>
<frameline>0</frameline>
<framestart>0</framestart>
<frameend>100</frameend>
</obj>
<obj>

```

GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

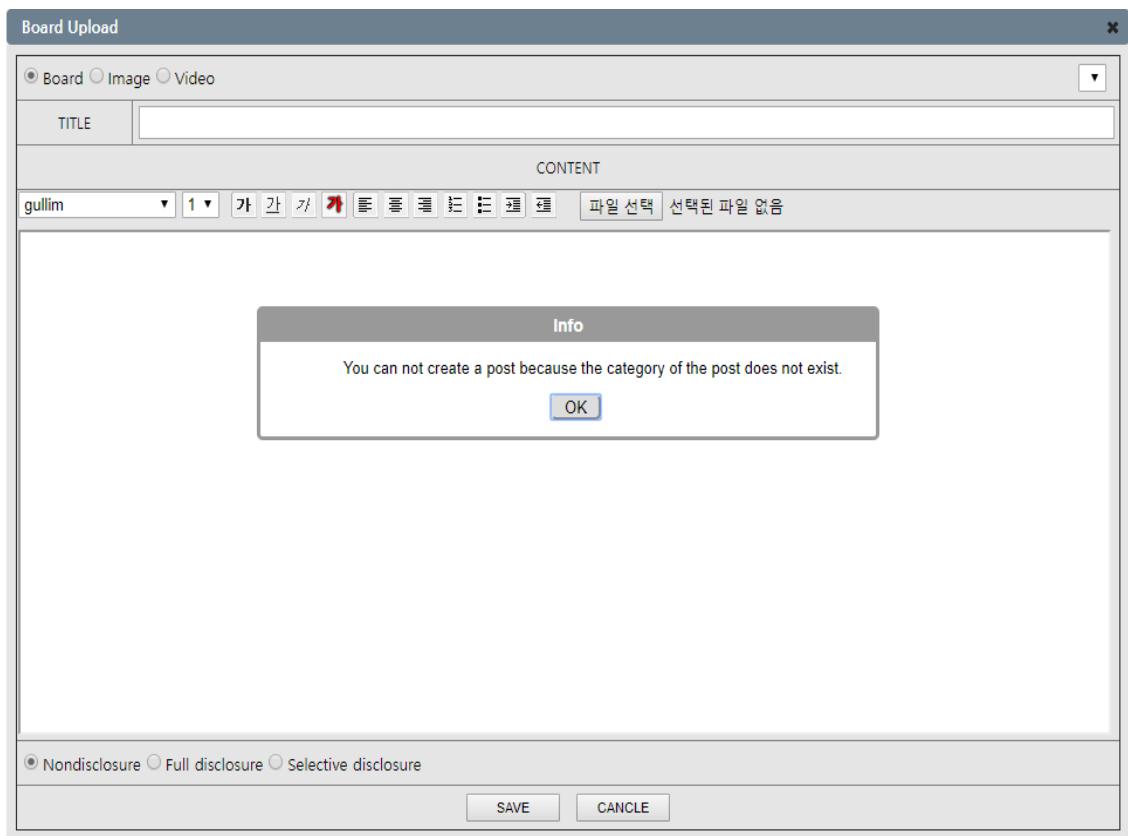
- Checking the contents of author through Video Viewer



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

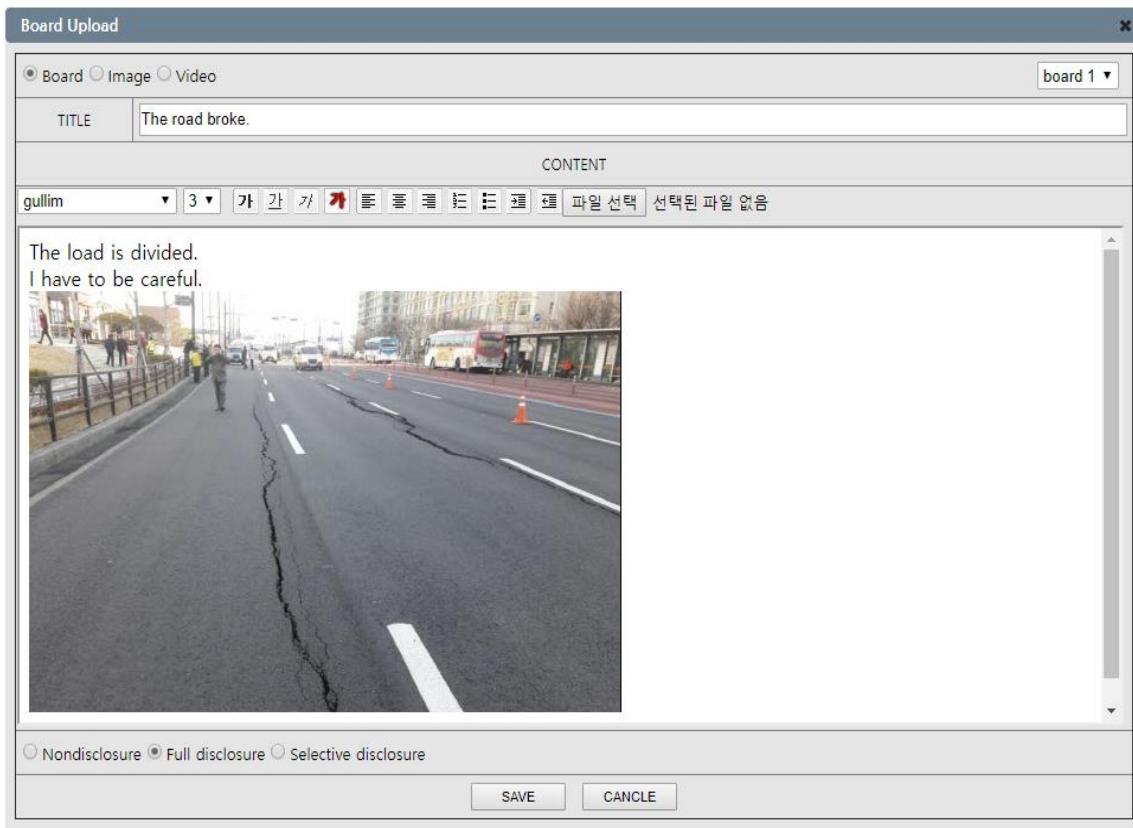
3.2.13. Upload a post

- Upload a post
 - Click the 'make Contents' button to create the content and select the Board to upload the video.
 - If there is no tab to save the post, you can not create the post.



