



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.

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- 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

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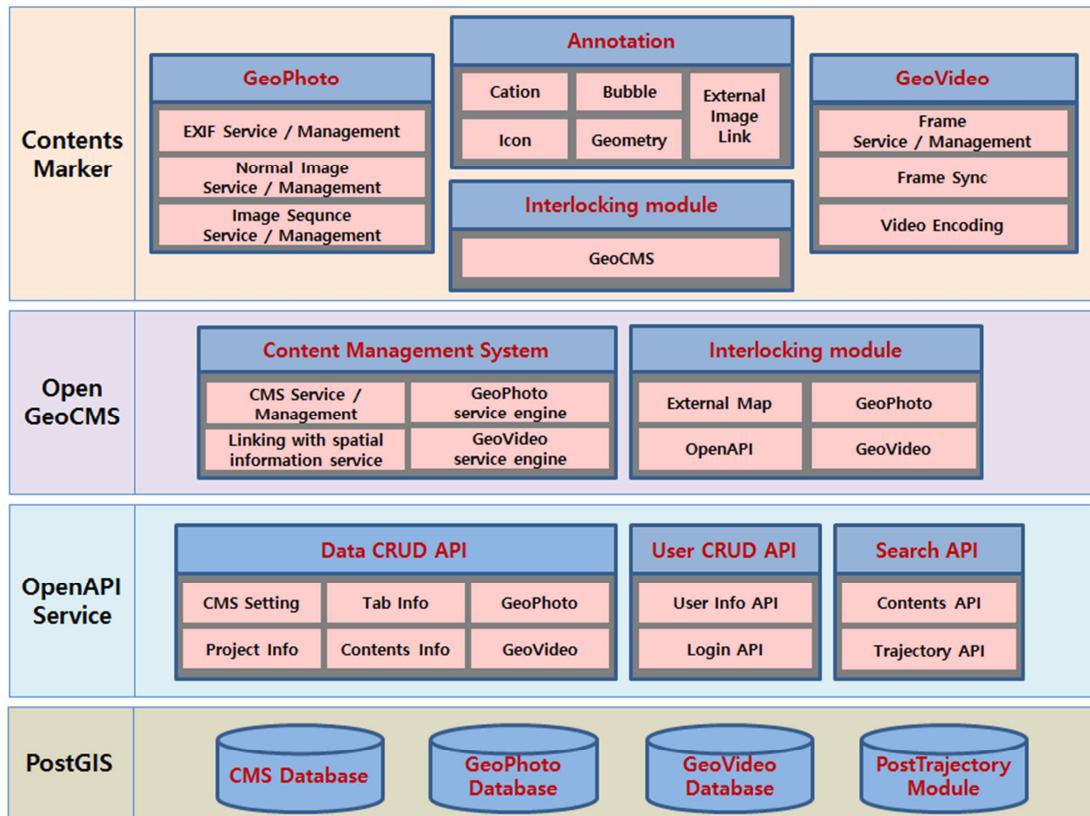
2. Development Contents

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	

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2.2. System structure

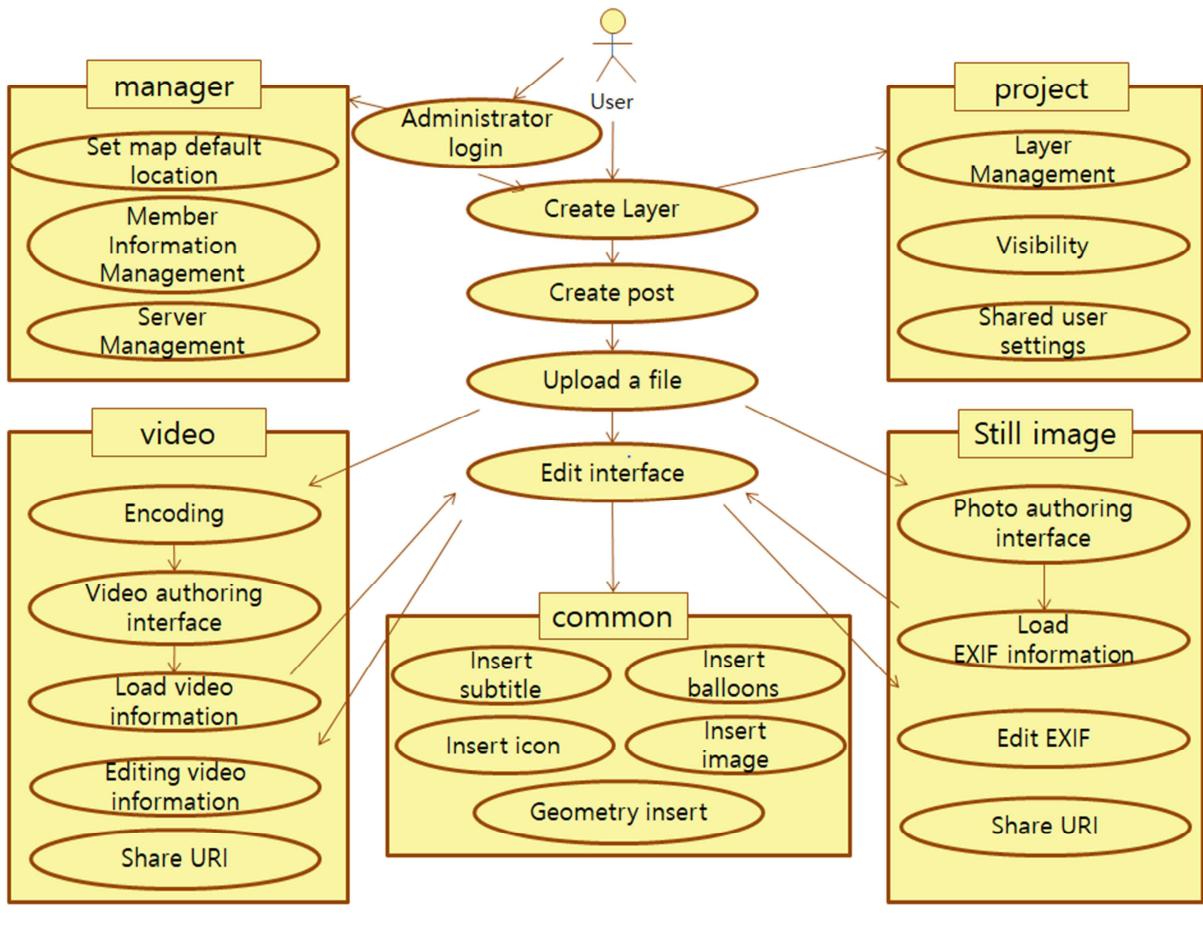


System structure diagram

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

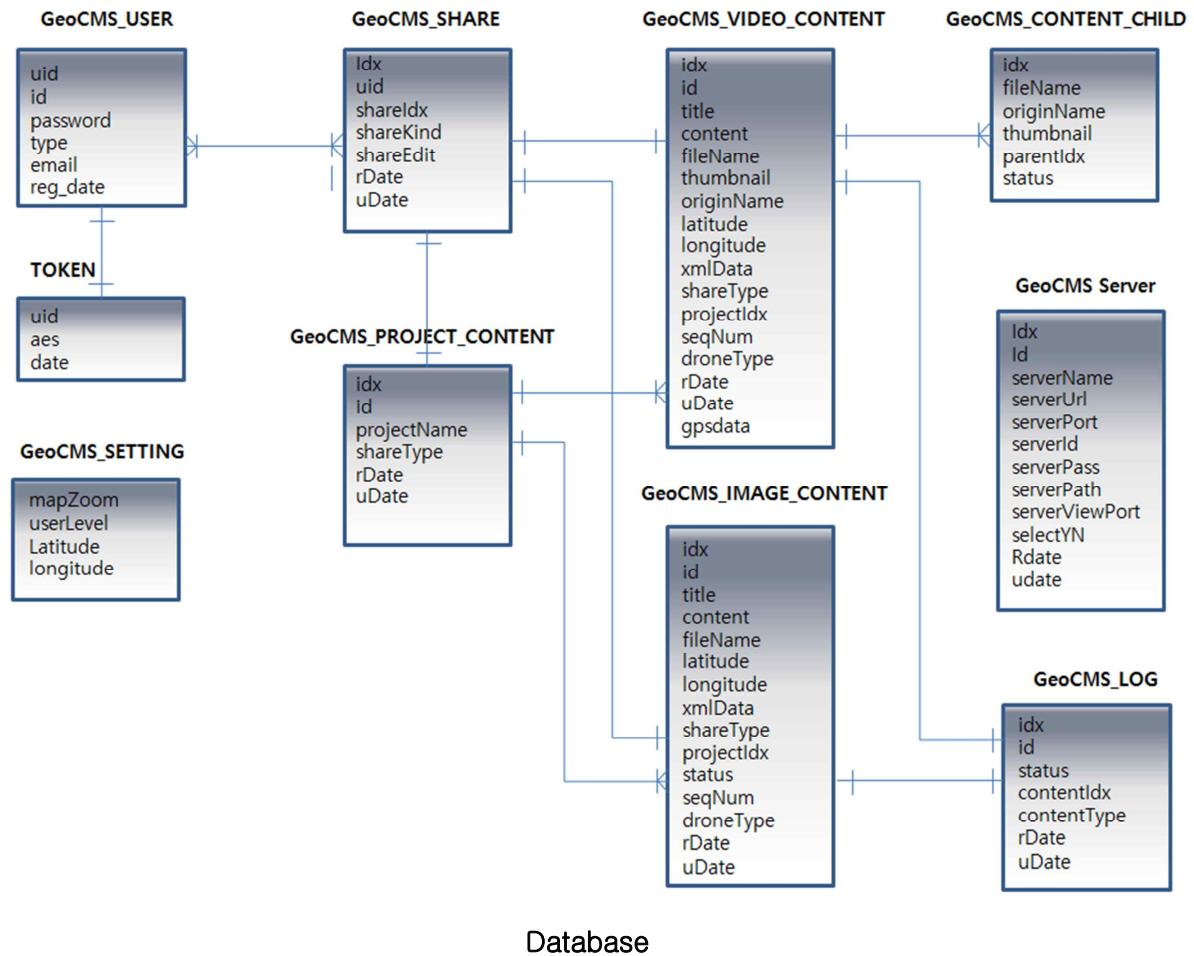
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2.3. Use case



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2.4. Database



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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

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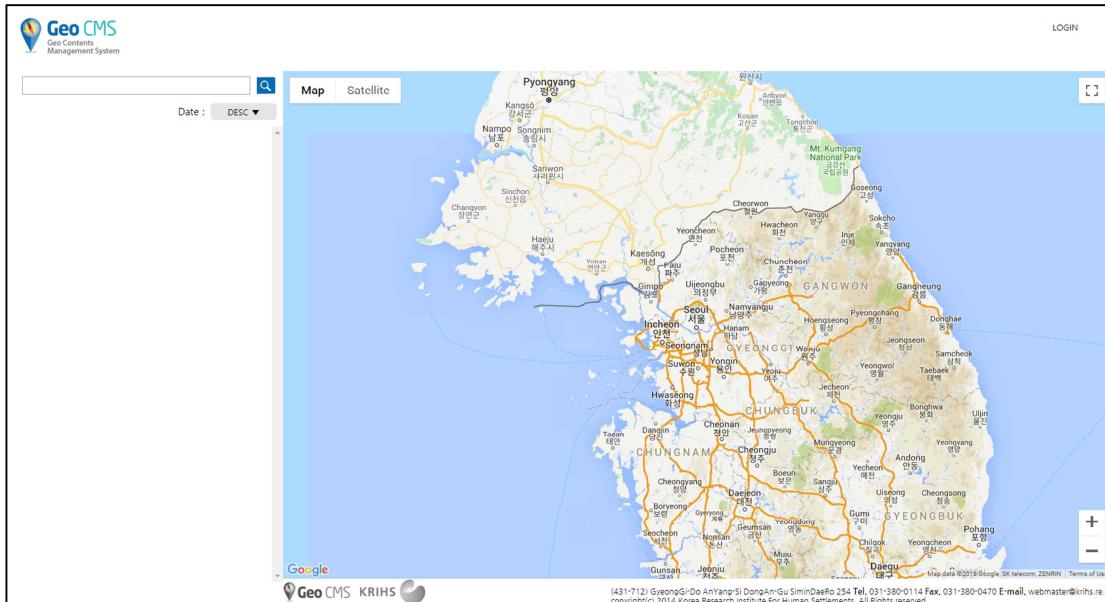
Type	Tag Name	Description
All	GeoCMS	Top-level Tag name
All	obj	Authored Annotation Information Tag
All	id	Annotation ID Tag
All	top	Top Position coordinate value
All	left	Left position coordinate value
Icon	width	Width value of icon
Icon	height	Height value of icon
Icon	src	Src (externally accessible 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)

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3. Using GeoCMS

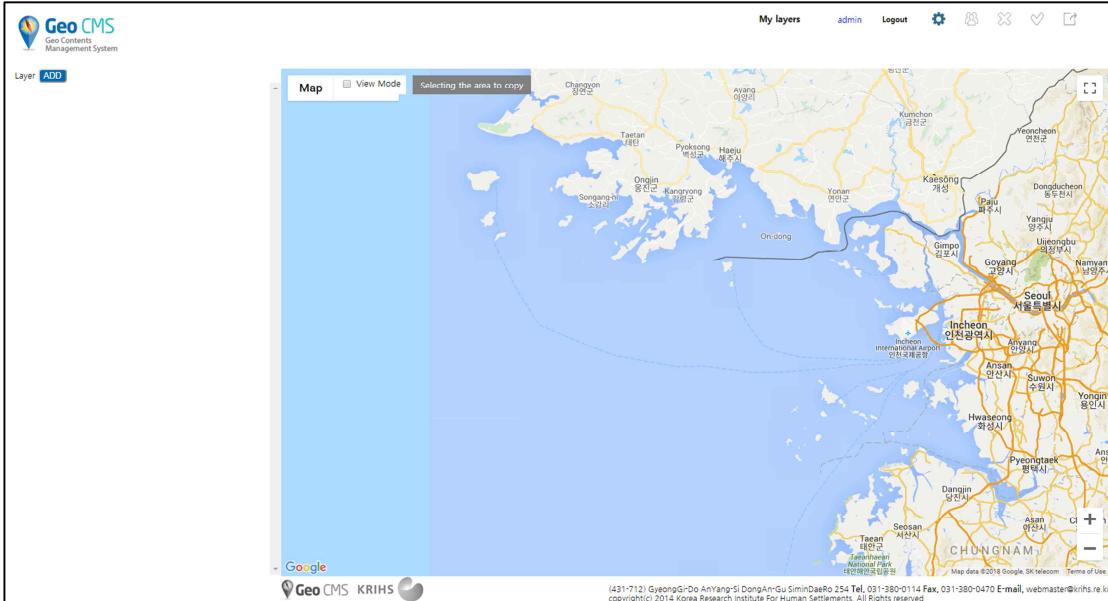
3.1. GeoCMS Manager

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



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- Log in as an administrator.



– Manager icon

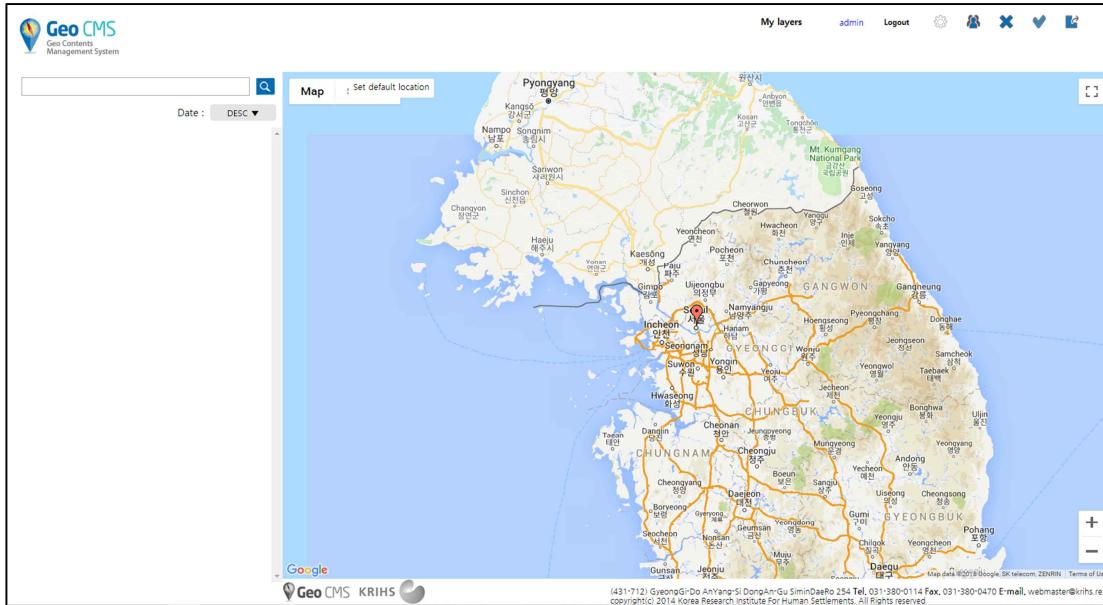


1. Settings: The administrator can set the Membership and Category tab and the main screen UI.
2. Membership Management: Manage the members' authority.
3. Cancel: Initializes the item that the administrator is editing.
4. Save: Save the changes made by the administrator.
5. Exit: The administrator clears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

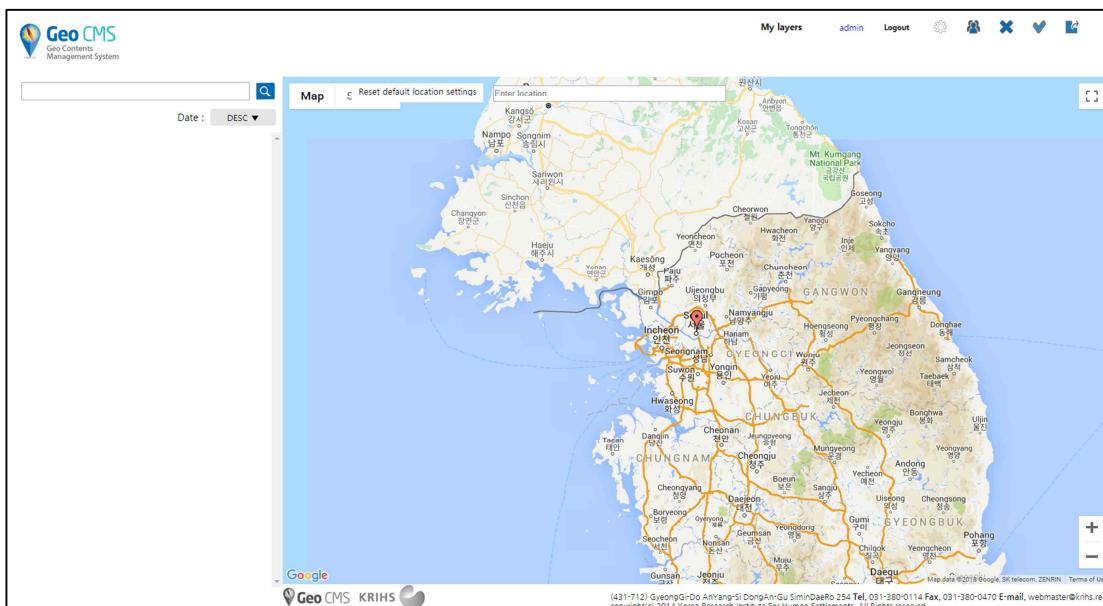
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3.1.1. Admin edit mode screen

- After pressing the setting button, the administrator edit mode screen
 - Set default location: You can set the default location of the map.