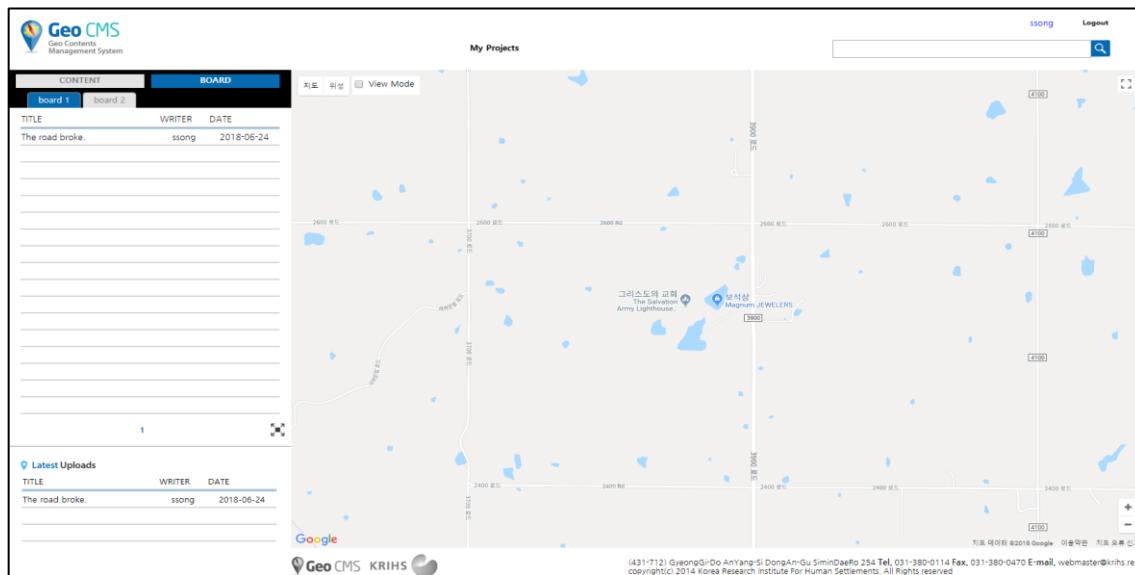
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- You can attach an image using File Selection,
- You can select the tab to save through the right selection box, and it does not belong to the project.

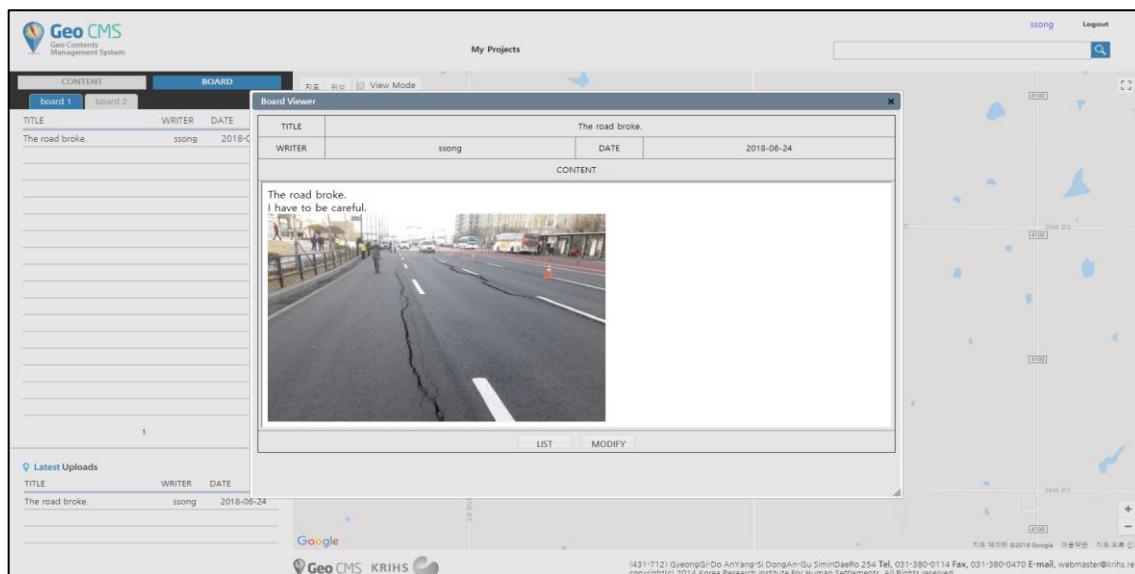


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Confirm post saving
 - If you select Board on the main screen, the tab of the post will appear and a list of the posts on that tab will appear.



- Check the post
 - When you select a post from the list of tabs, the corresponding Board Viewer appears as a popup and you can see the contents of the post.

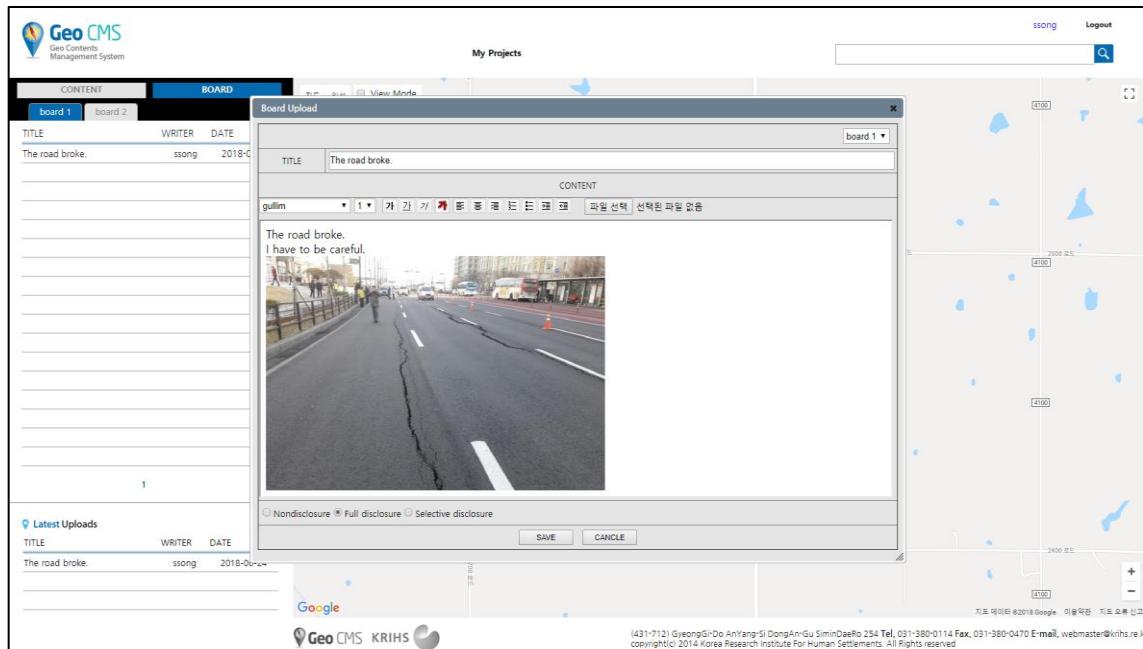


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.14. Edit post

- Edit post

- If you click 'MODIFY' button on the Board Viewer after selecting the relevant post from the list, the Board Upload screen will be displayed, where you can edit the post. You can save it by clicking the 'SAVE' button after modifying the post.

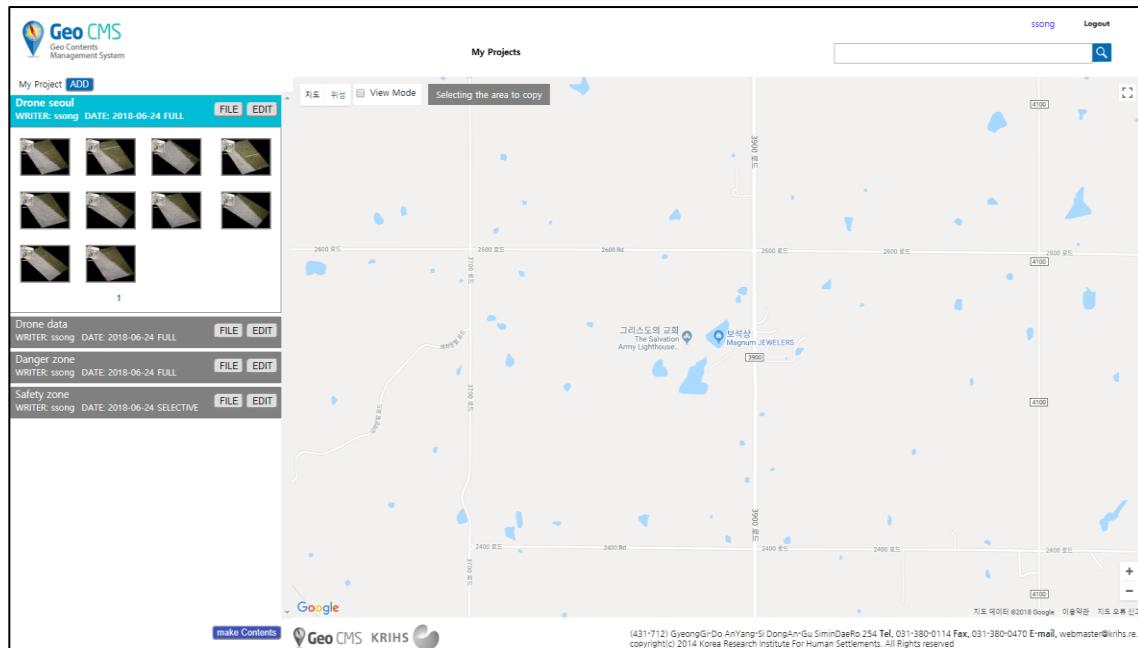


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.15. Upload an image without coordinates

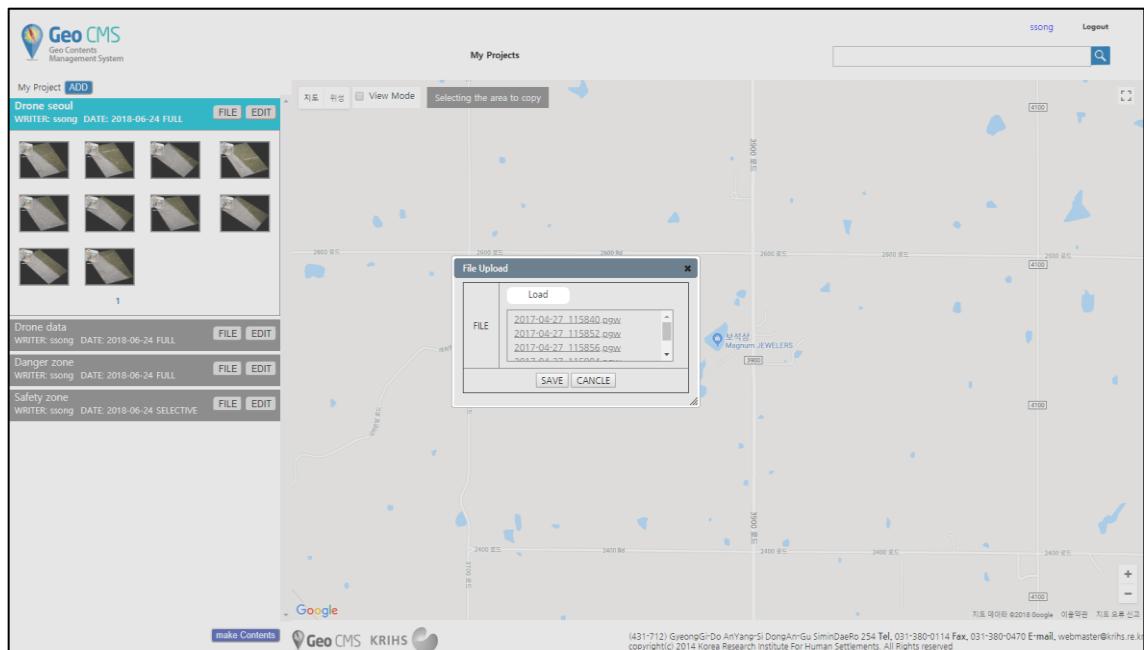
3.2.15.1. Upload coordinate files

- Uploading a coordinate file to an image file without EXIF information
 - If the image does not have EXIF information



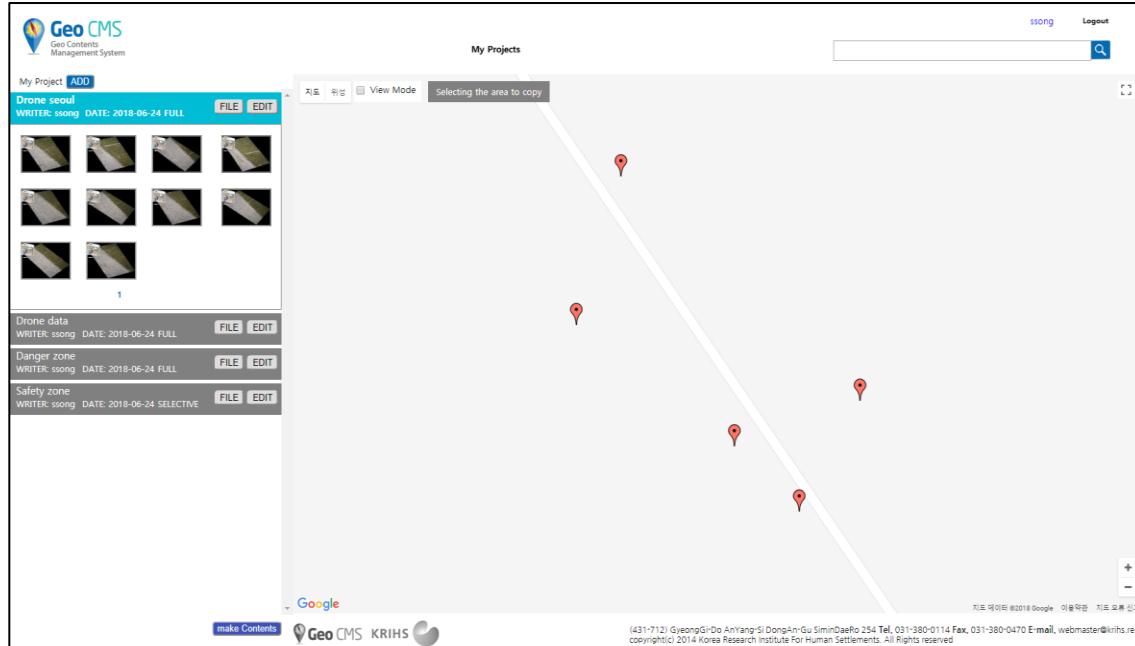
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Click the 'FILE' button on the right side of the project and then the 'File Upload' popup window will appear. If you click the 'SAVE' button after selecting the coordinate file, the data with the file name of the same image and movie data as the uploaded file name, is updated.
 - Coordinate files of image can be .jpgw, .gifw, .pngw, .bmpw, .jgw, .gfw, .pgw, .bpw, and video coordinate files can be .gpx files.