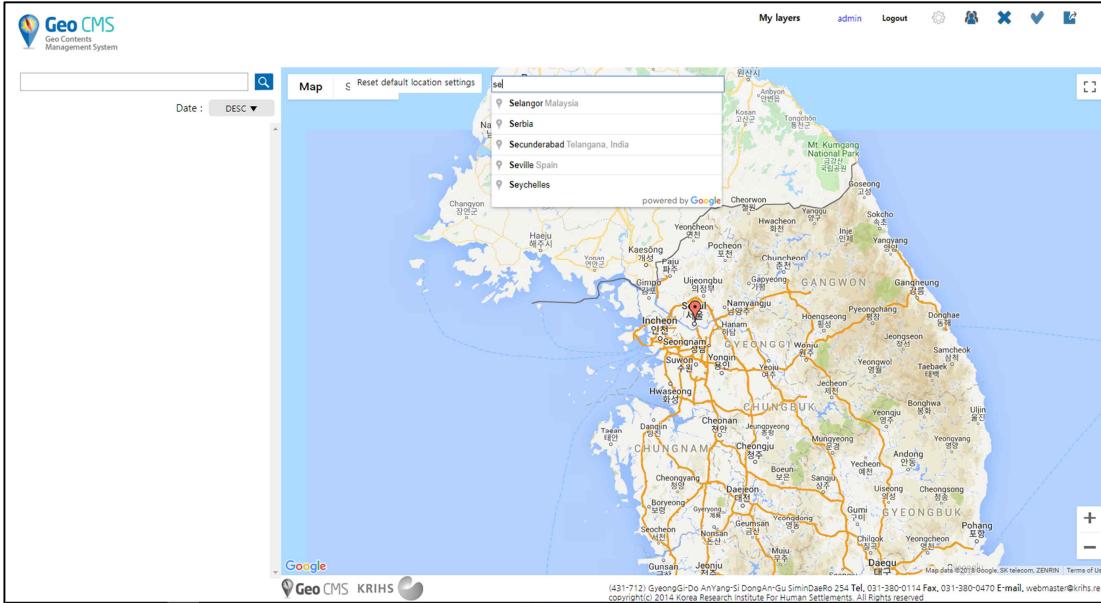


- Set initial map screen



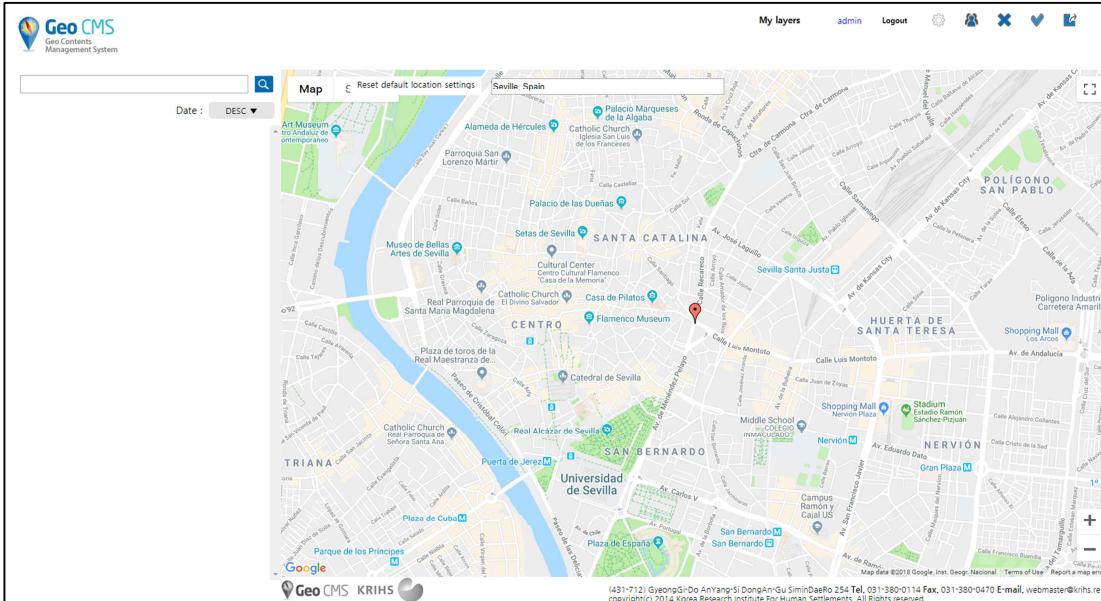
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- Search for location



- Select location

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



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3.1.2. User Management

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

MANAGE

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-- ▾

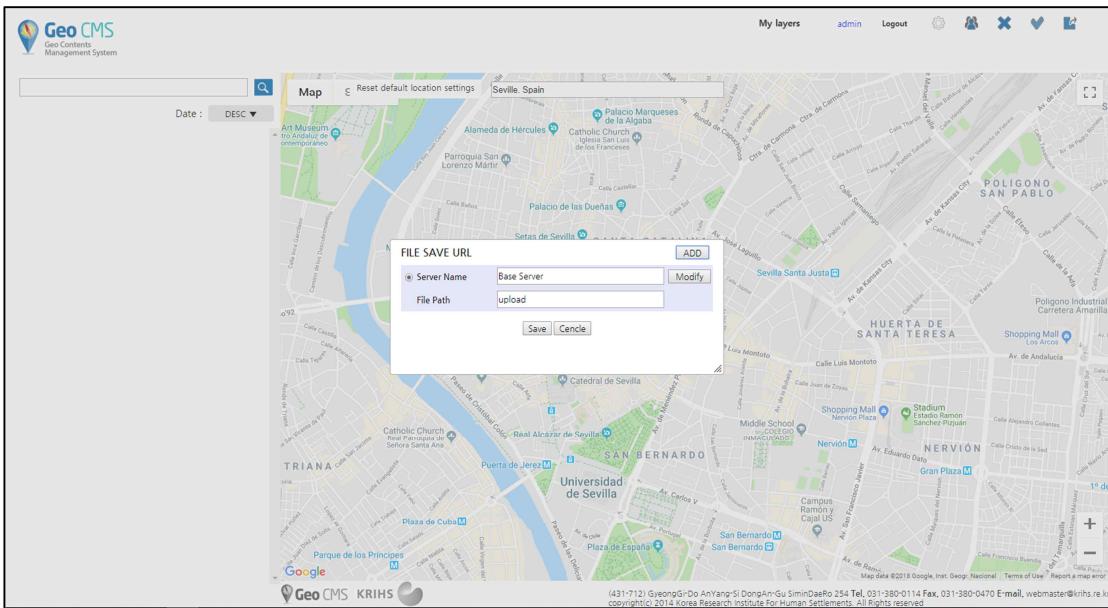
10 ▾ < 1 > save cancel

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3.1.3. Save Settings

- 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

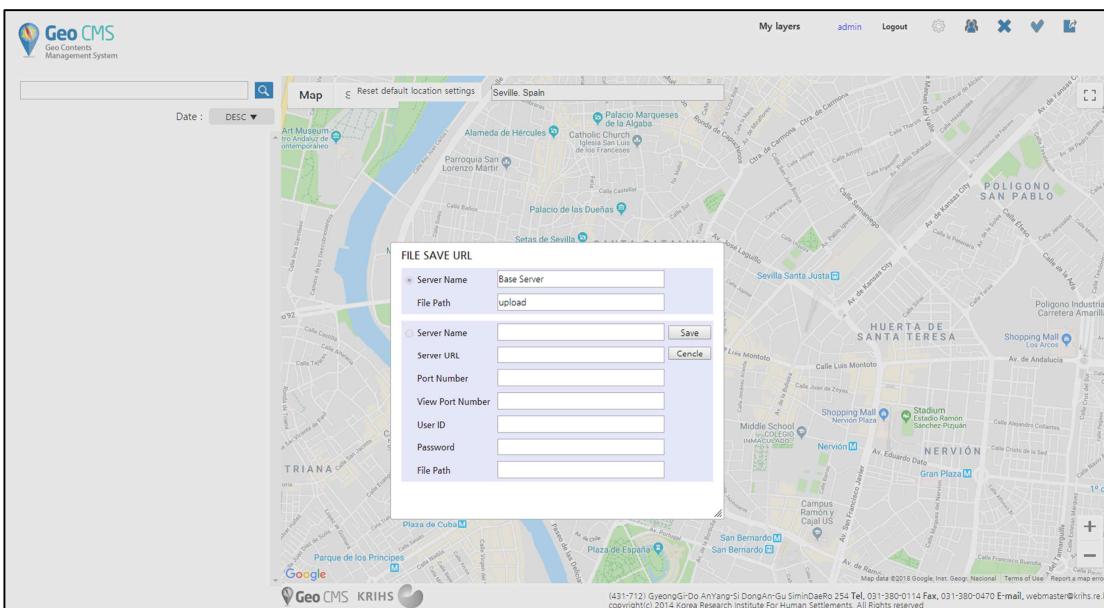
₩ src ₩ main ₩ webapp ₩ upload folder.



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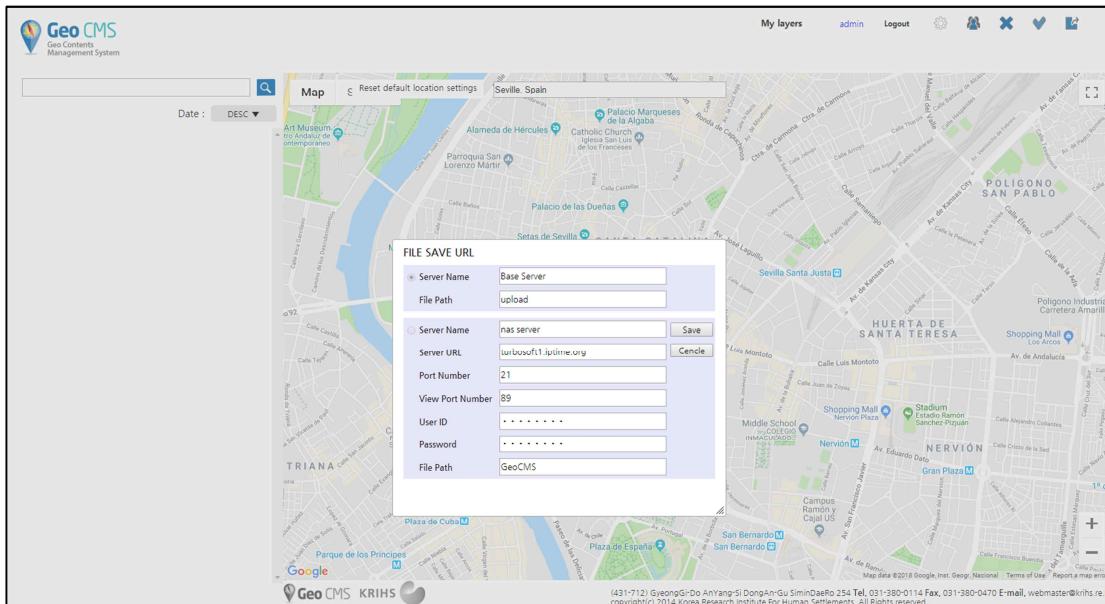
- Adding a server

- 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.

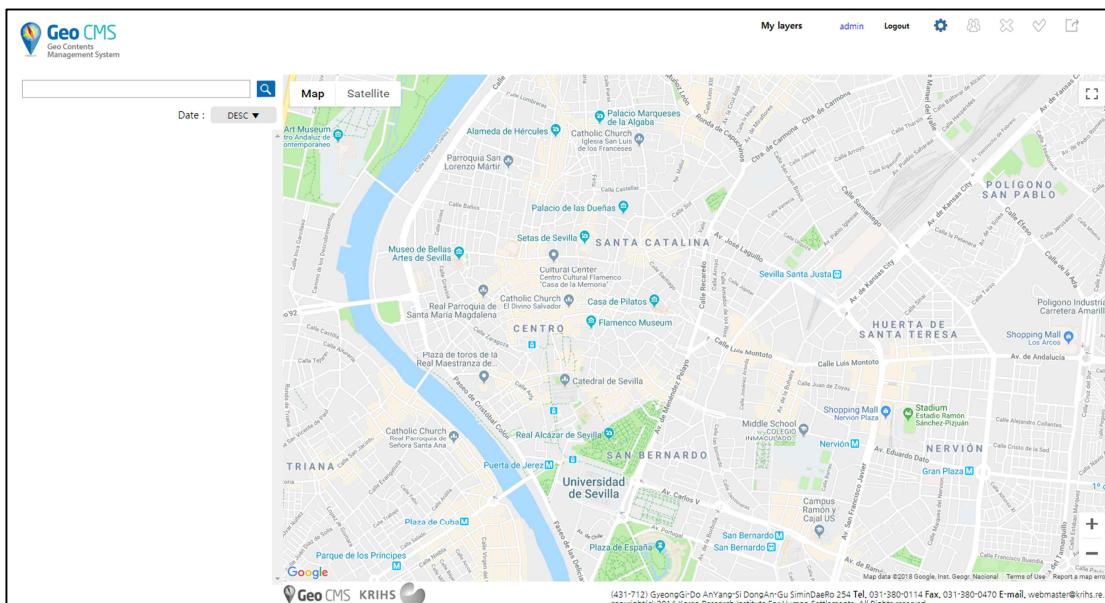


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- Server settings
 - After adding the server, select the server to be set as the default server and press the Save button to save the administrator setting.



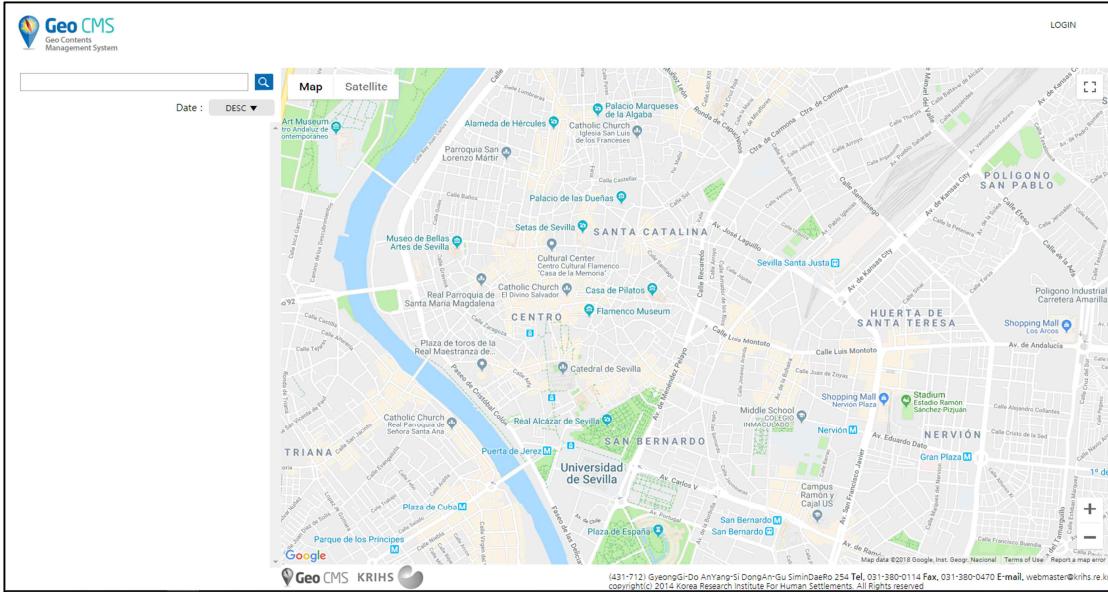
- Initial screen after changing UI



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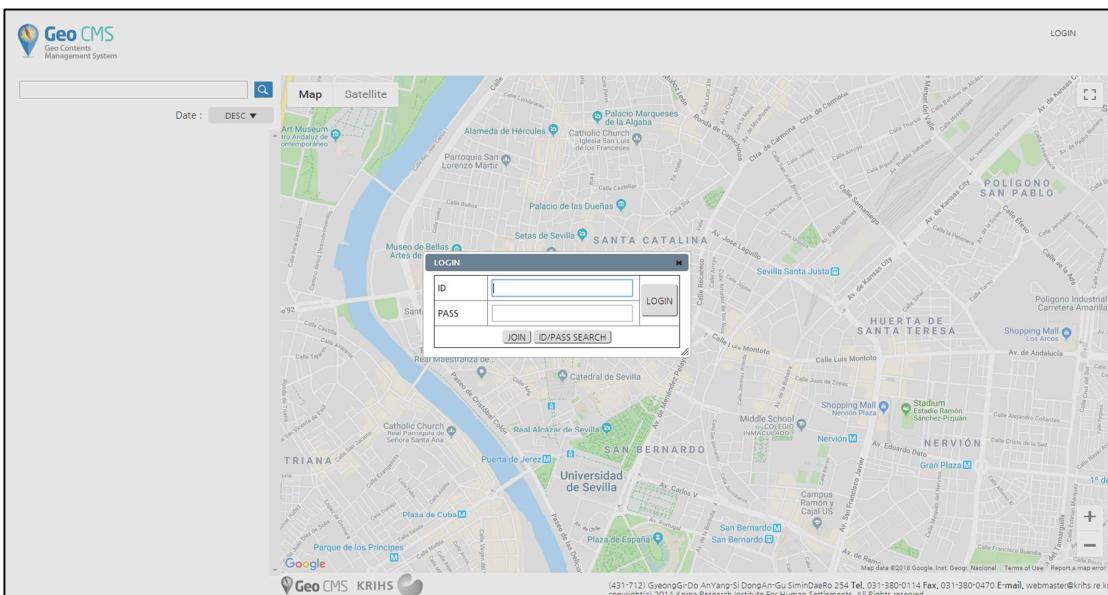
3.2. GeoCMS users

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



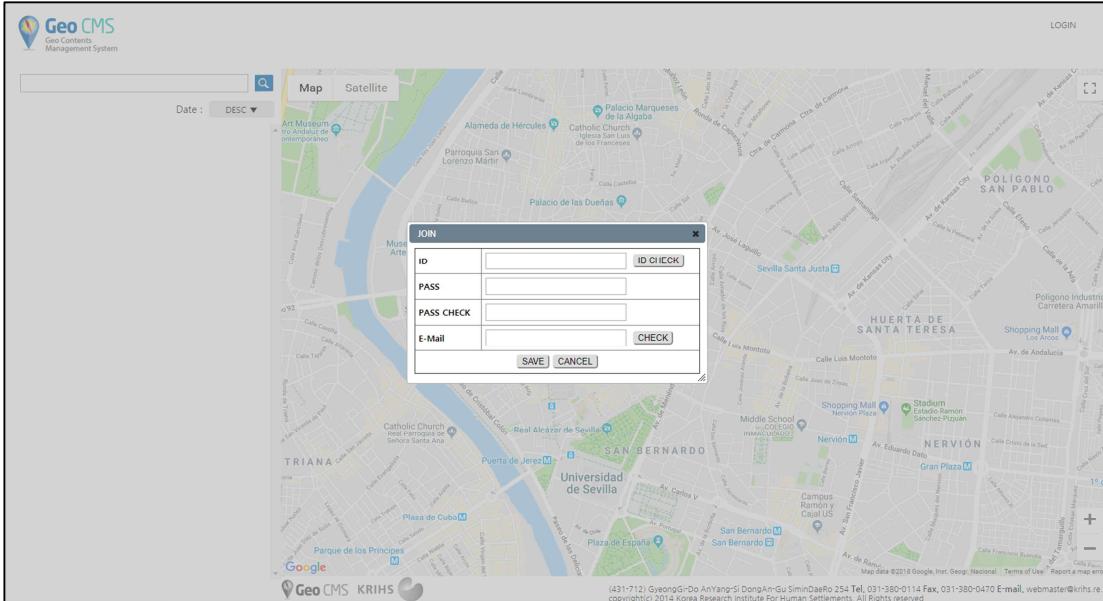
3.2.1. Sign Up

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

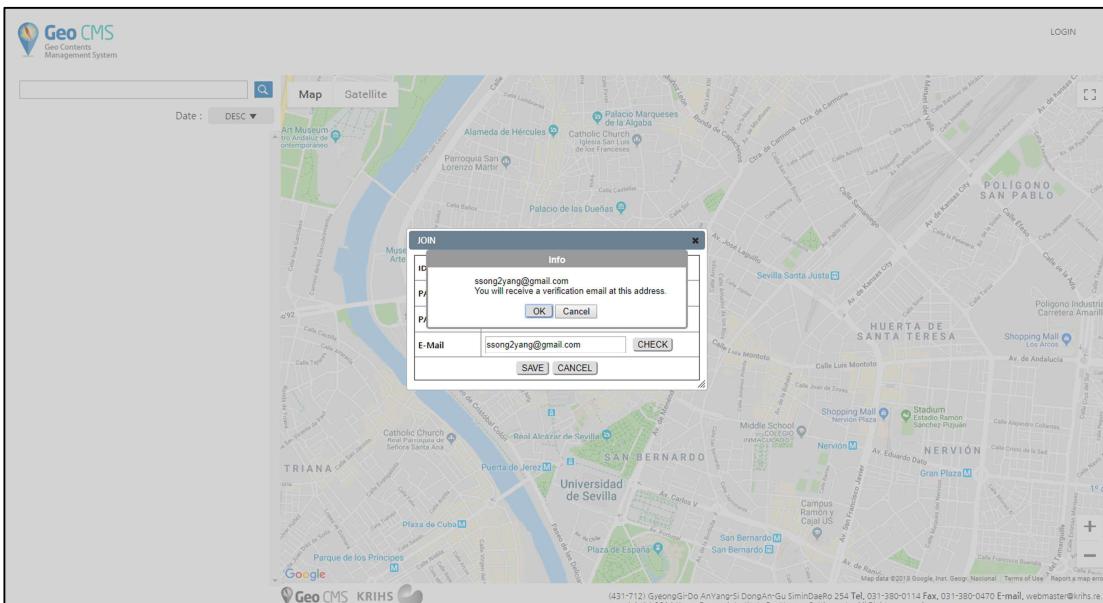


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- Click the 'JOIN' button to register.



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



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



3.2.2. Find ID / Password

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

A screenshot of the GeoCMS login interface. It has two input fields for 'ID' and 'PASS'. To the right of each field is a 'LOGIN' button. Below these are two large buttons: 'ID/PASS SEARCH' and 'JOIN'.

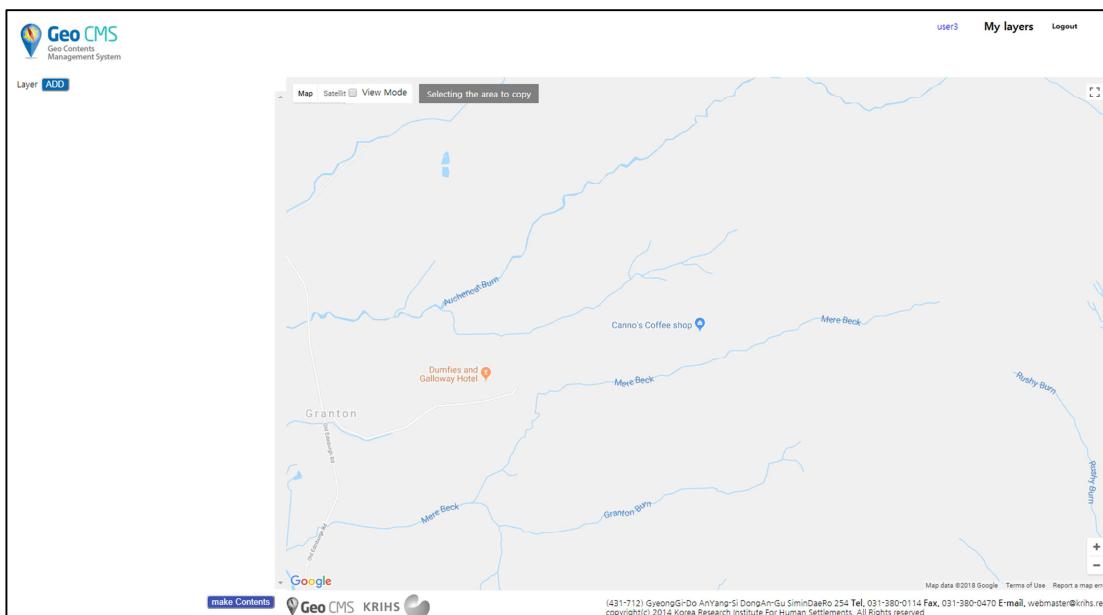
- If you press 'search ID' button, ID will be sent to the email you entered. If you press 'search PASS' button after inputting ID and email on the right side, give.

A screenshot of the 'FIND' search interface. It has two main sections: 'ID SEARCH' and 'PASSWORD SEARCH'. In the 'ID SEARCH' section, there is an 'E-Mail' input field and a 'search ID' button. In the 'PASSWORD SEARCH' section, there are two 'E-Mail' input fields and 'ID' and 'search PASS' buttons.

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3.2.3. Create layer

- My layer screen
 - This is the screen that is displayed when you log in.
 - A list of layers shared by your layer and other users will appear and the registered coordinates will be drawn on the right map.



- Creating a new layer
 - After clicking 'ADD' button, after setting tab name, layer name, and visibility, new layer is created.

Add Layer

Layer Name	
<input checked="" type="radio"/> private <input type="radio"/> public <input type="radio"/> sharing with friends	
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

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- 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.

The dialog box is titled "GeoCMS Manual". It contains a search interface with an "ID :" input field, a "search" button, and a "remove" button. Below this is a table with two columns: "ID" and "Edit authority". The "Edit authority" column includes a checkbox. At the bottom of the dialog are "ok" and "cancel" buttons.

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

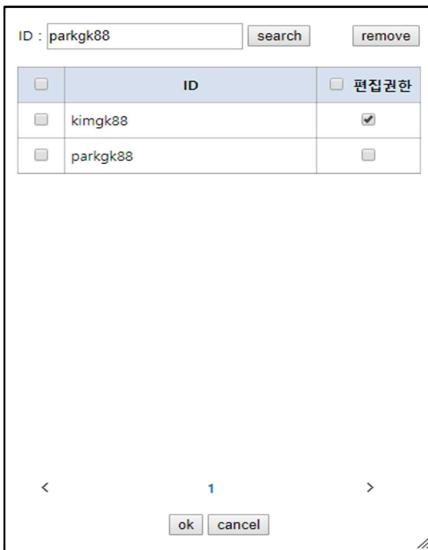
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- Add it after searching for the user to be published.

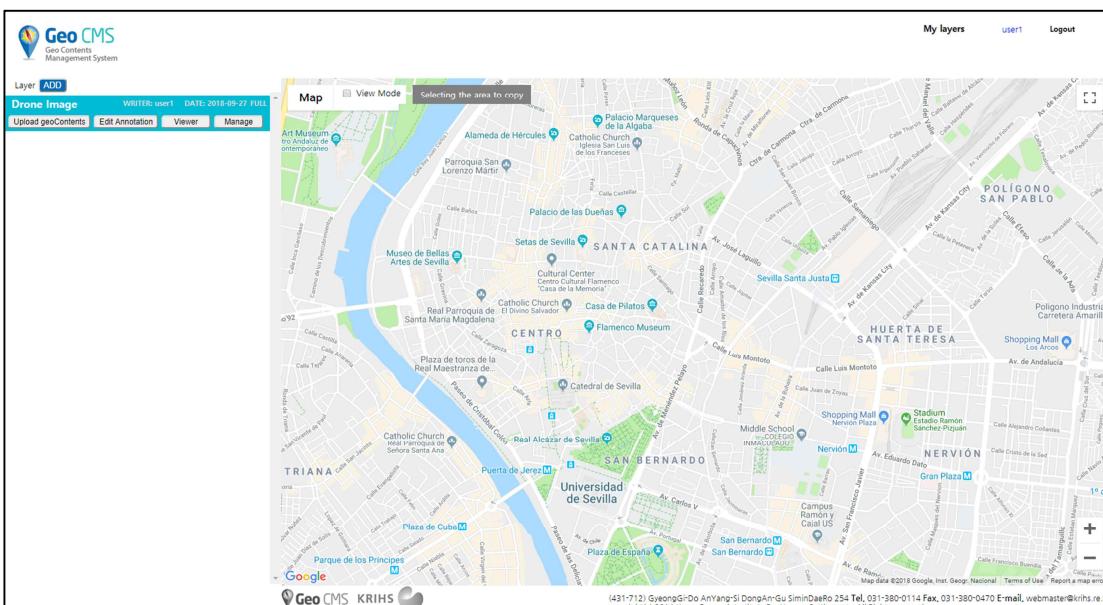


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- After granting the right of editing to a specific user, it is saved. (The shared user can view the contents of the layer created by the user, and the sharing user with editing authority can modify the authored object.)



- Completion of layer creation
 - After layer creation, it appears as a list on the left screen and content can be uploaded.

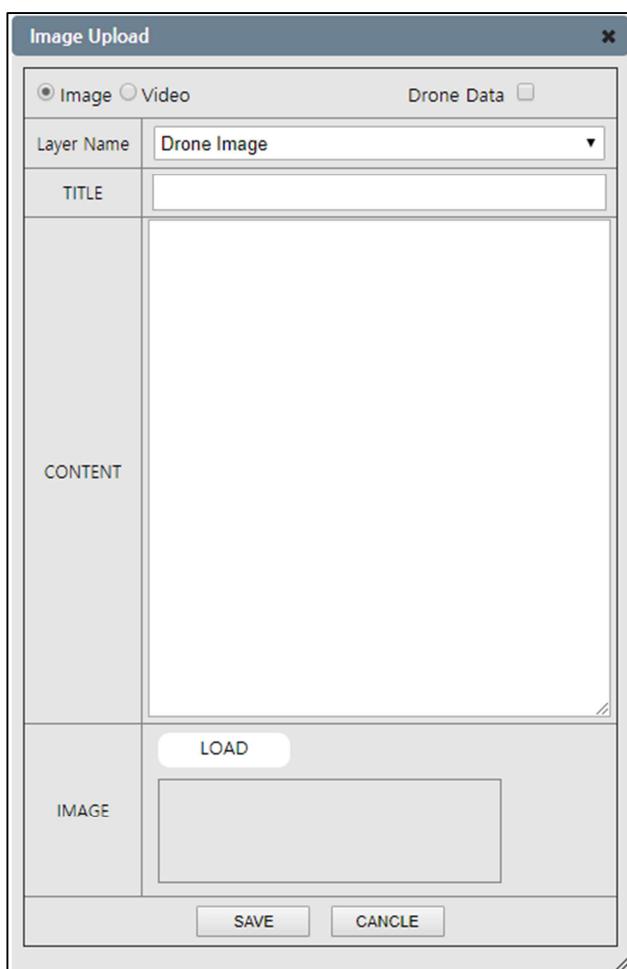


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3.2.4. Upload image

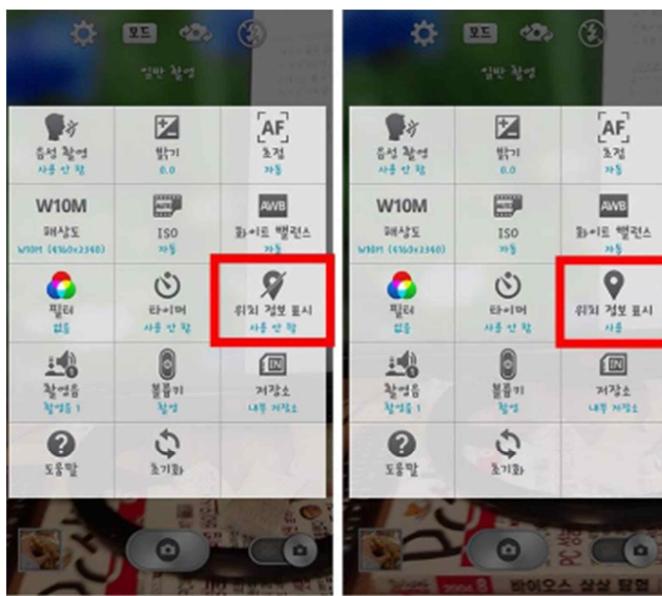
- Uploading images

- Click the 'Upload geoContents' button to upload the photos after creating the content. (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.)



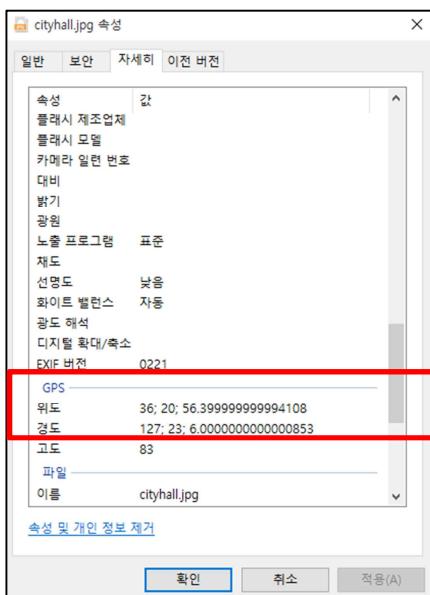
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- The location information is displayed only if the photo contains gps information. Before you take a picture, you need to set the location information in the settings of your smartphone to enable the location information. And when you use the camera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



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- 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.



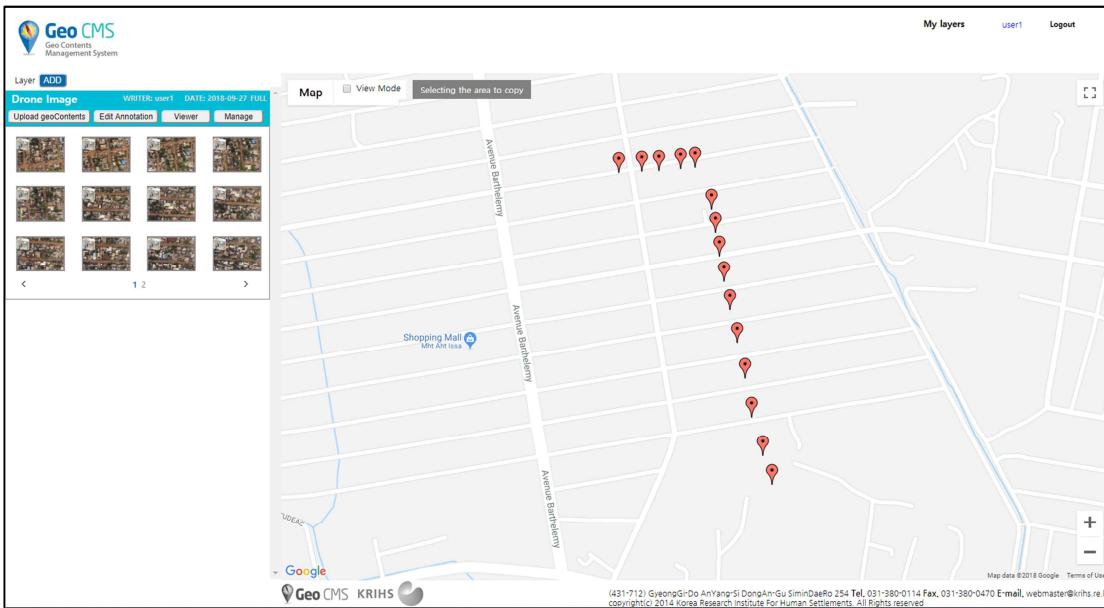
- pgw file example

The fifth line has longitude coordinates, and the sixth line has latitude coordinates.

```
0.00000033990993301096
0
0
-0.00000026949458523586
17.86015502501203400243
40.43544545377322663171
```

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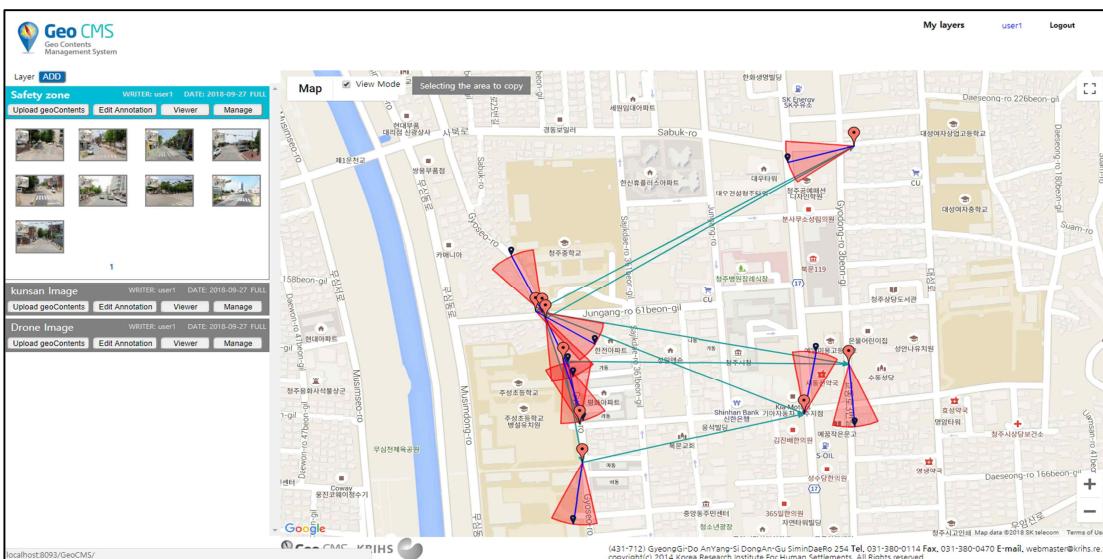
- After uploading a photo, a list of photos of the layer is displayed on the left list and the location information of the pictures of the active layer is displayed on the right map.



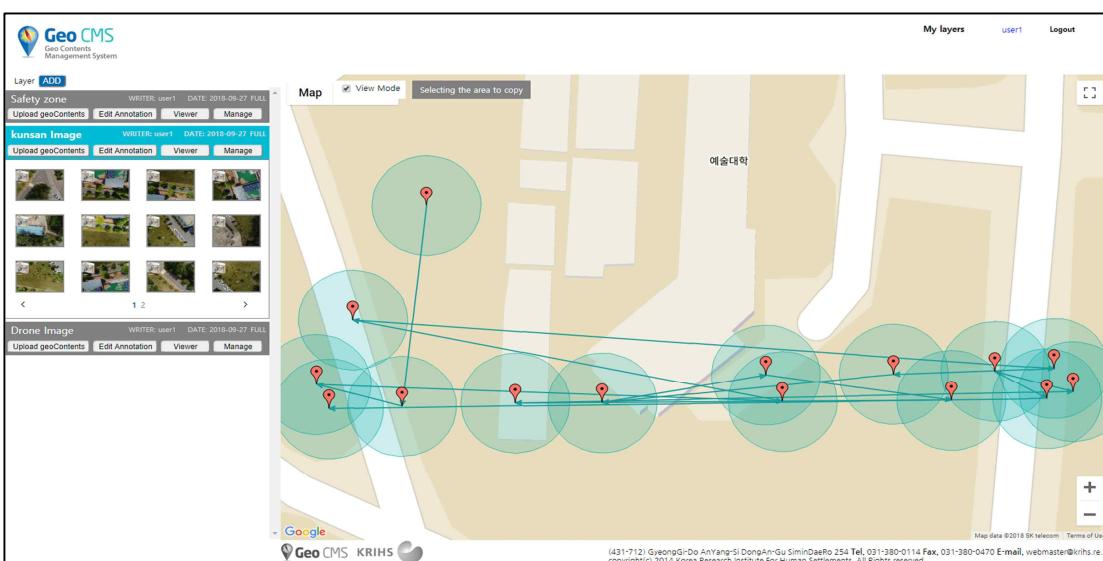
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3.2.5. View Mode

- 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



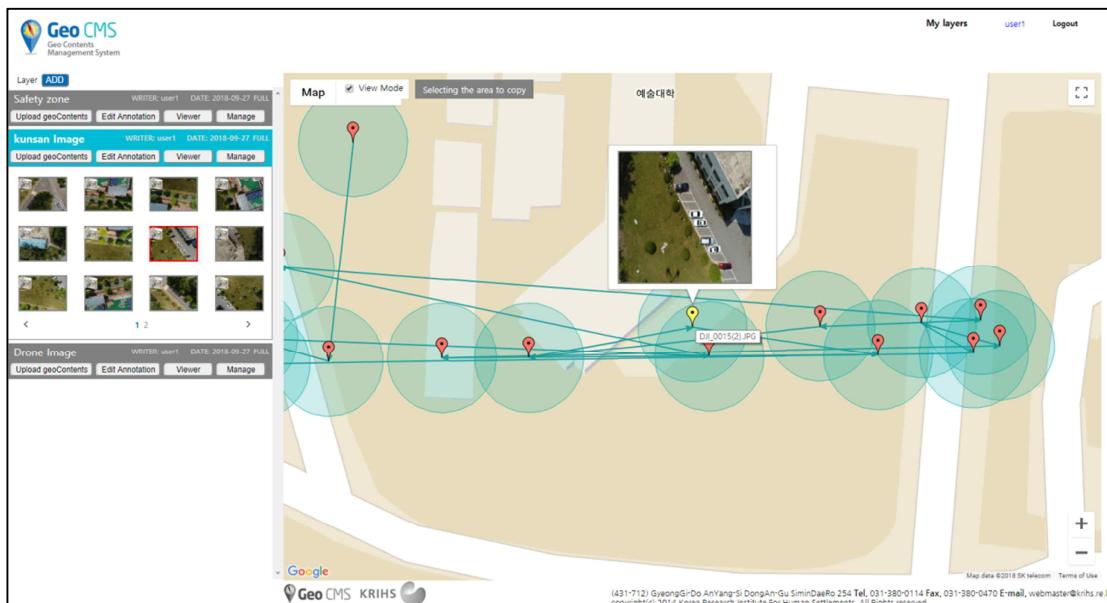
- Drone data



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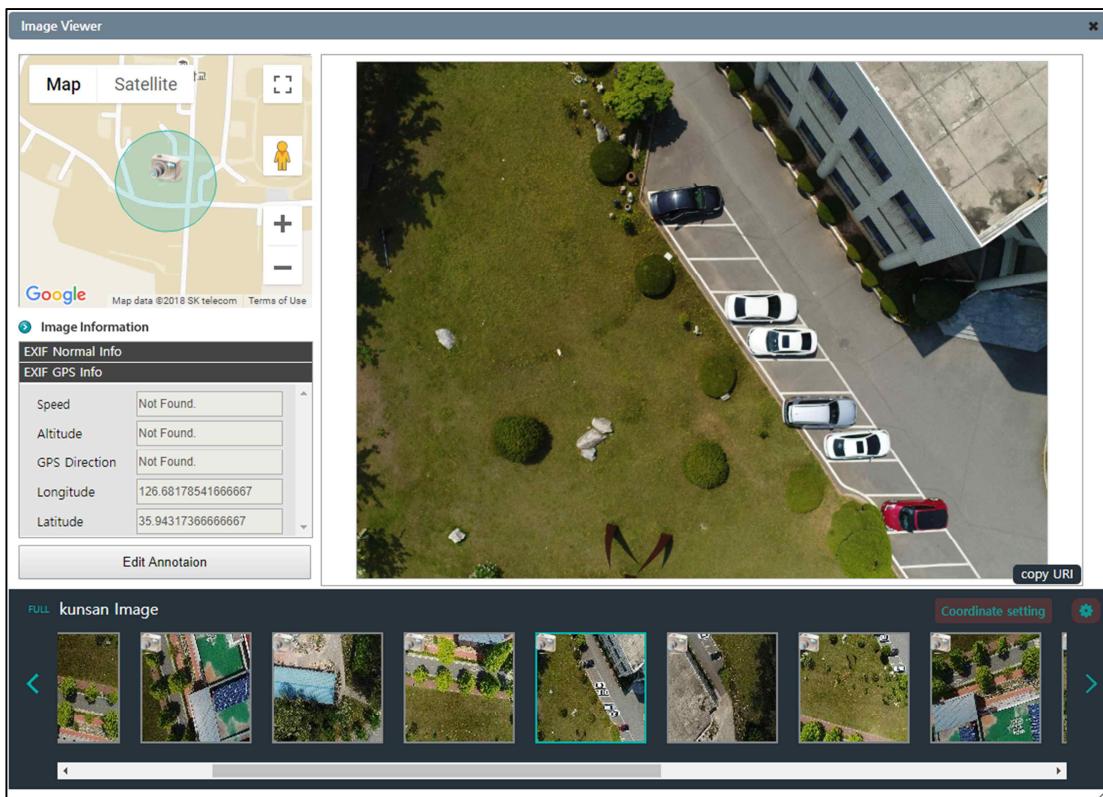
3.2.6. Image viewer

- When you click the picture on the left side, the position of the picture is displayed on the right side with a yellow marker, and it is displayed with a red frame on the left layer list. When you press the Edit Annotation button, the editor of the selected image appears as a popup window.
- When mouse over, corresponding photo and file name appear.