 - Coordinate file upload screen



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

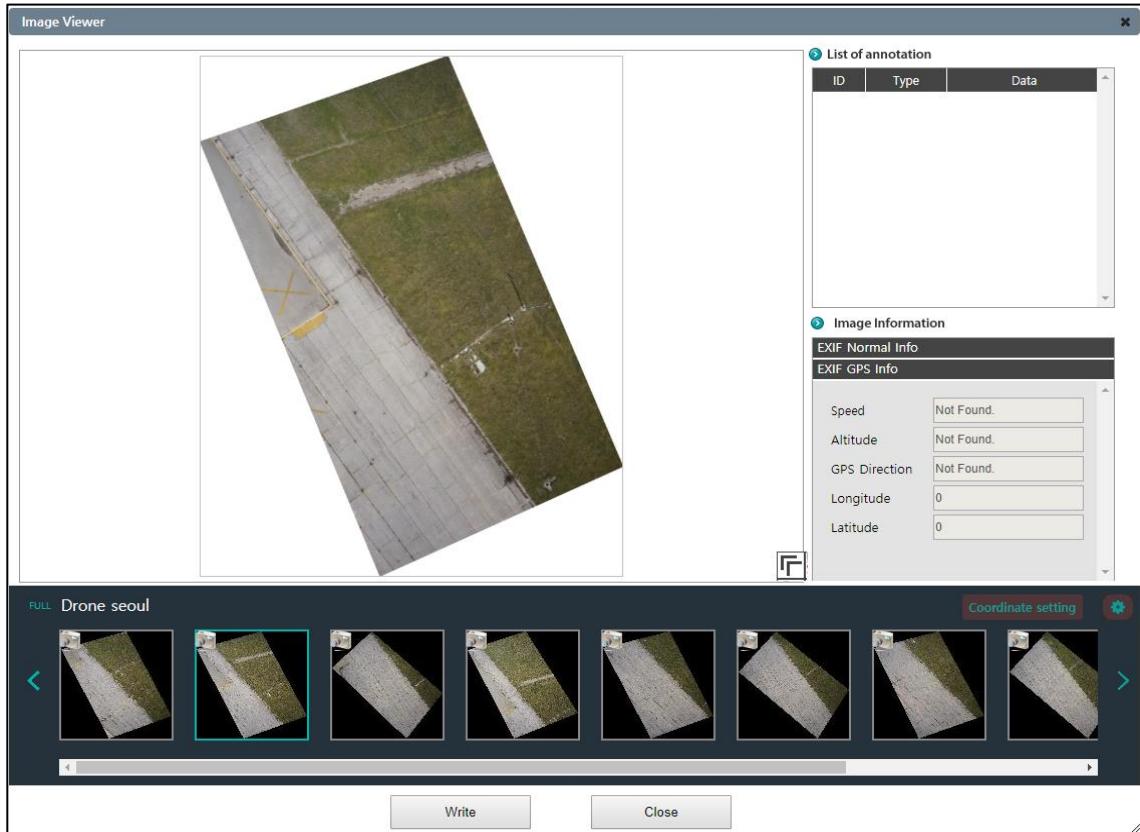
- Screen with updated coordinate file



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

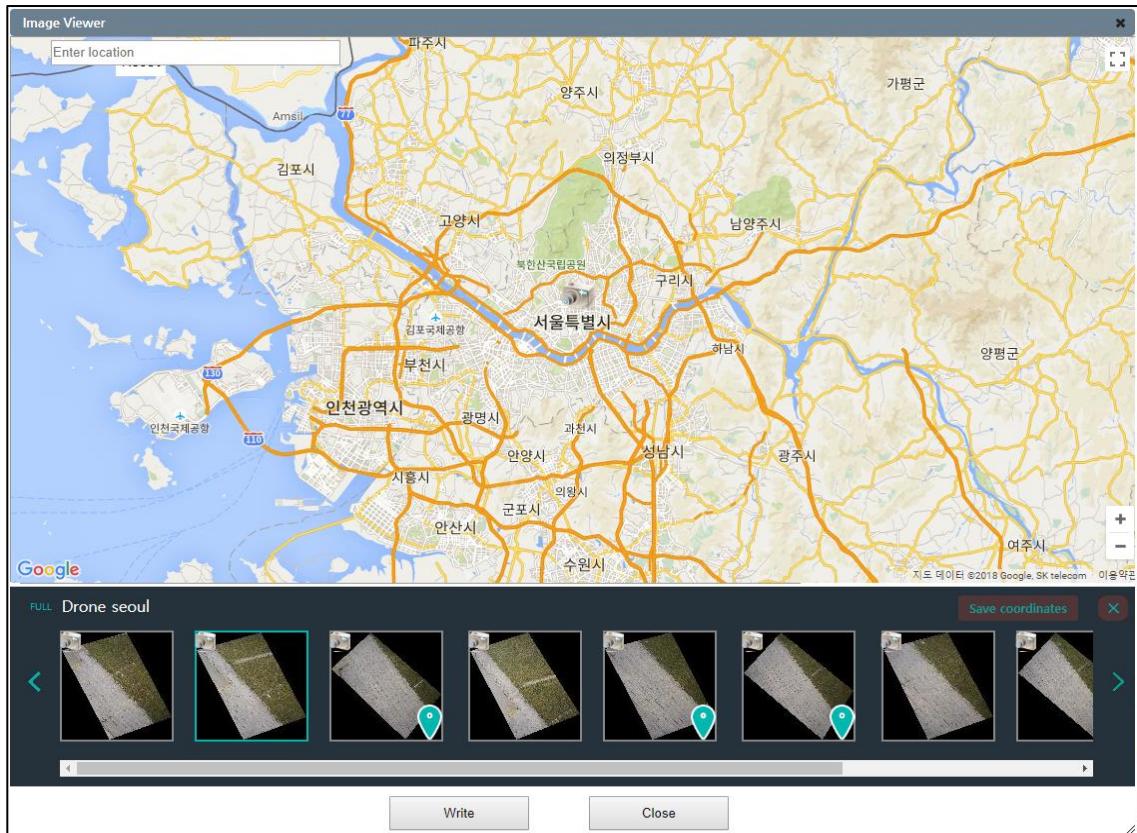
3.2.15.2. Specifying coordinates

- Move to the image viewer screen.