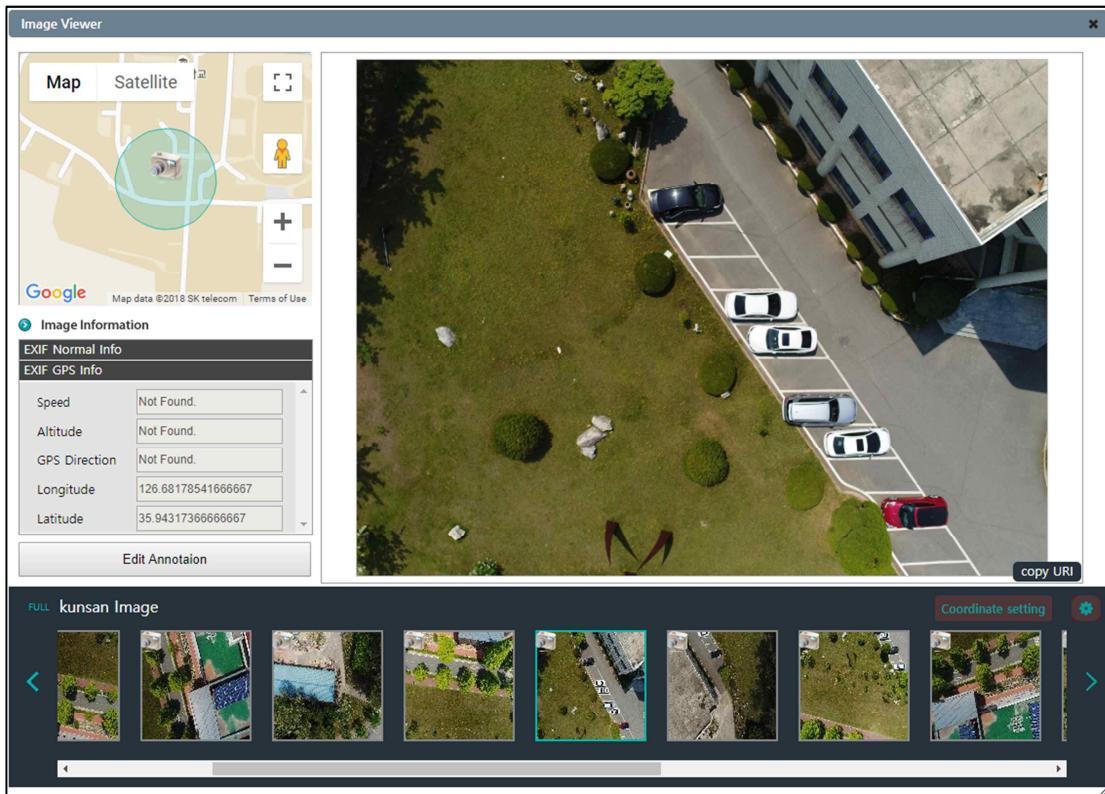
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- An Image Viewer window will appear, showing the picture when clicking the Marker or the Viewer button on the layer.
 - When clicking the Marker, the selected image is set as the main image and the corresponding image in the bottom image and movie list is displayed as a green frame.
 - When clicking the viewer, the first image in the layer is set as the main image and the corresponding image in the bottom image and video list is displayed as green frame.



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- In the Image Viewer window, the EXIF information (Image Information) and Map information of the corresponding photo, the radius, the image of the corresponding layer, and the video list are displayed together.

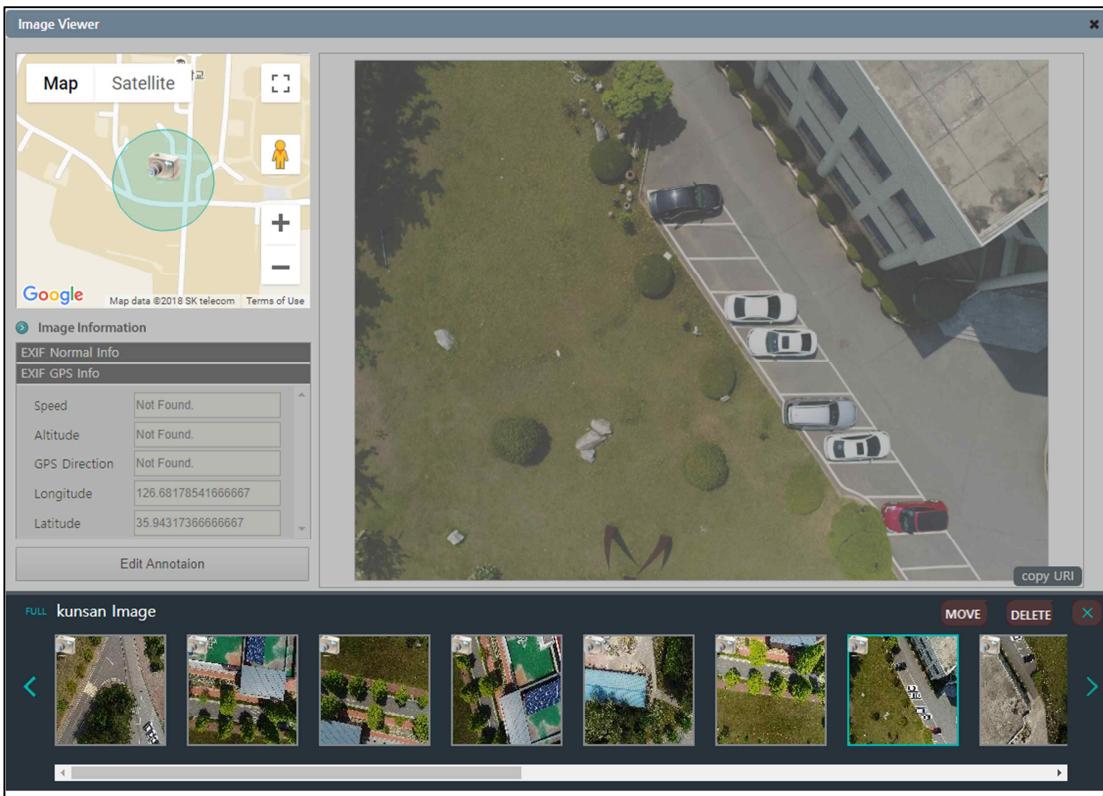


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3.2.6.1. Move and delete images

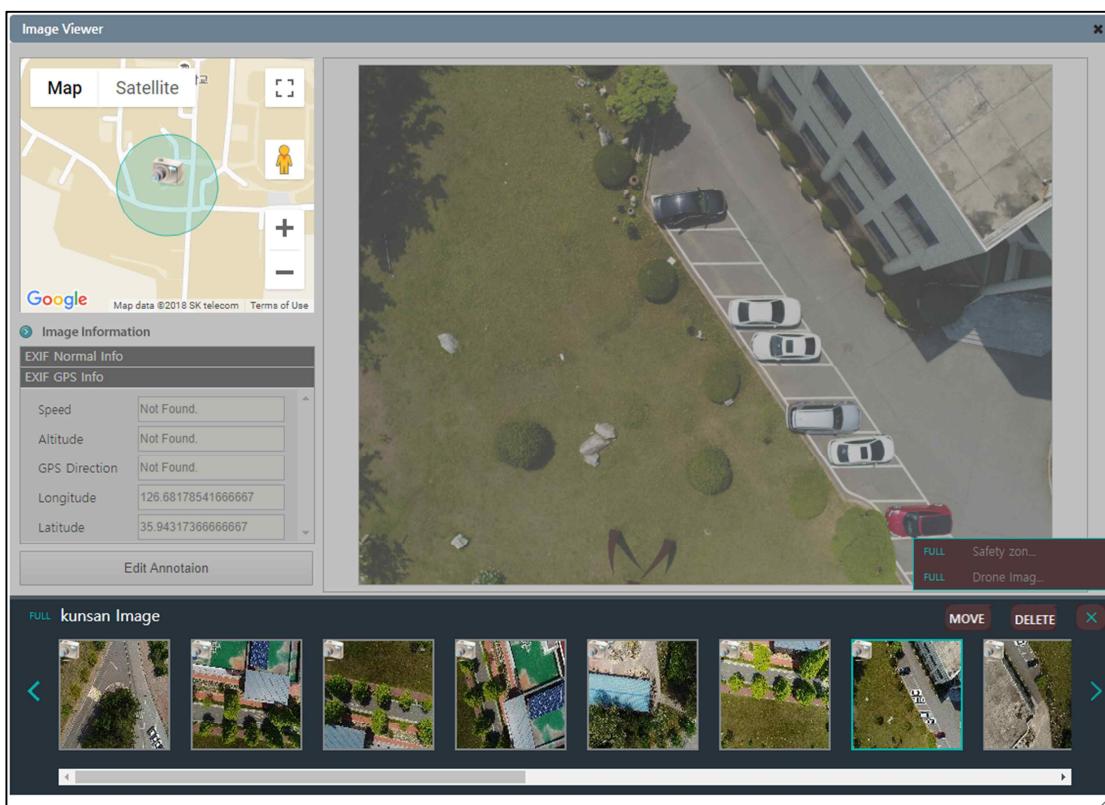
- When clicking the setting button on the lower right side, multiple images and movies can be selected and moved to another layer or deleted.

–  (Settings button) Click screen



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- After selecting an image or video, click the 'Move' button to display a list of layers that can be moved. When selecting a layer, the selected image and video are moved to that layer. When you click the 'Delete' button, the selected images and videos are deleted. (When the main image is moved, the main image is changed to the first data of the remaining image and video list. If there is no data in the layer, the notification window is opened and the window is closed.)



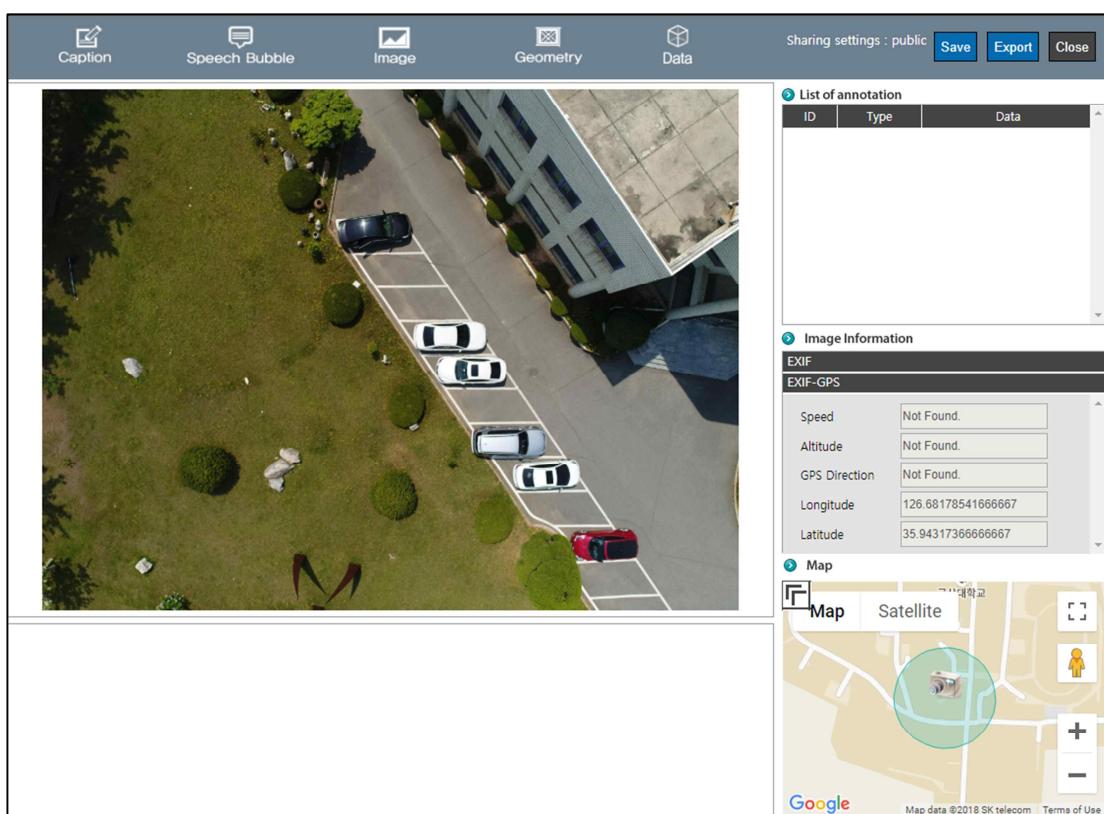
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3.2.7. Image editor

- Clicking the 'Edit Annotation' button on the left will open a window where you can edit the object in the picture.

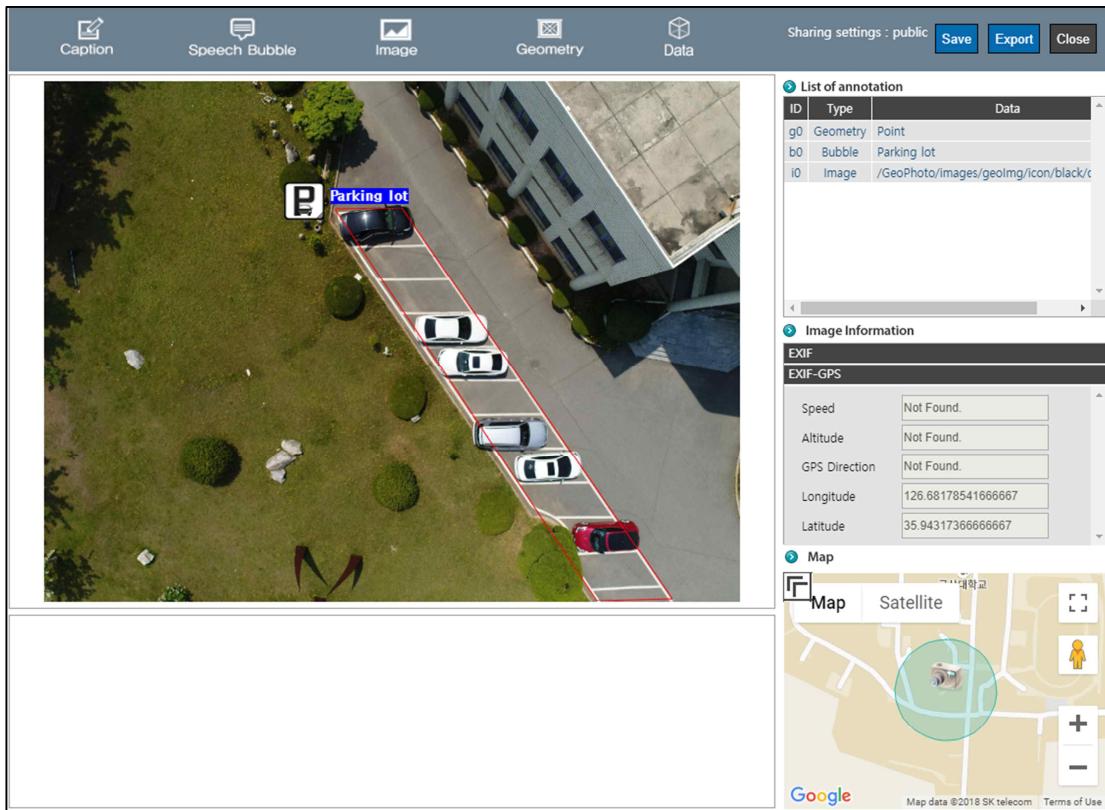
Zone settings and captioning, speech bubbles, and authoring information represented by icons

- 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



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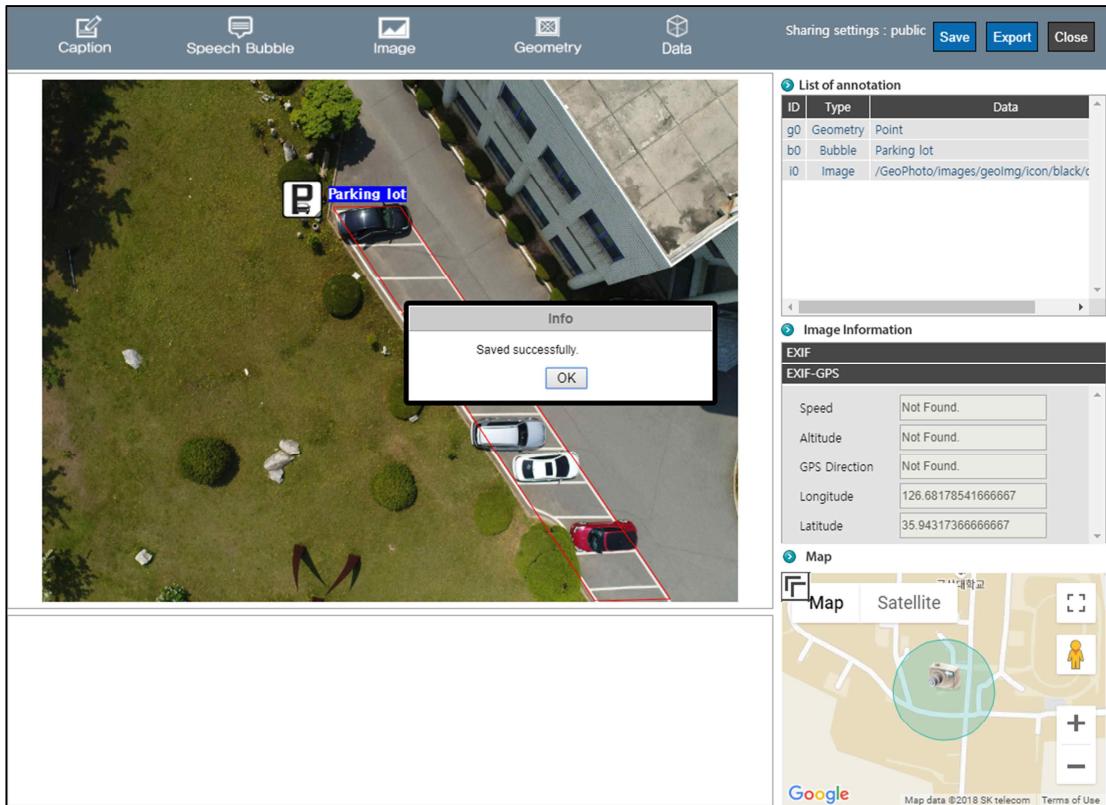
3.2.7.1. Apply additional icons to change additional presentation and data and sharing settings



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3.2.7.2. Save

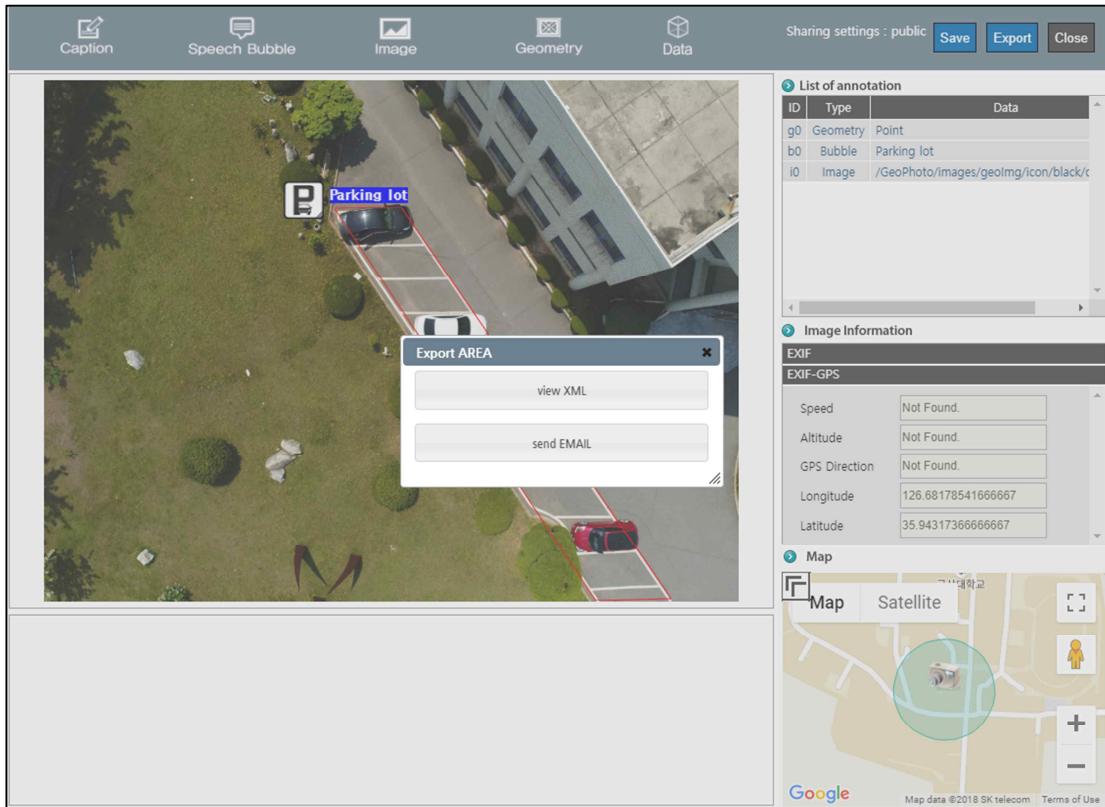
- When you click the Save button, your work will be saved in DB and XML.



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3.2.7.3. Export

- Check XML
- Email sharing



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- Check XML

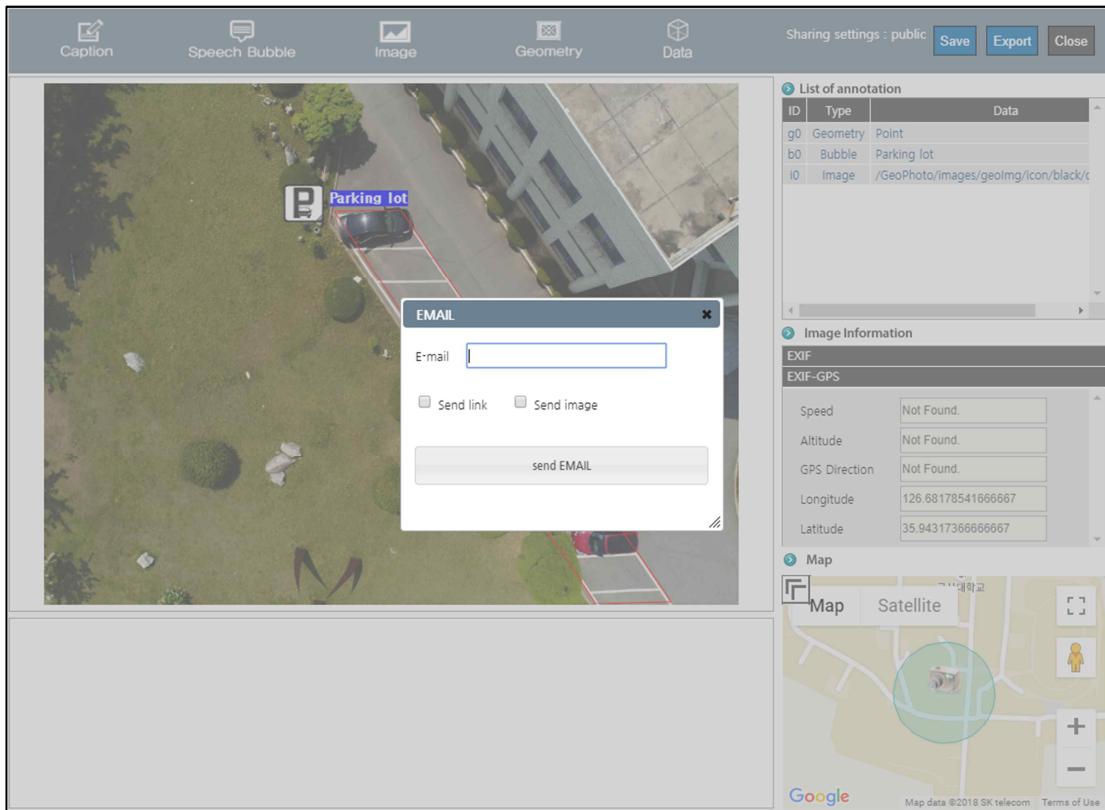
```

<?xml version="1.0" encoding="utf-8"?>
<GeoCMS>
<obj>
<id>g</id>
<top>136</top>
<left>332</left>
<xstr>333_599_676_400_332</xstr>
<ystr>139_538_536_136_137</ystr>
<linecolor>#f00</linecolor>
<backgroundcolor>#FF0000</backgroundcolor>
<type>point</type>
</obj>
<obj>
<id>b</id>
<top>102</top>
<left>327</left>
<href>false</href>
<underline>false</underline>
<italic>false</italic>
<bold>true</bold>
<fontsize>H3</fontsize>
<fontcolor>#ffffff</fontcolor>
<backgroundcolor>#0000ff</backgroundcolor>
<text>Parking lot</text>
</obj>
<obj>
<id>i</id>
<top>109</top>
<left>280</left>
<width>41px</width>
<height>39px</height>
<src>/GeoPhoto/images/geoImg/icon/black/d100.png</src>
</obj>
</GeoCMS>

```

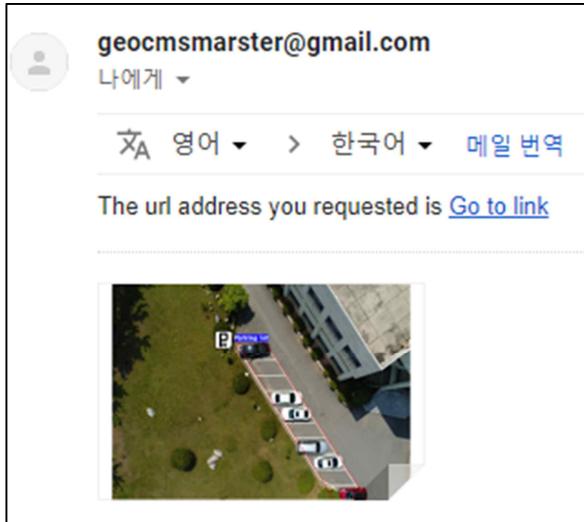
GeoCMS Manual	Project classification	Land Spatial Information Research Project
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- Email sharing
 - Click the 'SEND EMAIL' button to enter the email you want to share, then select Send Link and Send Image to share that link and image.

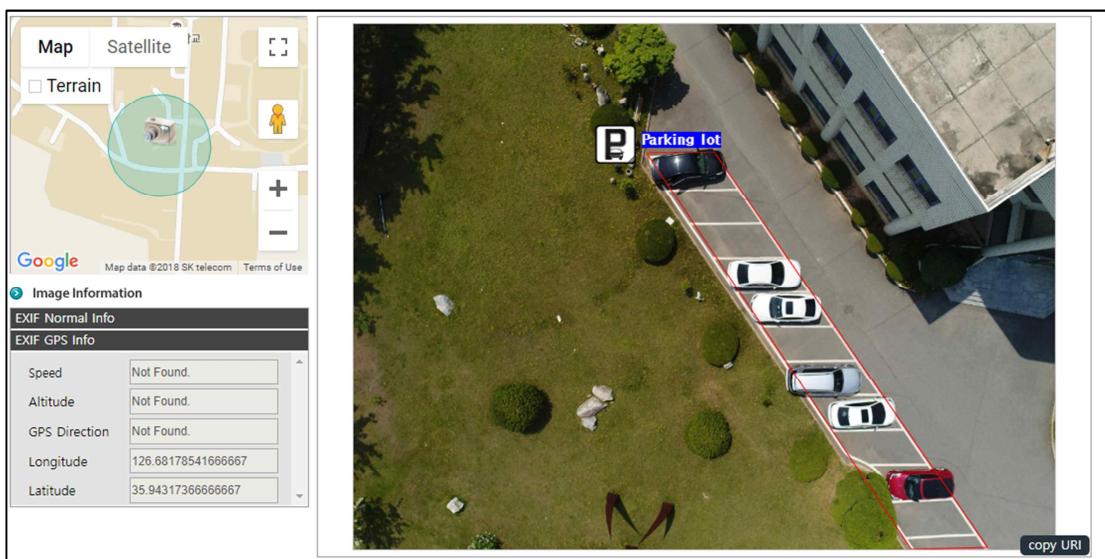


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- You can go to the link and check the image through the received e-mail.
 - Click the link button to display the corresponding image viewer.



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

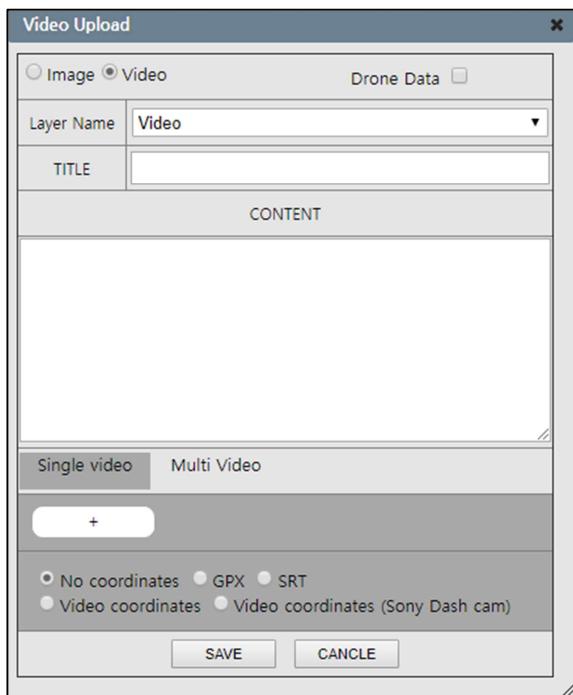


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3.2.8. Upload video

- Uploading videos

- Click the 'Upload geoContents' 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.



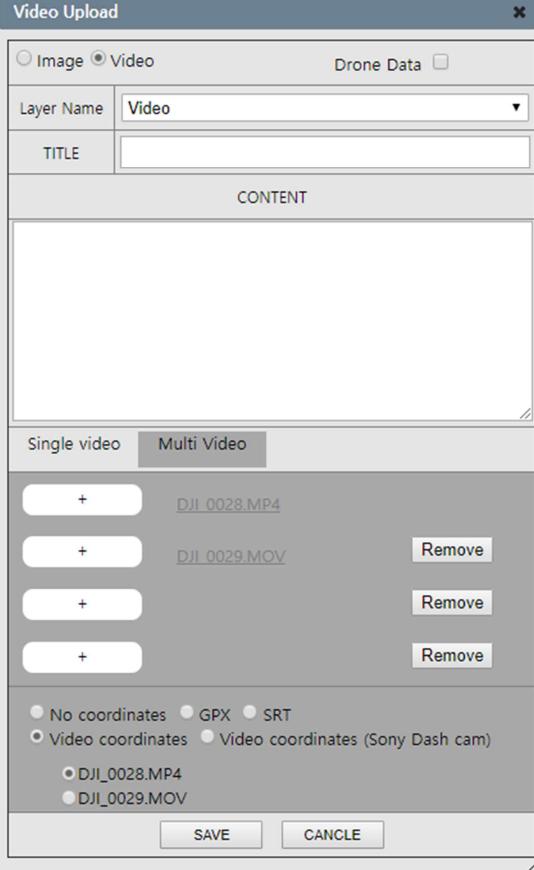
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- The gpx file and the srt file including the location information can be additionally registered by using the add button. The corresponding gpx and srt files are merged and stored in the order of the files.

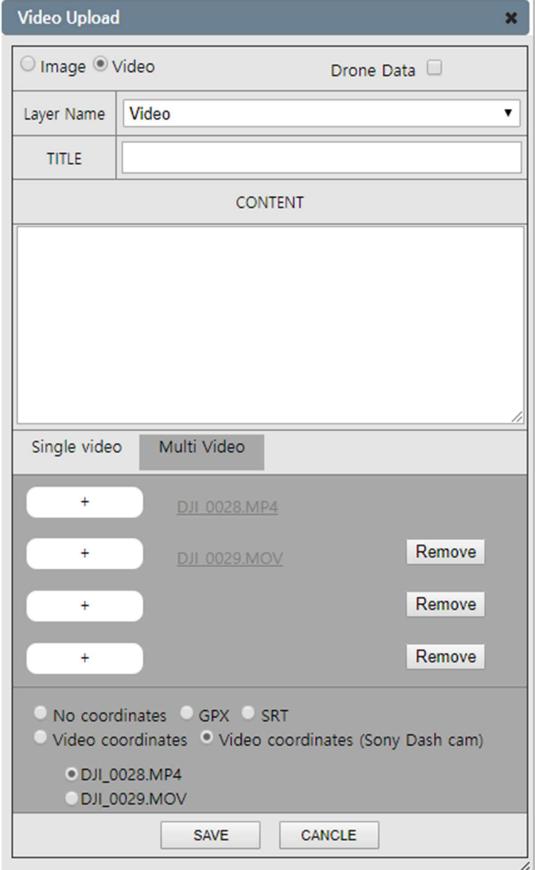
The screenshot shows the 'Video Upload' interface. The 'Image' radio button is selected. The 'Layer Name' dropdown is set to 'Video'. The 'Drone Data' checkbox is unchecked. The 'CONTENT' area is empty. Below it, there are tabs for 'Single video' (selected) and 'Multi Video'. A '+' button is available for adding files. Under the file selection area, there are two sets of radio buttons: 'No coordinates' (selected), 'GPX' (selected), and 'SRT'. There are also options for 'Video coordinates' and 'Video coordinates (Sony Dash cam)'. An 'Add' button is located next to the SRT radio button. At the bottom are 'SAVE' and 'CANCEL' buttons.

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- 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 shows the 'Video Upload' interface. At the top, there are radio buttons for 'Image' and 'Video' (selected), and a checkbox for 'Drone Data'. Below this, the 'Layer Name' is set to 'Video' and the 'TITLE' field is empty. The main area is labeled 'CONTENT'. At the bottom, there are tabs for 'Single video' (selected) and 'Multi Video'. Under 'Single video', there are two entries: '+ DJI_0028.MP4' and '+ DJI_0029.MOV'. Each entry has a 'Remove' button to its right. Below these, there are radio buttons for coordinate types: 'No coordinates', 'GPX', 'SRT', 'Video coordinates' (selected), and 'Video coordinates (Sony Dash cam)'. Under 'Video coordinates', the options 'DJI_0028.MP4' and 'DJI_0029.MOV' are listed. At the very bottom are 'SAVE' and 'CANCEL' buttons.



This screenshot shows the same 'Video Upload' interface as the first one, but with a key difference: the 'Video coordinates (Sony Dash cam)' radio button is now selected under the coordinate type section. All other elements, including the file list and bottom buttons, remain identical to the first screenshot.

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- 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.gpstml.com">
<text>Geo Studio Technology 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>

```

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- The SRT file

The subtitle file containing the subtitle information is integrated with the reproduction time and the GPS data information. The GPS information is in the order of latitude and longitude.

```

1
00:00:01,000 --> 00:00:02,000
HOME (-56.0806,-15.5899) 2016.10.06 13:21:51
GPS (-56.0806,-15.5899,10) BAROMETER:0.0 ULTRASONIC:0.1
ISO:100 Shutter:1000 EV:-1/3 Fnum:F2.8

2
00:00:02,000 --> 00:00:03,000
HOME (-56.0806,-15.5899) 2016.10.06 13:21:52
GPS (-56.0806,-15.5899,10) BAROMETER:0.0 ULTRASONIC:0.1
ISO:100 Shutter:1000 EV:-1/3 Fnum:F2.8

3
00:00:03,000 --> 00:00:04,000
HOME (-56.0806,-15.5899) 2016.10.06 13:21:53
GPS (-56.0806,-15.5899,10) BAROMETER:0.0 ULTRASONIC:0.1
ISO:100 Shutter:1000 EV:-1/3 Fnum:F2.8

4
00:00:04,000 --> 00:00:05,000
HOME (-56.0806,-15.5899) 2016.10.06 13:21:54
GPS (-56.0806,-15.5899,10) BAROMETER:0.0 ULTRASONIC:0.1
ISO:100 Shutter:1000 EV:-1/3 Fnum:F2.8

5
00:00:05,000 --> 00:00:06,000
HOME (-56.0806,-15.5899) 2016.10.06 13:21:55
GPS (-56.0806,-15.5899,10) BAROMETER:0.0 ULTRASONIC:0.1
ISO:100 Shutter:1000 EV:-1/3 Fnum:F2.8

6
00:00:06,000 --> 00:00:07,000
HOME (-56.0806,-15.5899) 2016.10.06 13:21:56
GPS (-56.0806,-15.5899,10) BAROMETER:0.0 ULTRASONIC:0.1
ISO:100 Shutter:1000 EV:-1/3 Fnum:F2.8