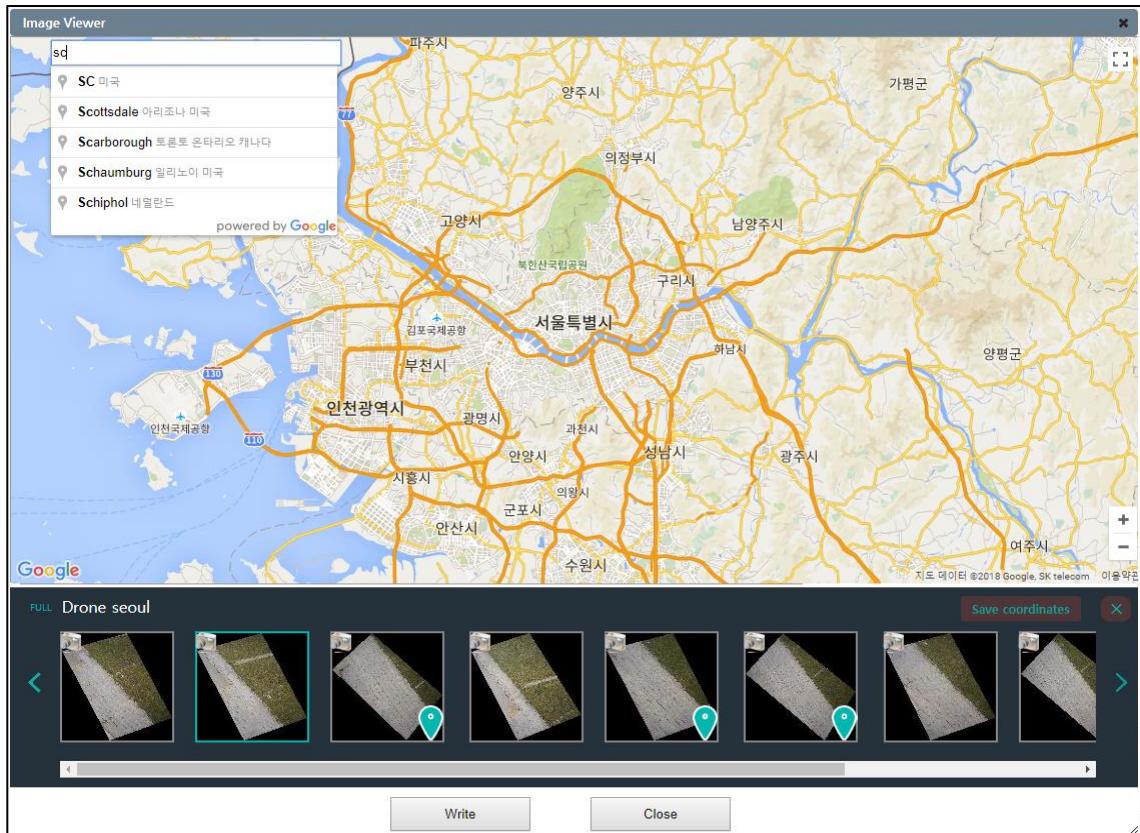
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Press the coordinate setting button.



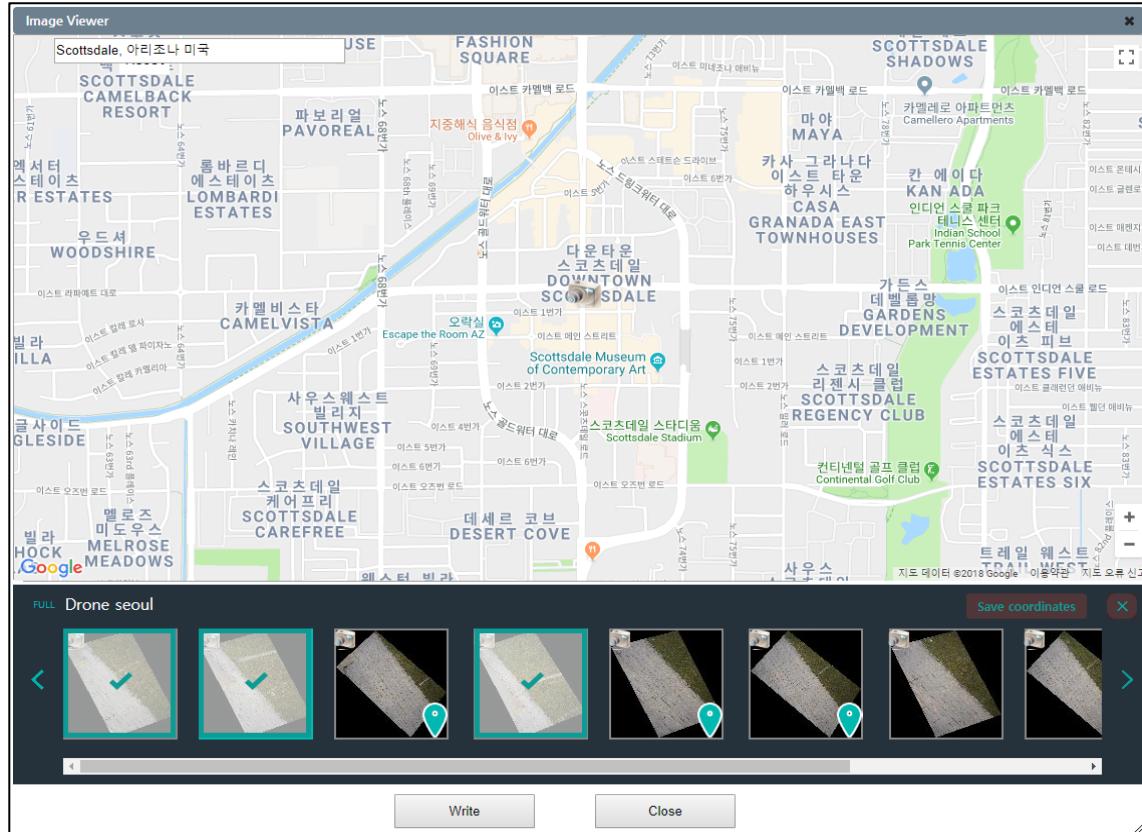
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Search for the address in the address search box at the top.



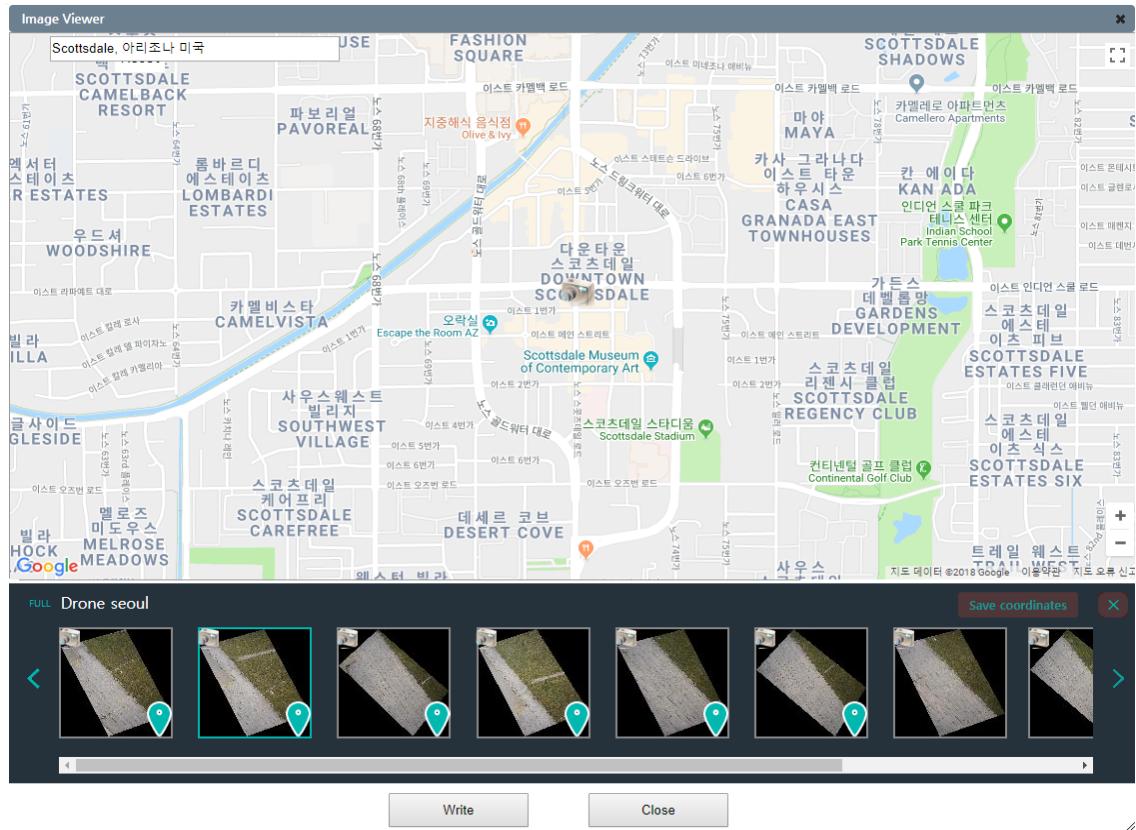
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Select the address, move the marker to the desired position, select the image to save the coordinates, and press the Save coordinates button



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

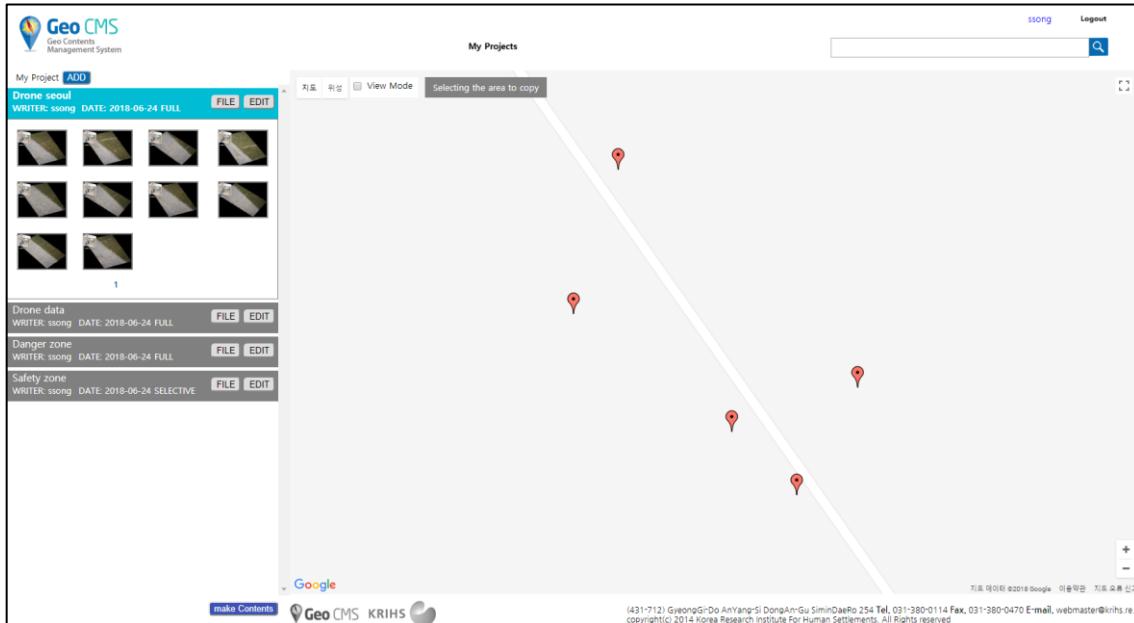
- After saving, coordinates are saved in the image.



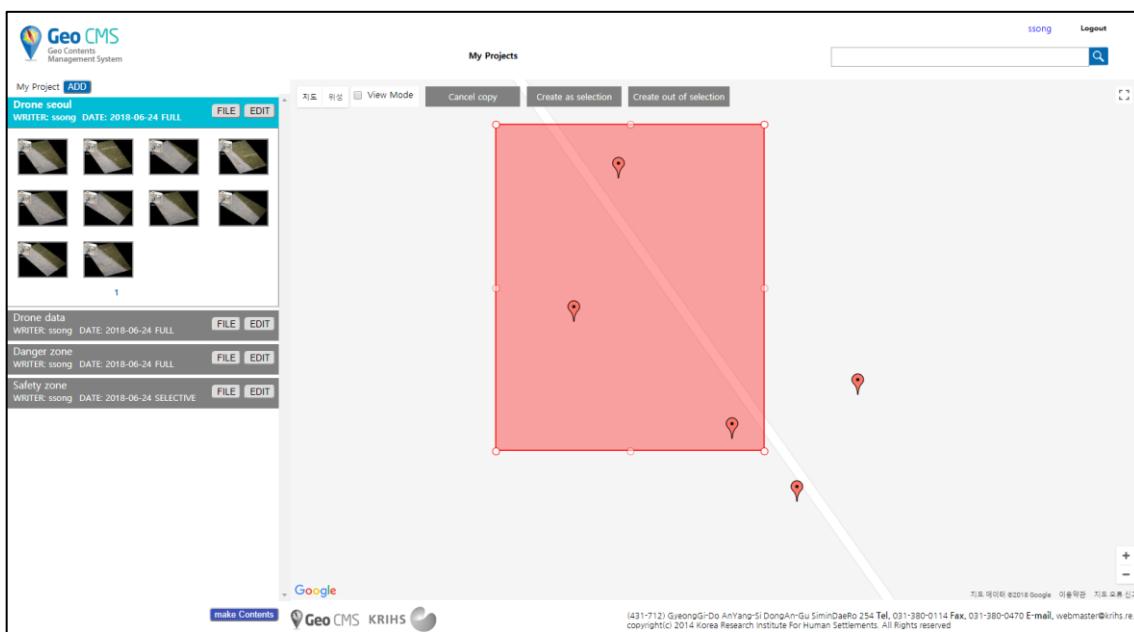
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.16. Copying content on a map

- Select the project to copy and click the 'Select area to copy' button at the top of the map.

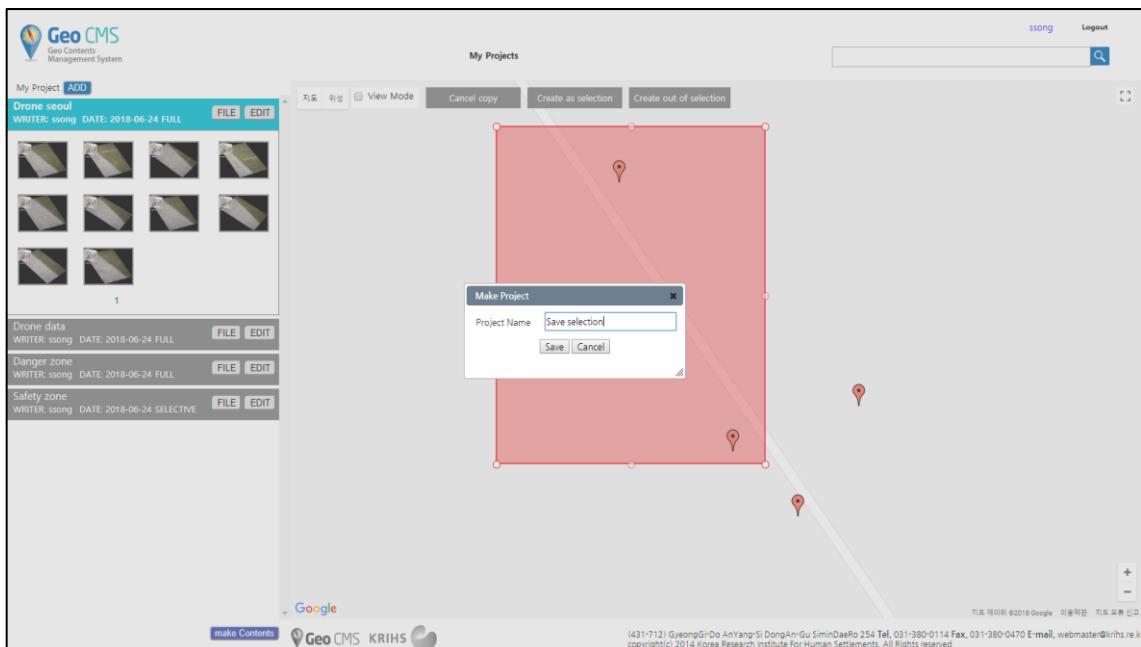


- Set the area of the content to be copied on the map.