7
00:00:07,000 --> 00:00:08,000
HOME (-56.0806,-15.5899) 2016.10.06 13:21:57
GPS (-56.0806,-15.5899,9) BAROMETER:0.1 ULTRASONIC:0.2
ISO:100 Shutter:1000 EV:-1/3 Fnum:F2.8

```

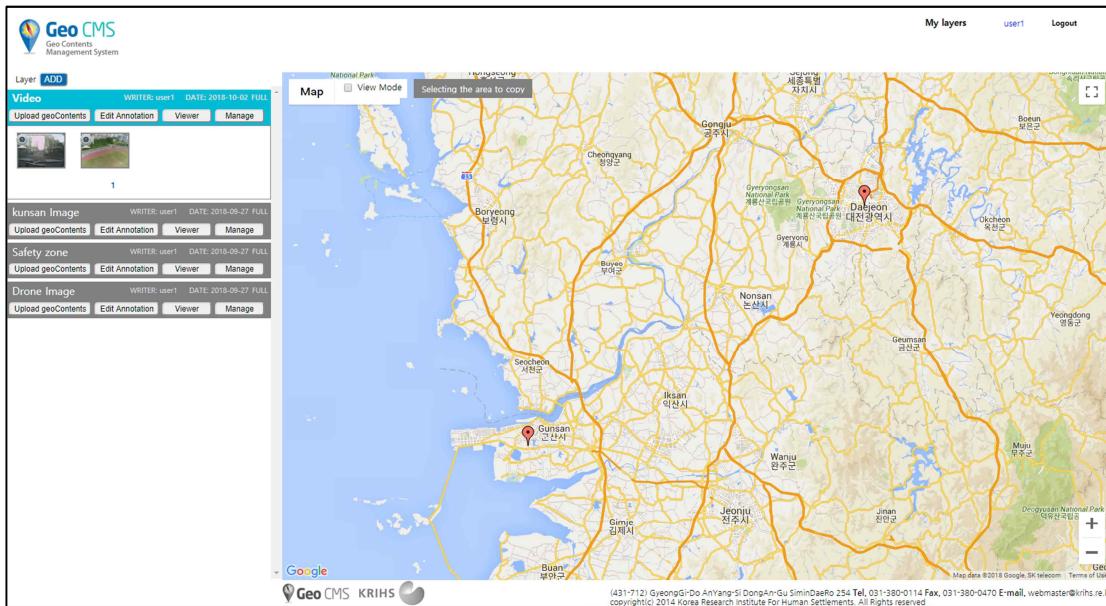
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- Video coordinates extract the GPS data and date information using exiftool to save the coordinate information. GPS information is divided into GPS Latitude and GPS Longitude.

GPS Date Time	:	2016:11:26 13:29:54Z
GPS Latitude	:	4 deg 22' 12.24" N
GPS Longitude	:	18 deg 33' 8.05" E
GPS Speed	:	21.42
GPS Speed Ref	:	km/h
GPS Track	:	189.3
GPS Track Ref	:	True North
GPS Altitude	:	3511.72 m
GPS Date Time	:	2016:11:26 13:29:55Z
GPS Latitude	:	4 deg 22' 12.03" N
GPS Longitude	:	18 deg 33' 8.01" E
GPS Speed	:	25.812
GPS Speed Ref	:	km/h
GPS Track	:	188.56
GPS Track Ref	:	True North
GPS Altitude	:	3509.801 m
GPS Date Time	:	2016:11:26 13:29:56Z
GPS Latitude	:	4 deg 22' 11.80" N
GPS Longitude	:	18 deg 33' 7.96" E

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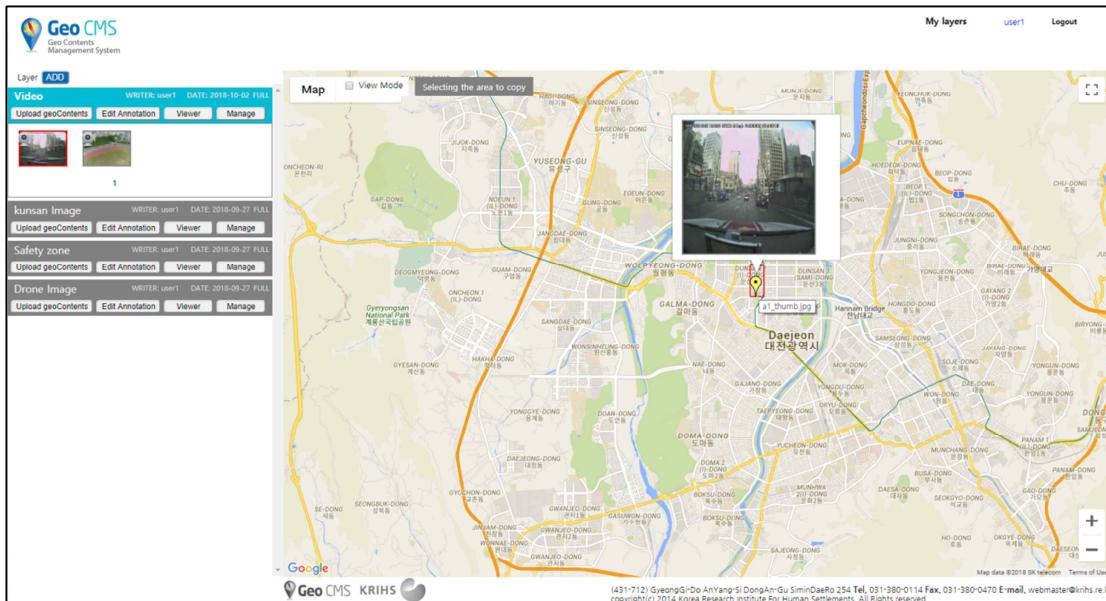
- After uploading the video, the thumbnail image of the corresponding video will appear in the project list on the left list, and the location information corresponding to the first position of the gpx file will be displayed on the right map.



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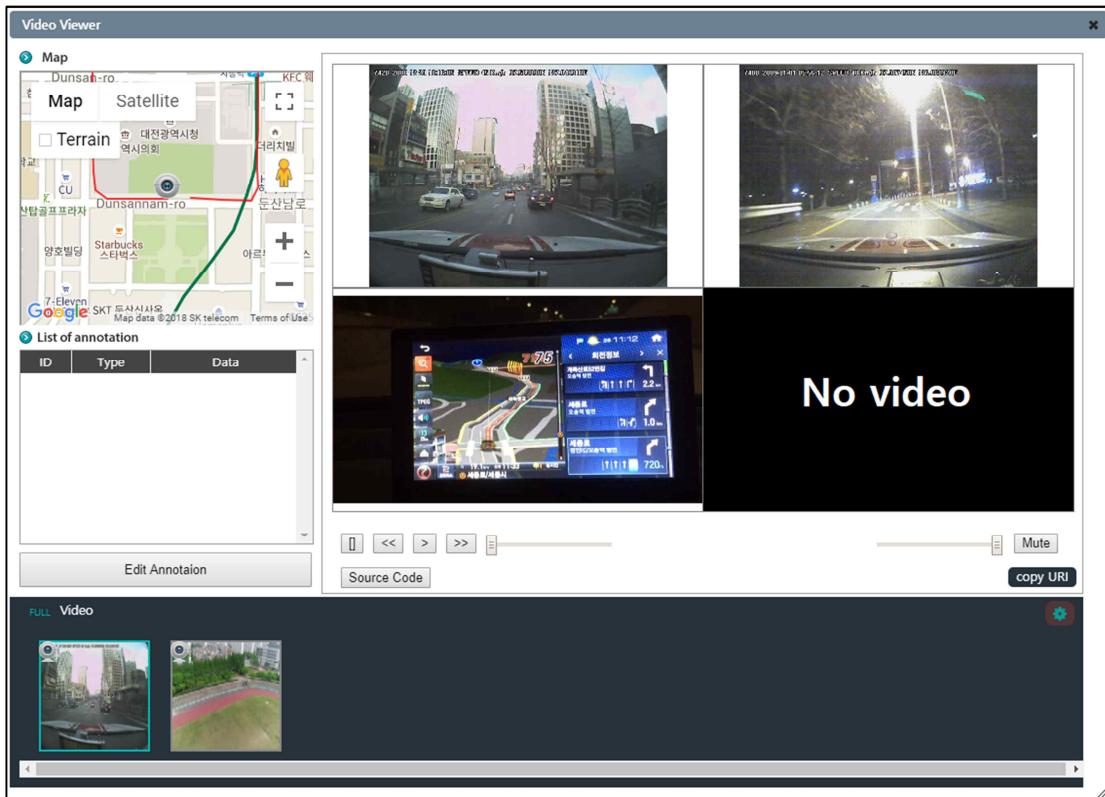
3.2.9. Video Viewer

- 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.
- If you press the Edit Annotation button, the editor of the selected movie will appear as a popup window.



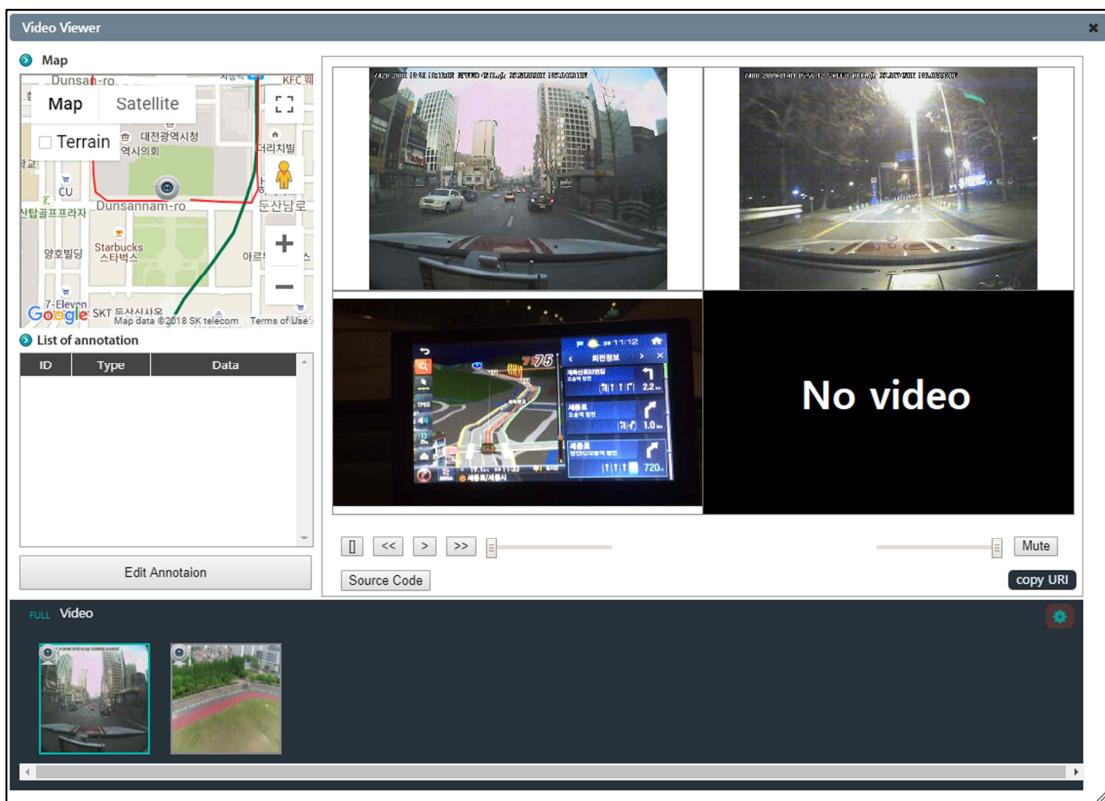
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- When clicking the marker, a window showing the video is displayed.
 - The selected movie is set as the main movie, and the thumbnail image of the movie in the bottom image and movie list is represented by a green frame.



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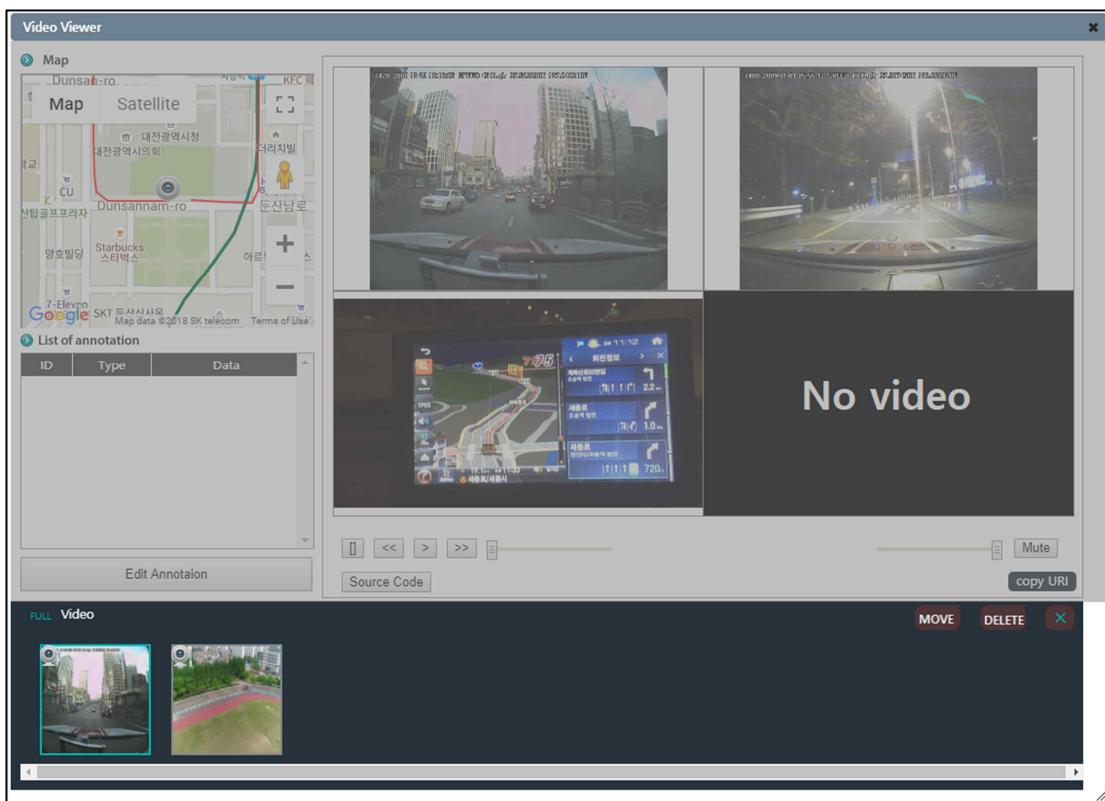
- In the video viewer window, click the 'Source Code' button at the bottom of the video, the source code for attaching the video will be displayed. On the right is a list of the annotation and a map showing the route. At the bottom, the image and video list of the layer are displayed together.
 - Click 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.)



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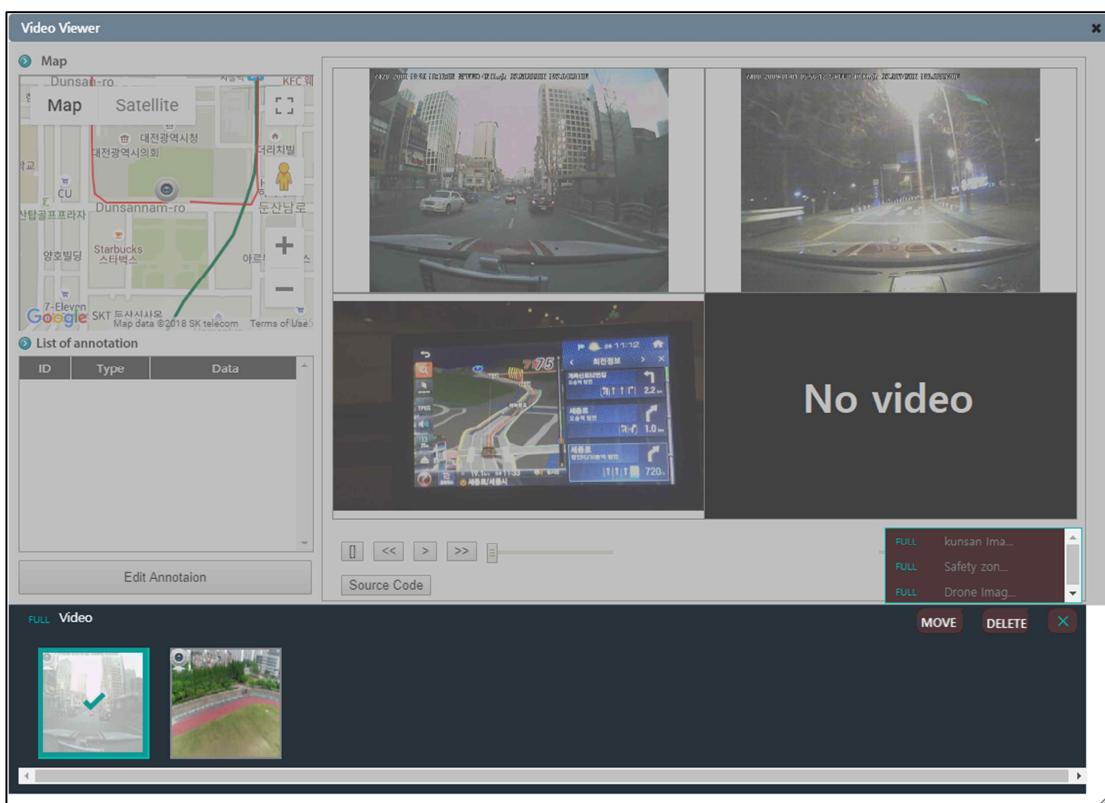
- When clicking the setting button on the lower right side, you can move and delete images and movies by selecting multiple images and moving them to another layer like the image viewer.

-  (Settings button) Click screen



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- After selecting images and videos, click the 'Move' button. A list of layers that can be moved is displayed. The selected images and movies are moved to the corresponding project. (When the main image is moved, the main image is changed to the first data in the remaining layer list. If there is no data in the layer, the notification window is opened and the window is closed.)