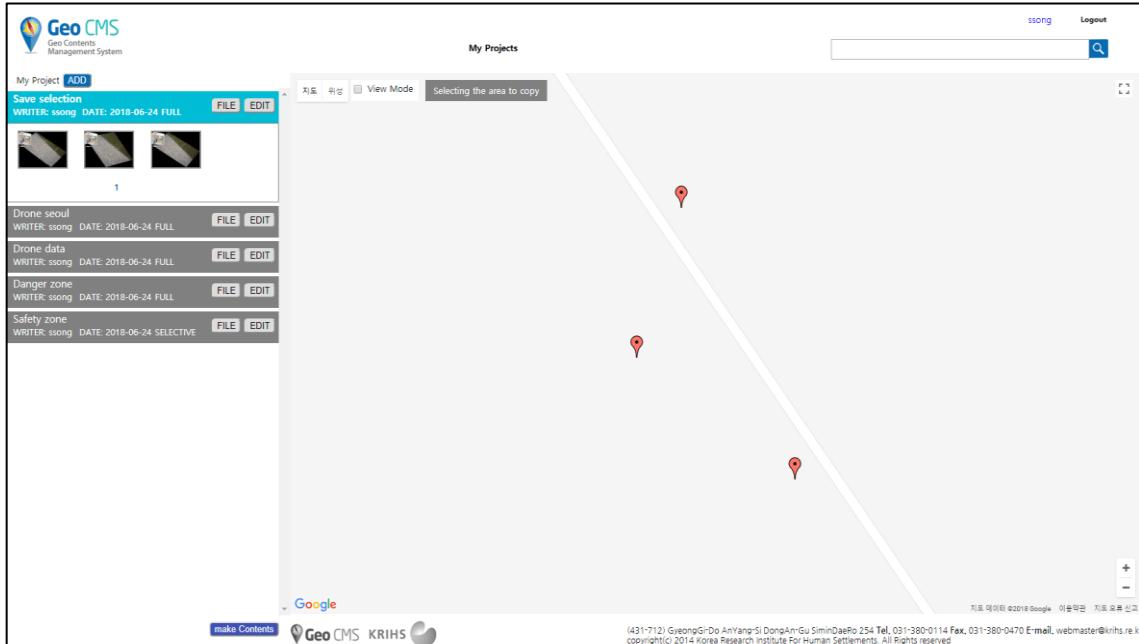
GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- To create a new project with the data of the area selected on the map, click on the 'Create as selection' button. To create a new data from the selected area, click 'Create Out of Selection' button. The Make Project pop-up window will appear. If you click 'Save' button after inputting new project name, the project will be created with the selected data.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Create copied project
- – The project is created the same as the sharing setting of the project to be copied.

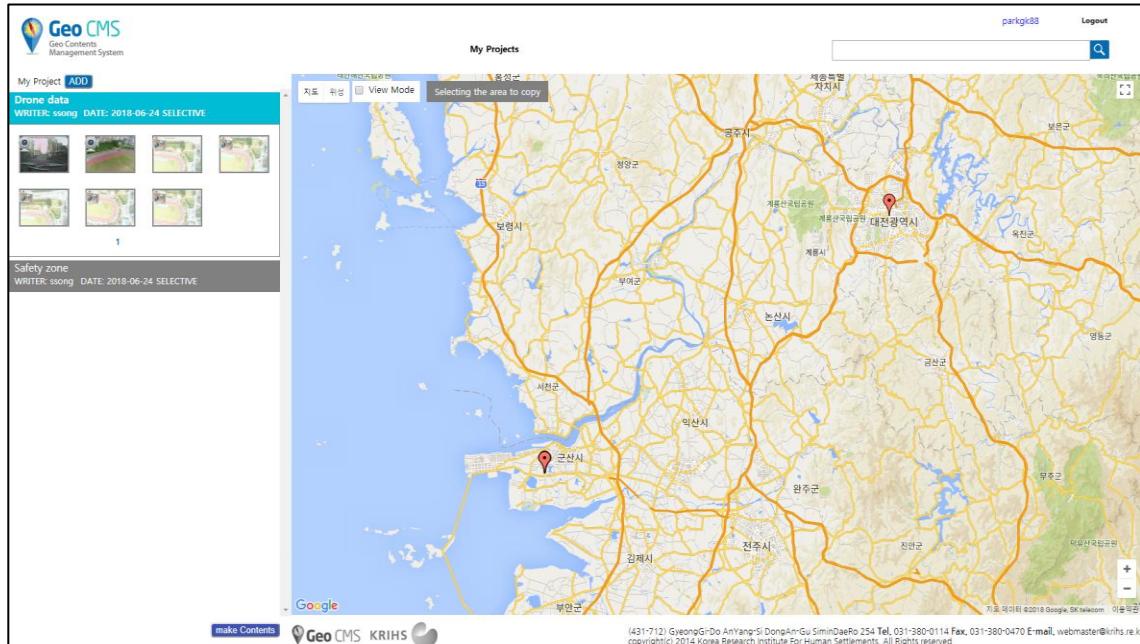


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.17. Project Share User (Share O, Edit X)

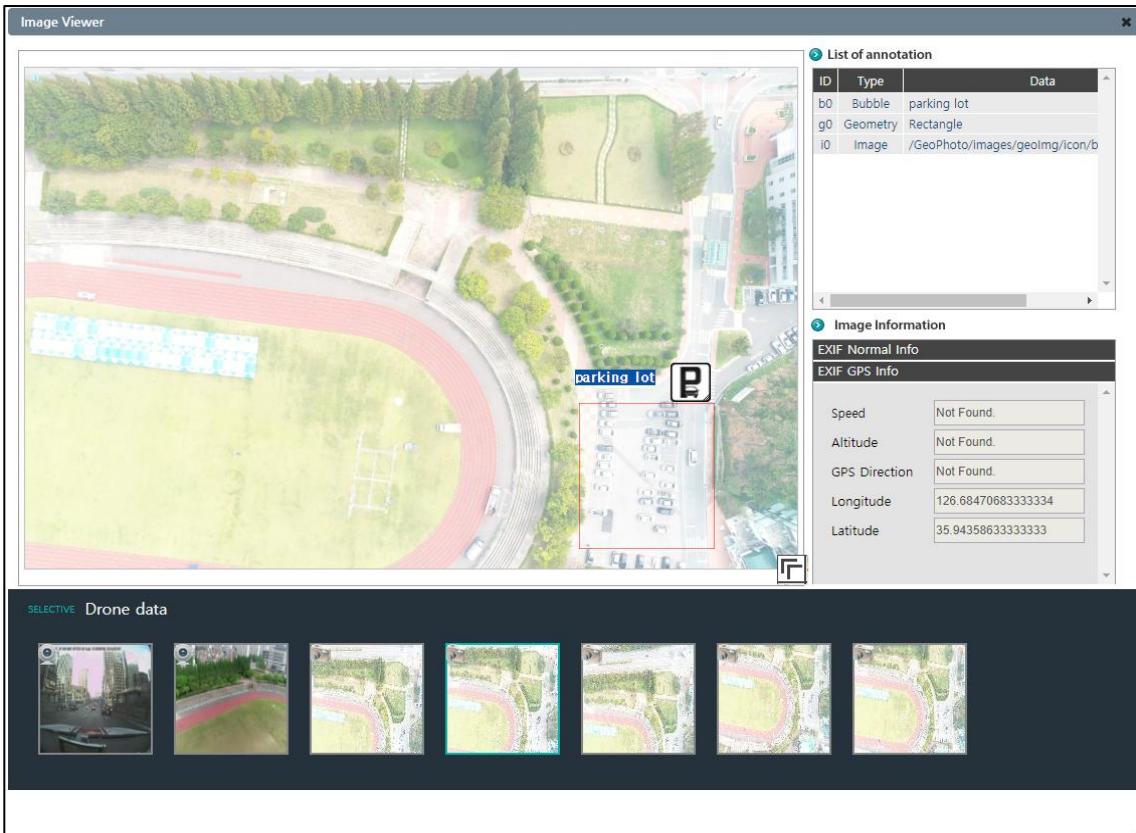
- Project list (Shared O, Edit X)

- A list of shared projects appears in My Project list.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- There is no editing authority, so it is only possible to view authored content.