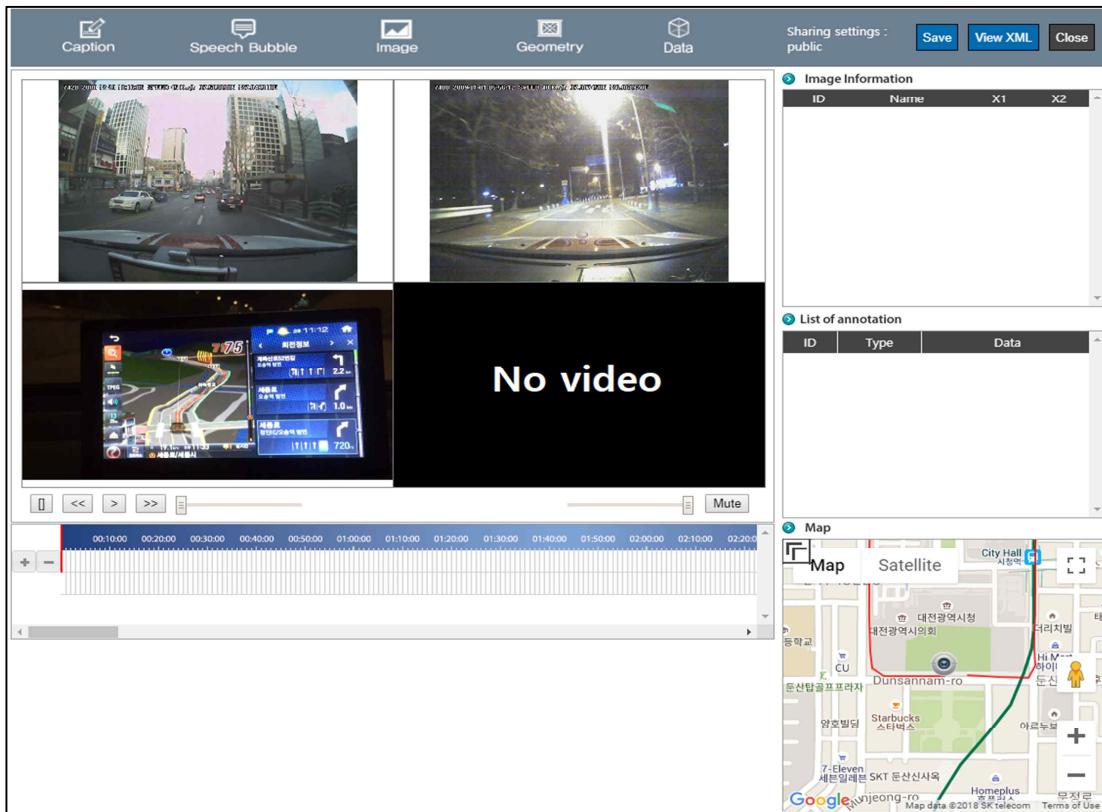
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3.2.10. Video authoring

- Clicking the 'Edit Annotation' button on the left will open a window where you can edit the object in the picture.

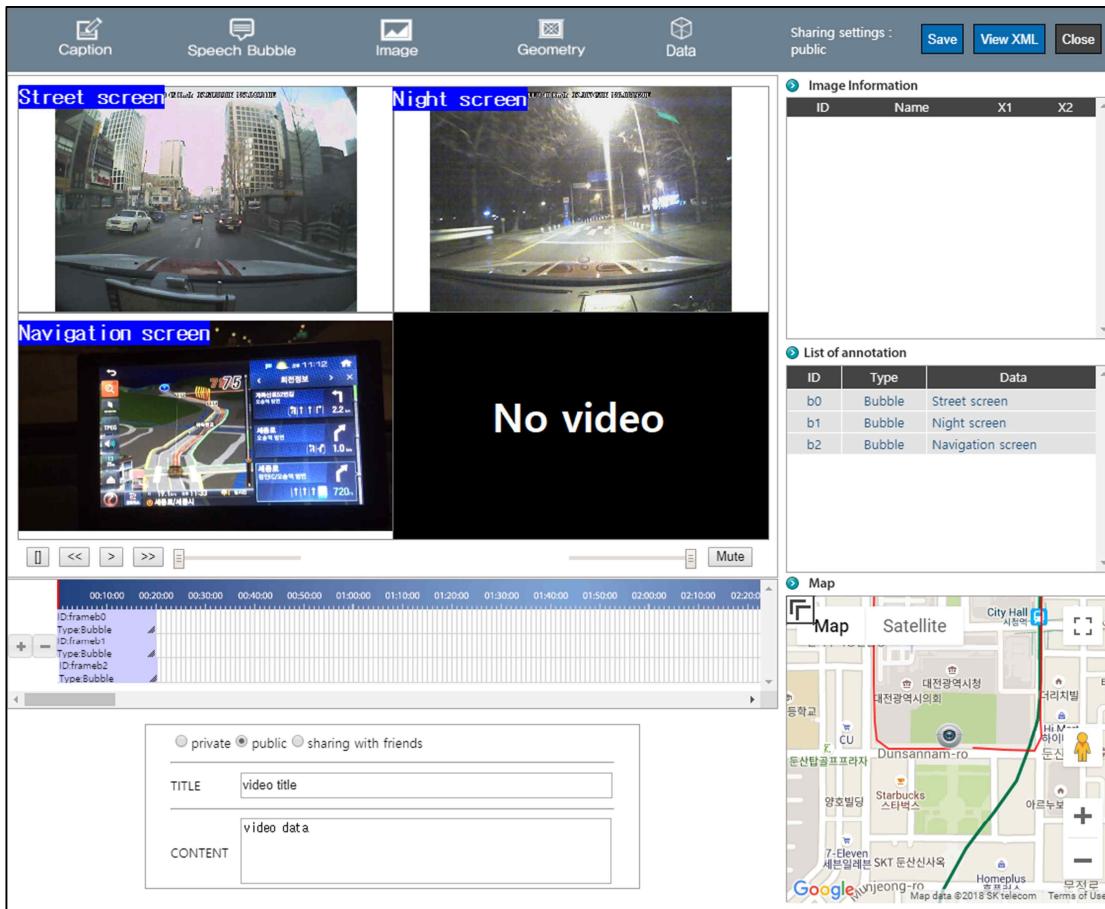
Zone settings and captioning, speech bubbles, and authoring information represented by icons

- 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)



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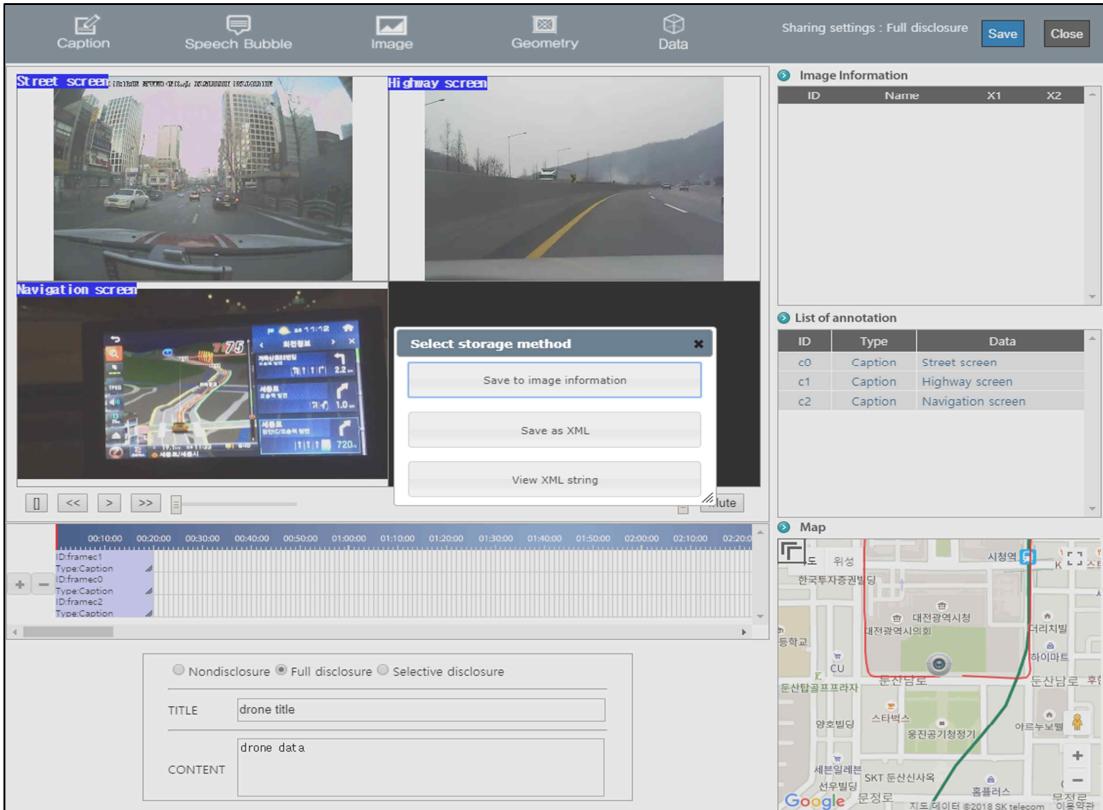
3.2.10.1. Apply additional icons to change additional presentation and data and sharing settings



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3.2.10.2. Save

- When you click the Save button, your work will be saved in DB and XML.



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3.2.10.3. View XML

- Check XML file

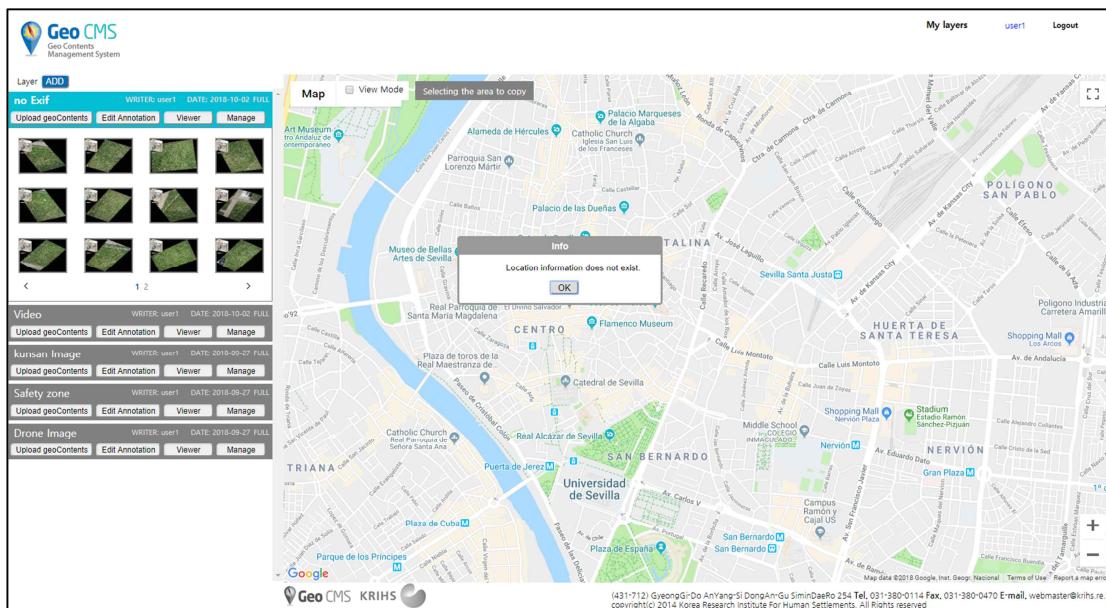
```
<?xml version="1.0" encoding="utf-8"?>
<GeoCMS>
<obj>
<id>b</id>
<top>-13</top>
<left>11</left>
<href>false</href>
<underline>false</underline>
<italic>false</italic>
<bold>true</bold>
<fontsize>H1</fontsize>
<fontcolor>#ffffff</fontcolor>
<backgroundcolor>#0000ff</backgroundcolor>
<text>Street screen</text>
<frameline>0</frameline>
<framestart>0</framestart>
<frameend>100</frameend>
</obj>
<obj>
<id>b</id>
<top>-11</top>
<left>390</left>
<href>false</href>
<underline>false</underline>
<italic>false</italic>
<bold>true</bold>
<fontsize>H1</fontsize>
<fontcolor>#ffffff</fontcolor>
<backgroundcolor>#0000ff</backgroundcolor>
<text>Night screen</text>
<frameline>25</frameline>
<framestart>0</framestart>
<frameend>100</frameend>
</obj>
<obj>
```

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3.2.11. Upload an image without coordinates

3.2.11.1. Upload coordinate files

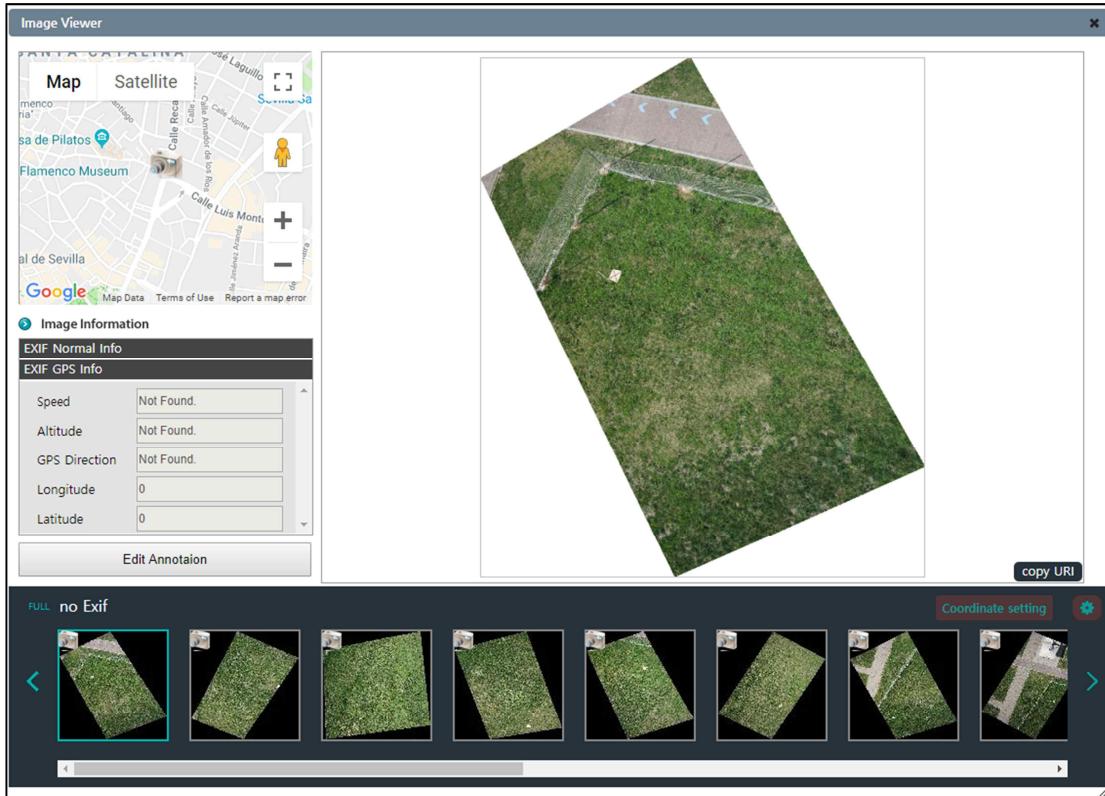
- Uploading a coordinate file to an image file without EXIF information
 - If the image does not have EXIF information



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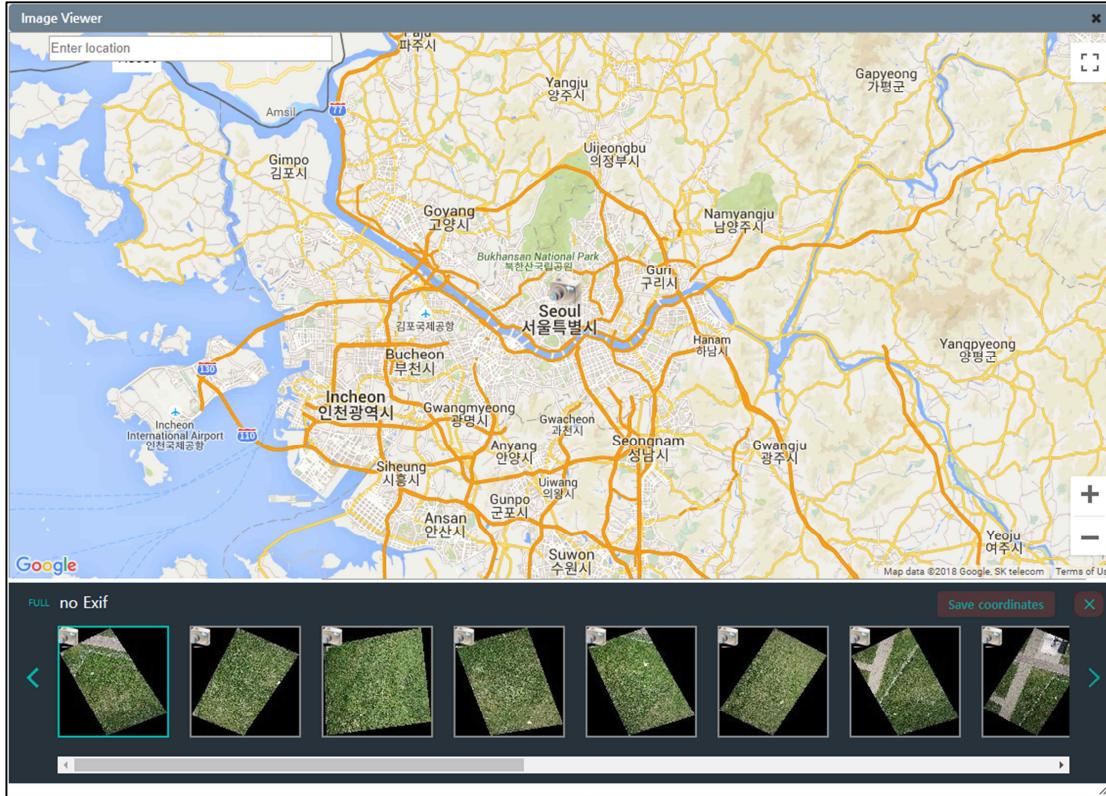
3.2.11.2. Specifying coordinates

- Move to the image viewer screen.



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- Press the Coordinate setting button.



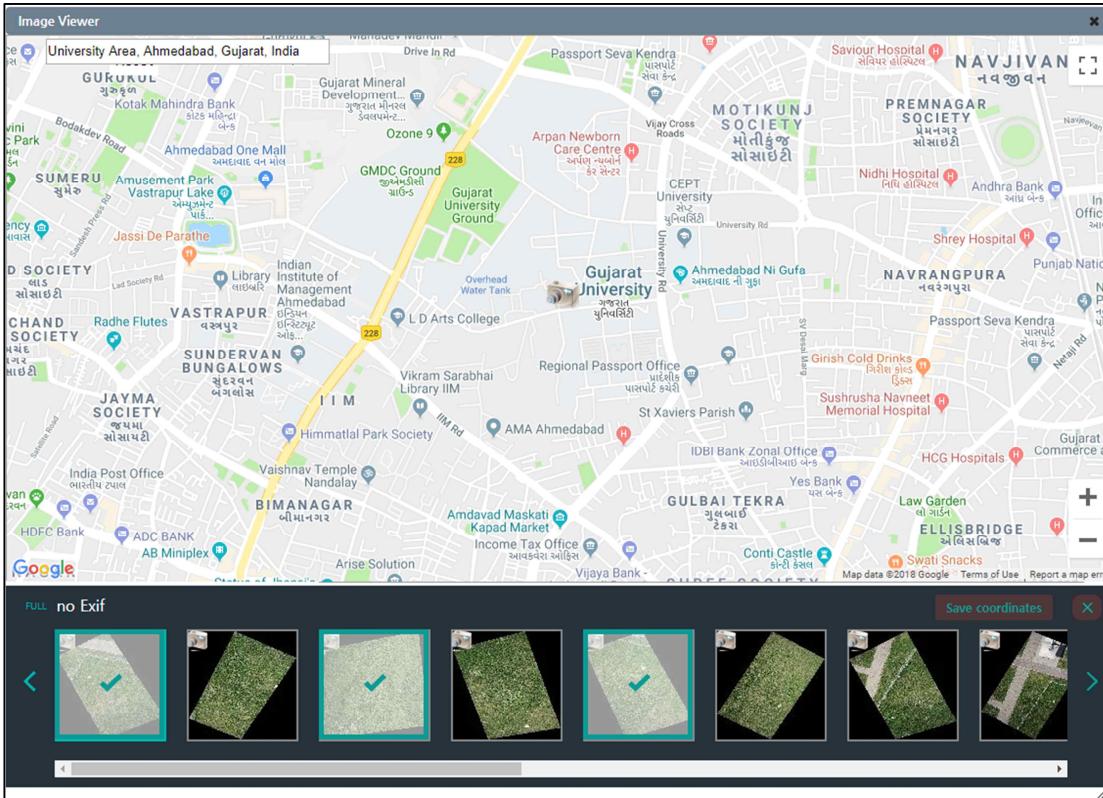
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- Search for the address in the address search window at the top.



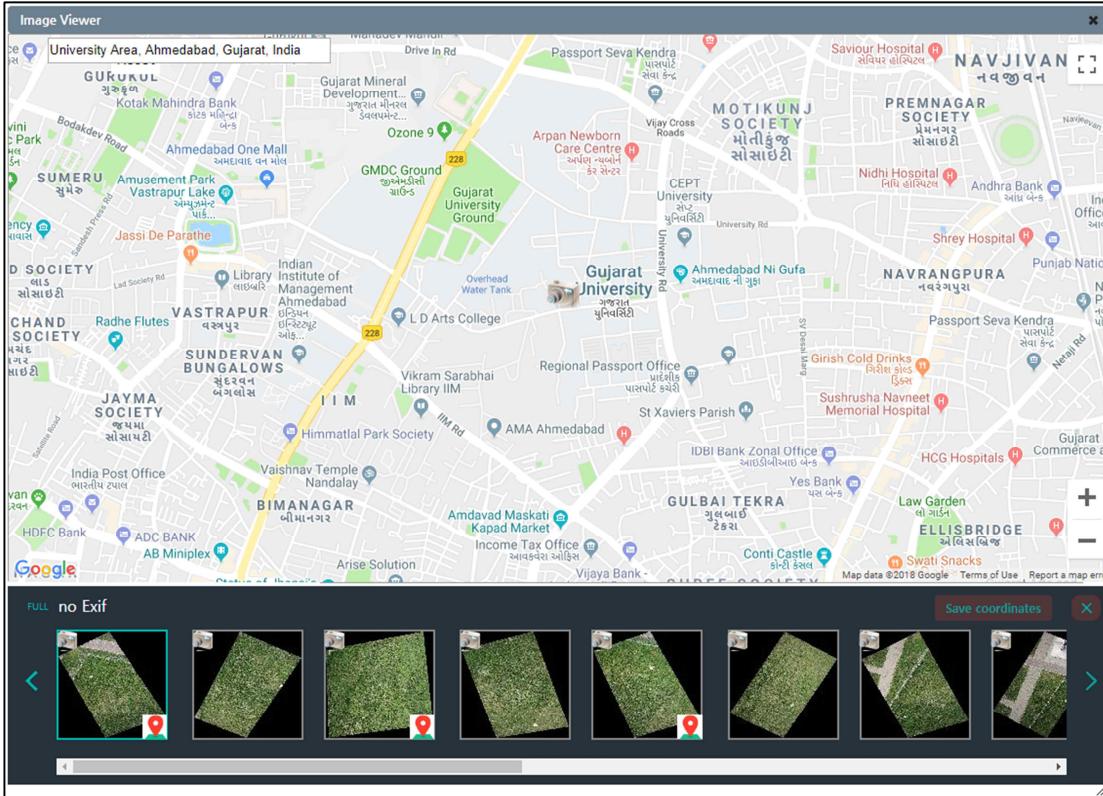
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- Select the address, move the marker to the desired position, select the image to save the coordinates, and press the Save coordinates button.



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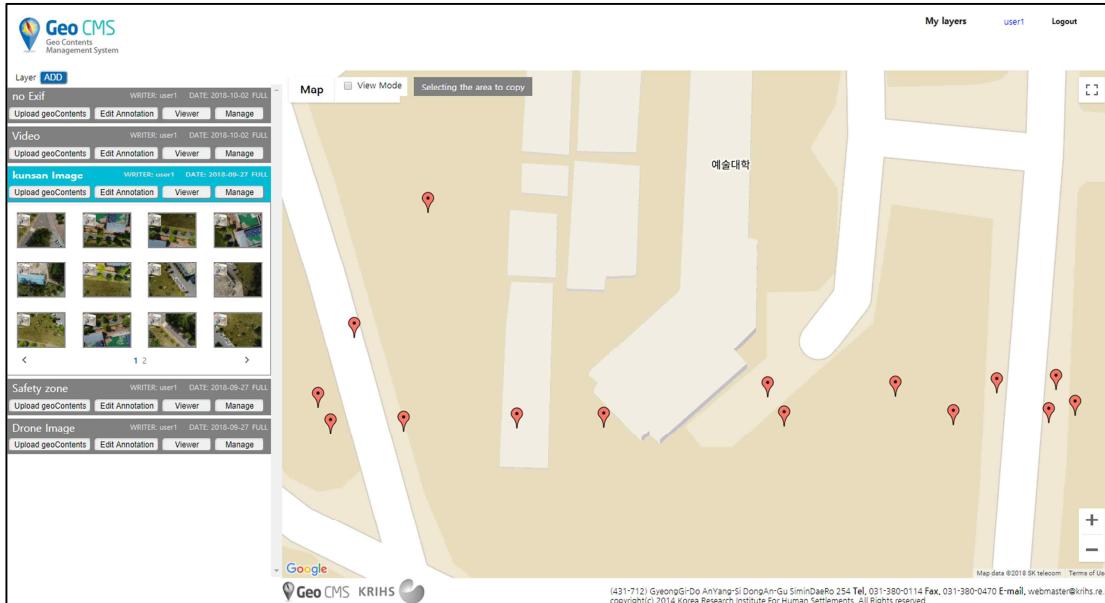
- After saving, coordinates are saved in the image.



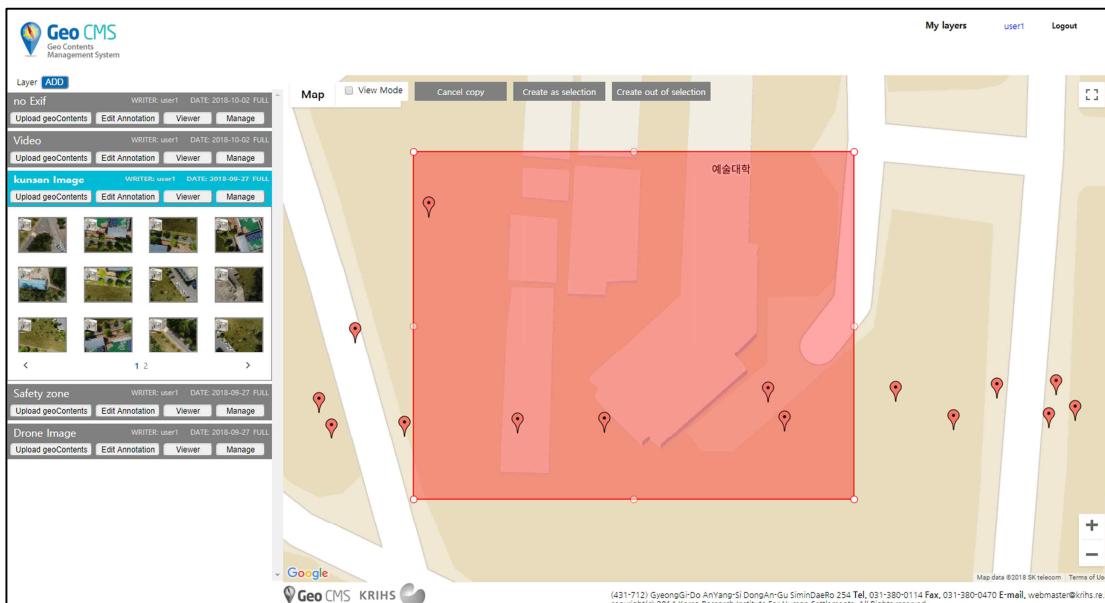
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3.2.12. Copying content on a map

- Select the layer to be copied and press the 'Select area to copy' button at the top of the map.