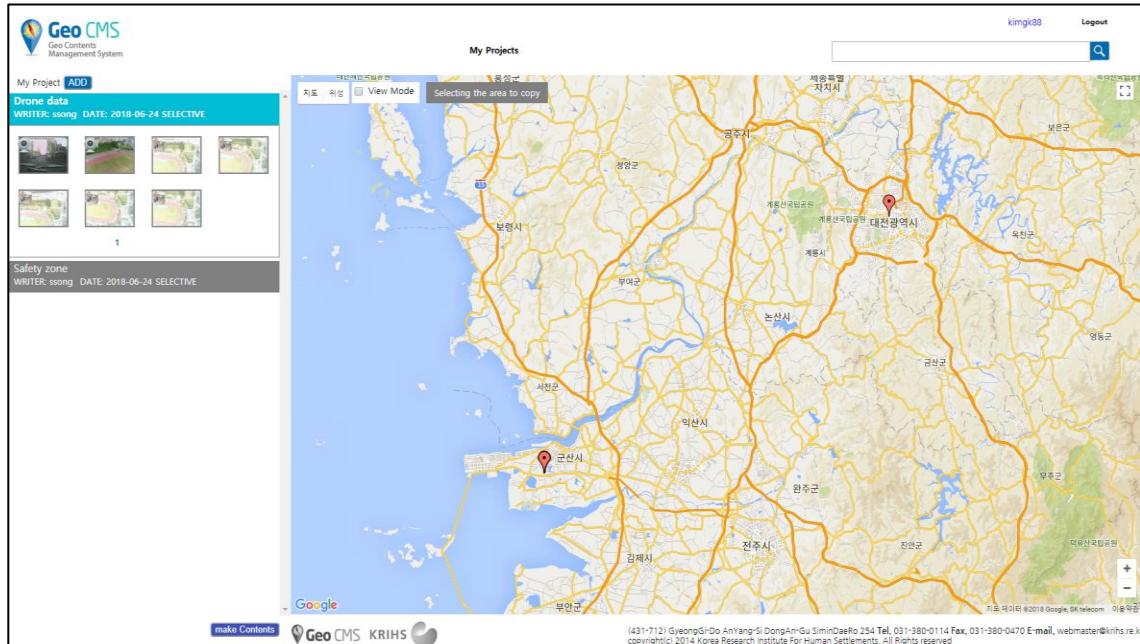


GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

3.2.18. Project Share User (Share O, Edit O)

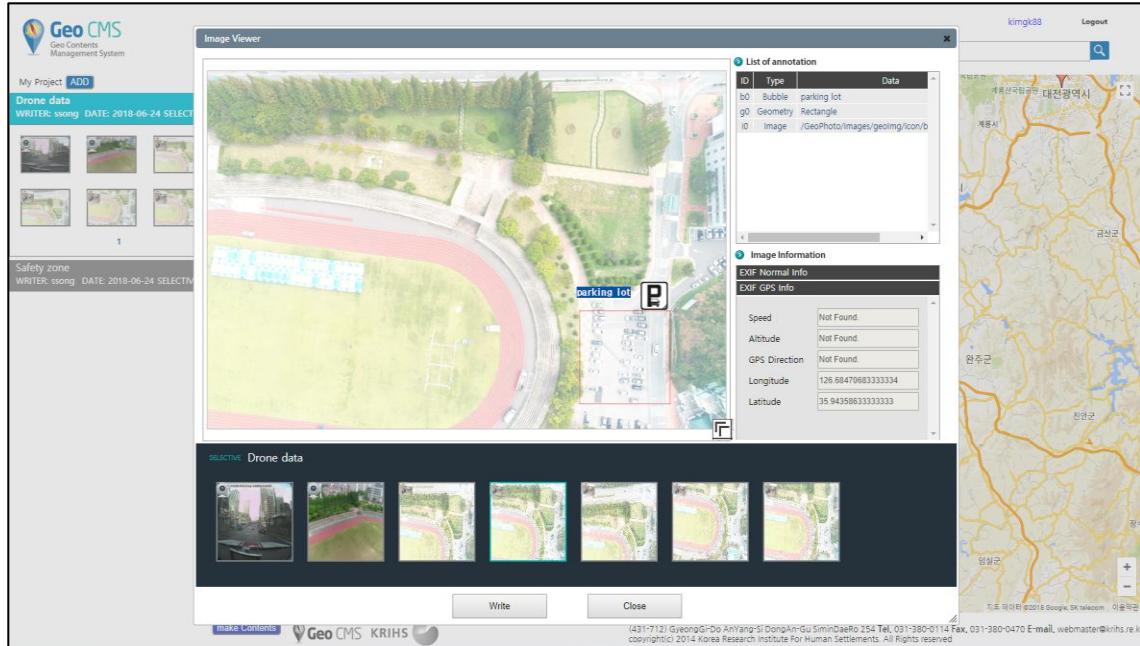
- Project list (Shared O, Edit O)

- A list of shared projects appears in My Project list.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- The 'Make Contents' button appears on the lower right corner because you have editing rights.



GeoCMS Manual	Project classification	Land Spatial Information Research Project
	Project name	GeoCMS

- Because you have edit authority, when you click 'Make Contents' button, you will be able to author the object except data.