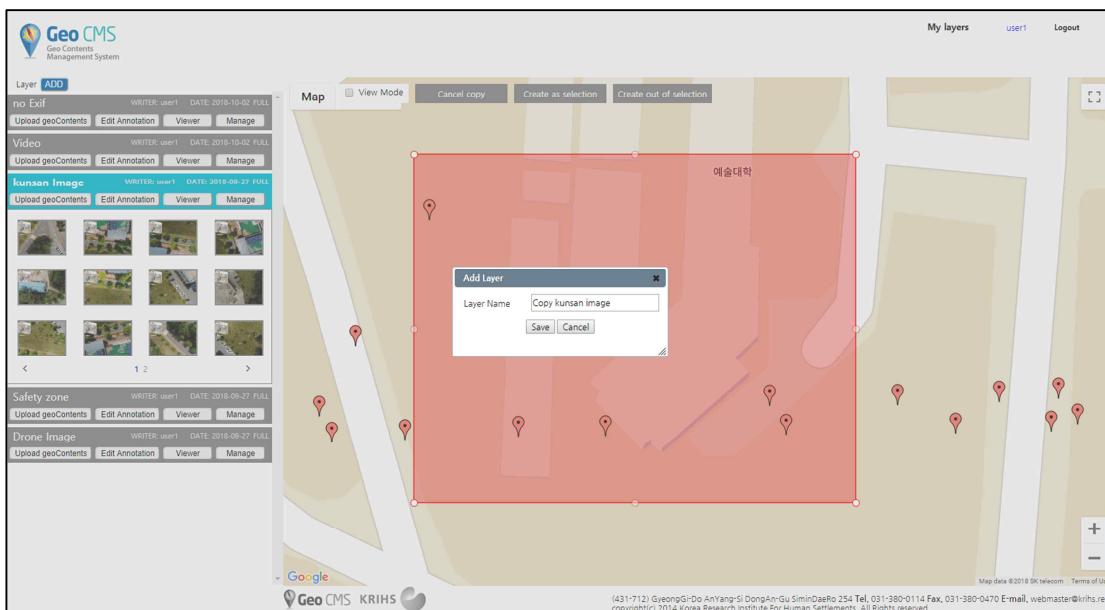


- Set the area of the content to be copied on the map.



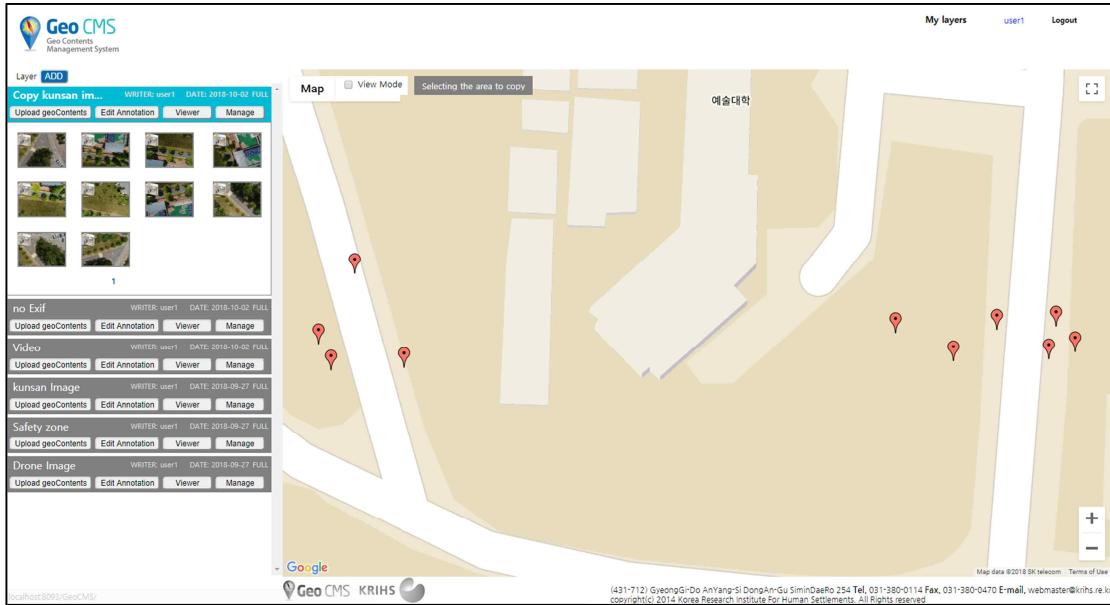
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- To create a new layer with data from the selected area on the map, click on the 'Create as Selection' button. To create a new layer of data outside the selected area, click the 'Create Out of Selection' button. The Make Layer pop-up When you click the 'Save' button after entering a new layer name, the layer is created with the selected data.



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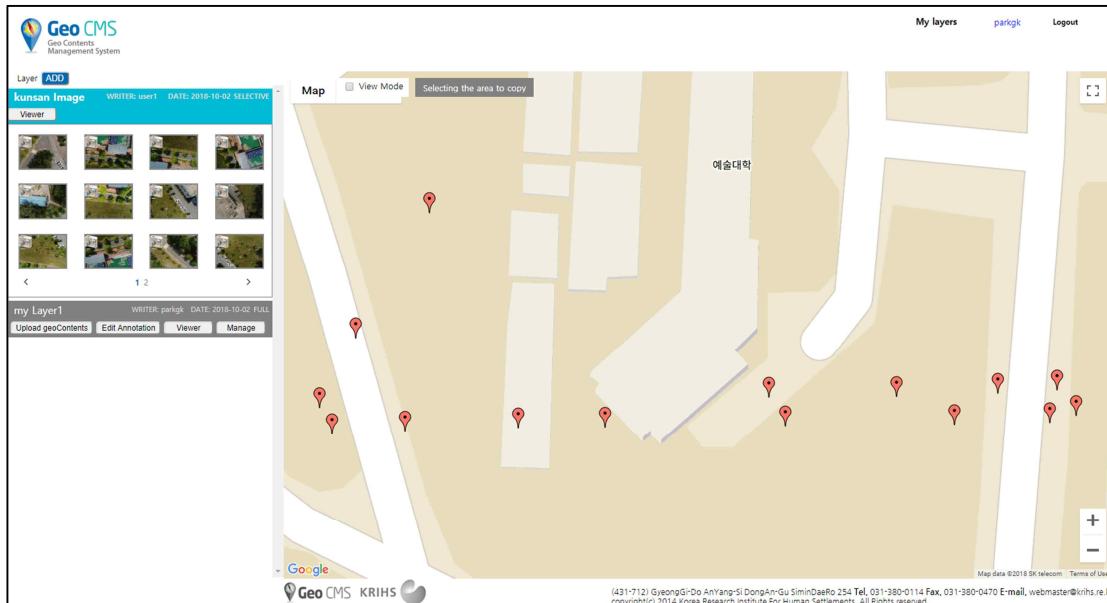
- Create copied layer
 - The layer is created the same as the sharing setting of the copying layer.



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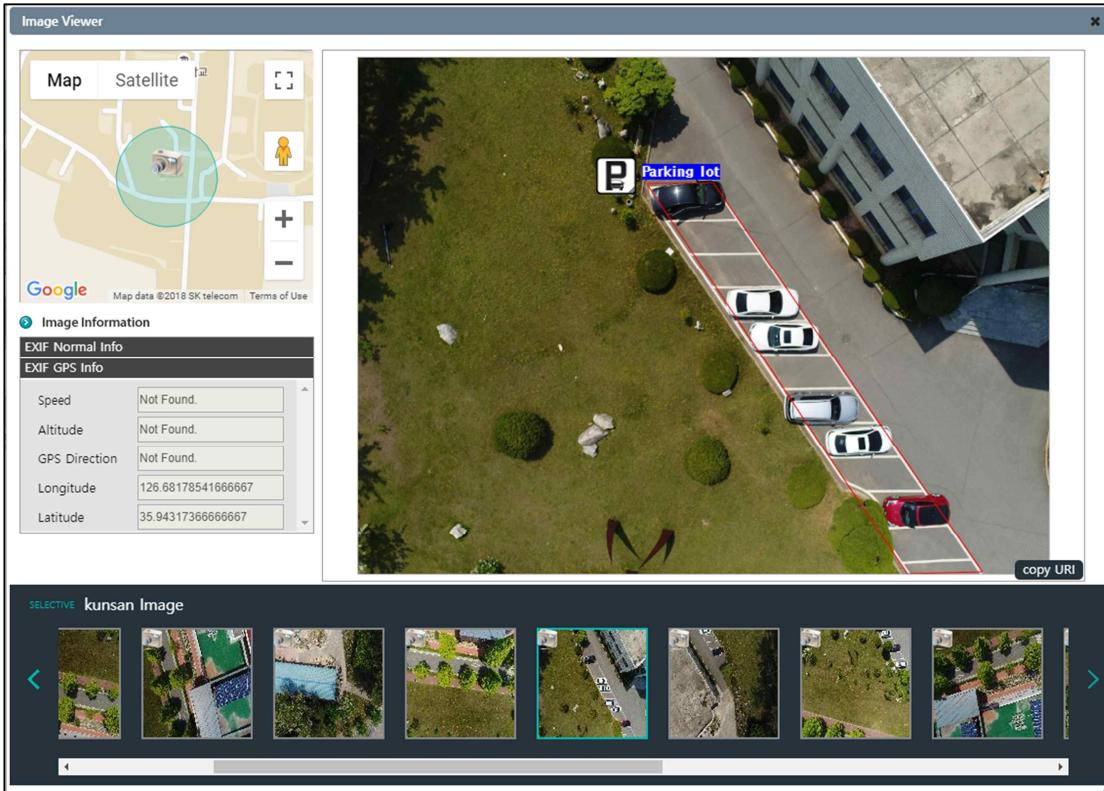
3.2.13. Share layer users (Share O, Edit X)

- Project list (Shared O, Edit X)
 - My Layers list shows a list of shared layers.



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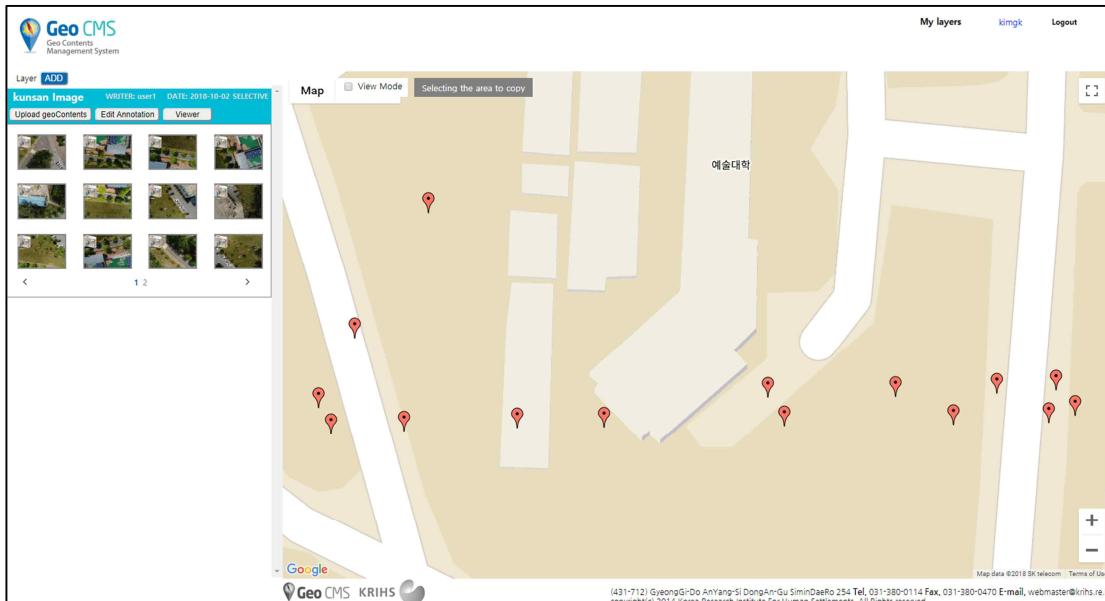
- There is no editing authority, so it is only possible to view authored content.



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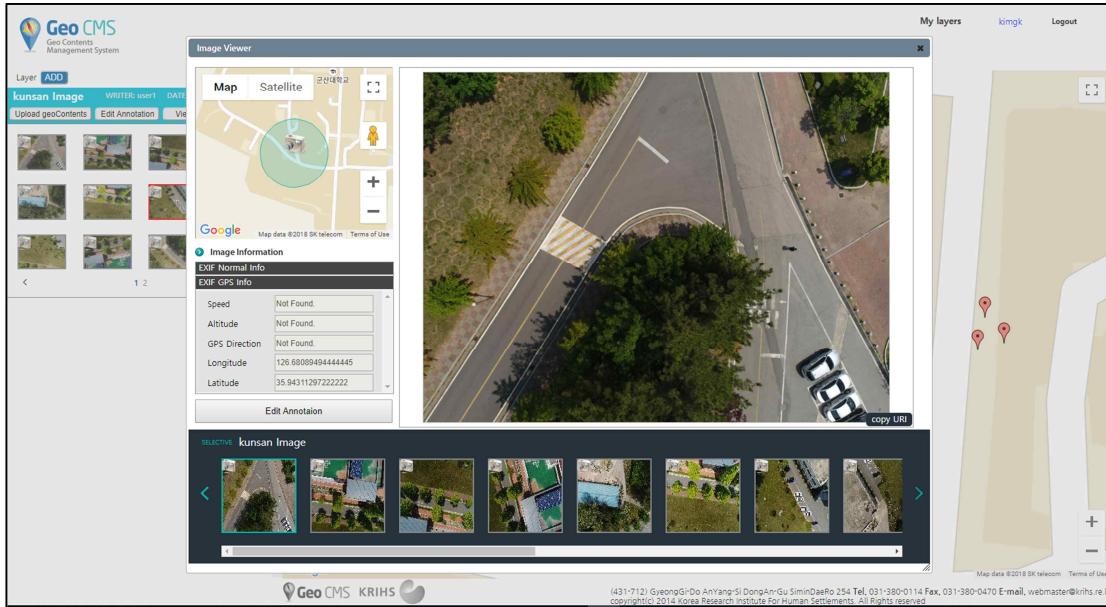
3.2.14. Share layer users (Share O, Edit O)

- When logging in as the user who shared the layer, the layer list (shared O, edit O)
 - My Layer list shows additional shared layer list.



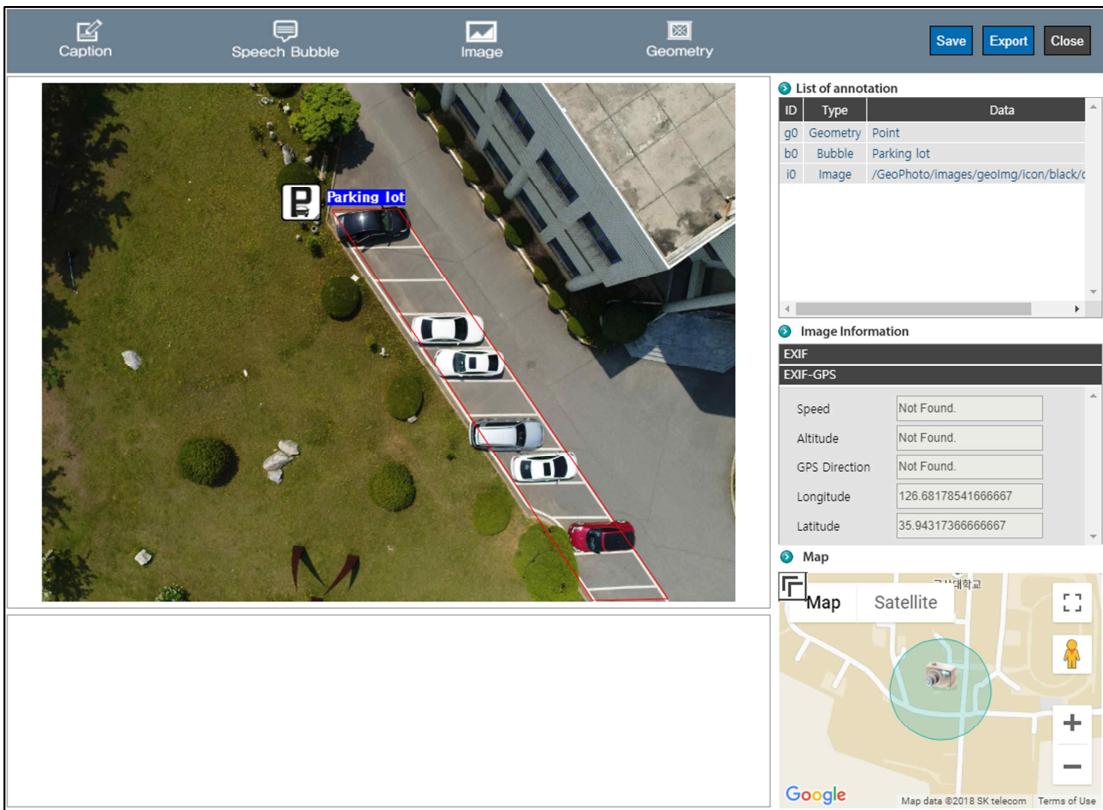
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- Because you have editing rights, the 'Edit Annotation' button appears on the top of the layer and on the left side of the image viewer.



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- Because you have edit authority, when you click 'Edit Annotation' button, the authoring window will appear and you can author the object except the data.

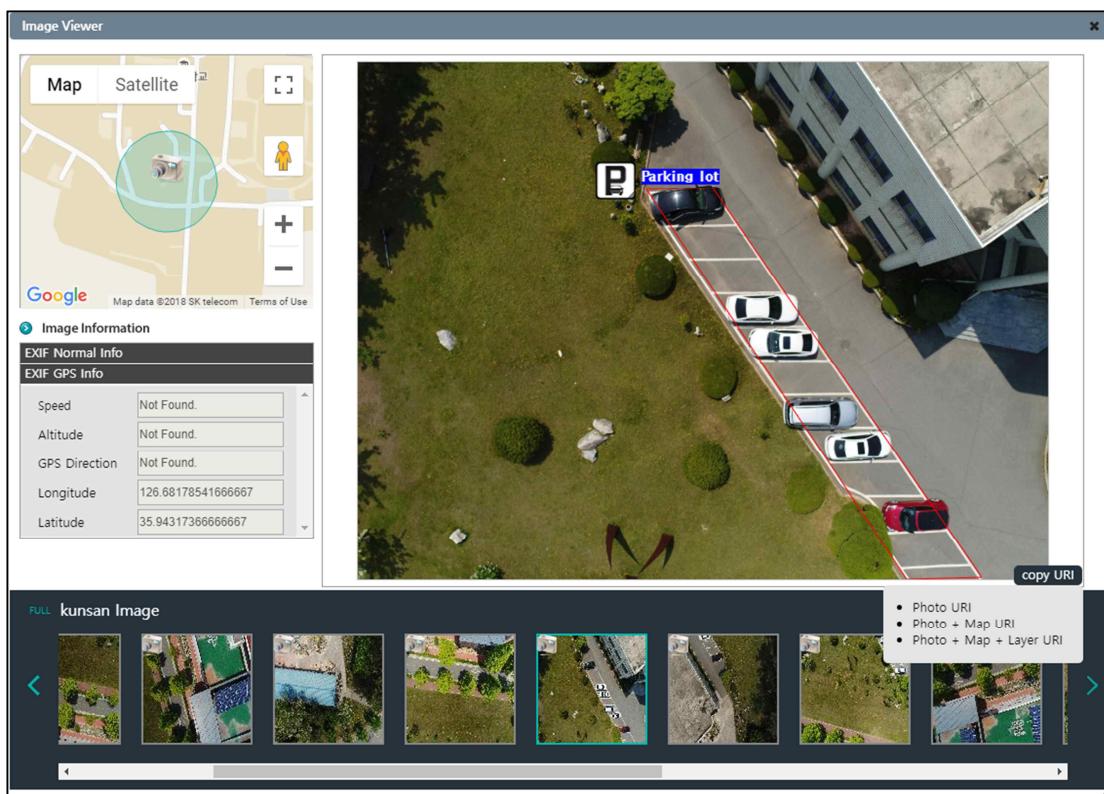


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3.2.15. Copy image and video URI

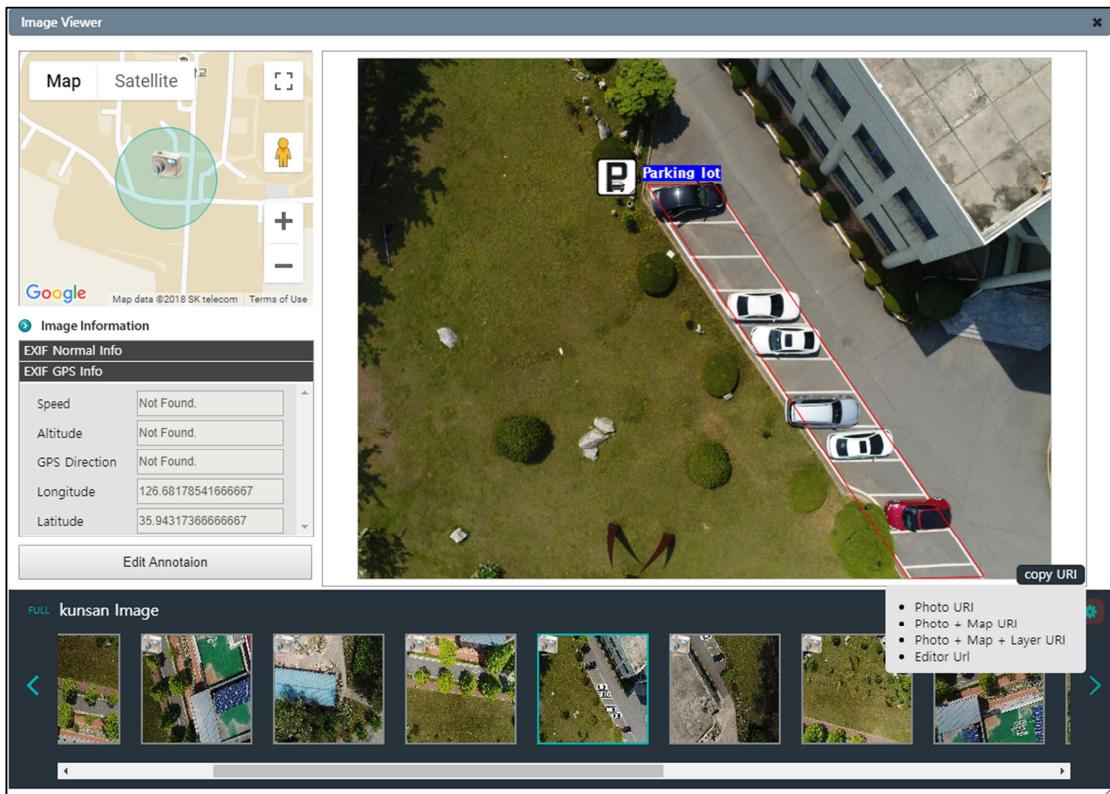
3.2.15.1. Copy image URI

- On the image viewer screen, a window to copy the URI to the copy URI button at the bottom right of the image is displayed.
- Photo URI: URI that shows only image
- Photo + Map URI: URI showing image and map
- Photo + Map + Layer URI: URI showing image, map, image and video list belonging to layer
- Editor URI: The URI in which the image editor is shown (only visible if you have permission to the image).



When you do not have permission to the image

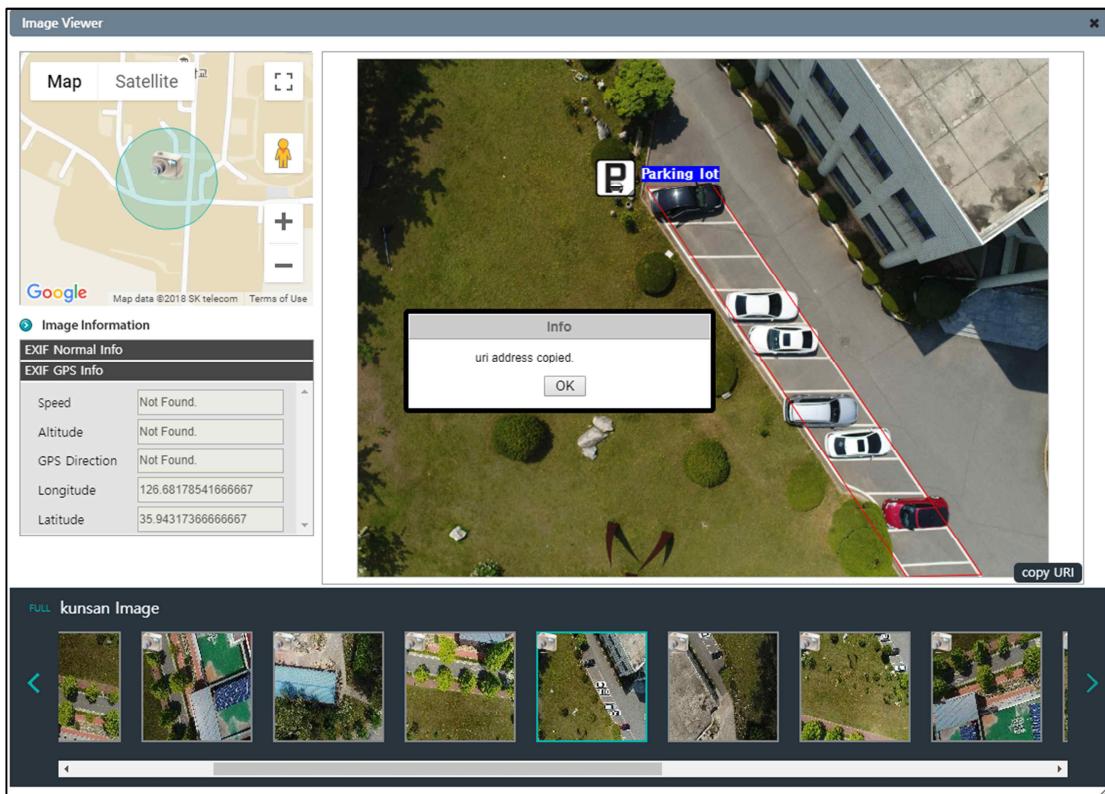
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When you have permission to an image

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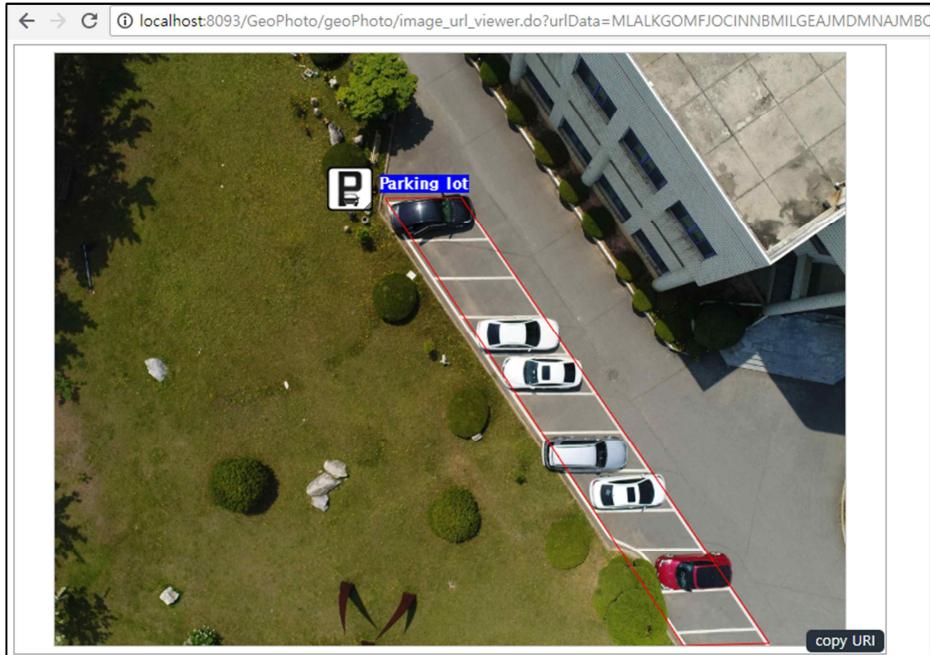
- Select image URI
 - If you select the URI to be copied from the image URI list, an information window is displayed that the copy has been made.



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- Image URI

- If you connect with copied URI, the image will be shown.
- image

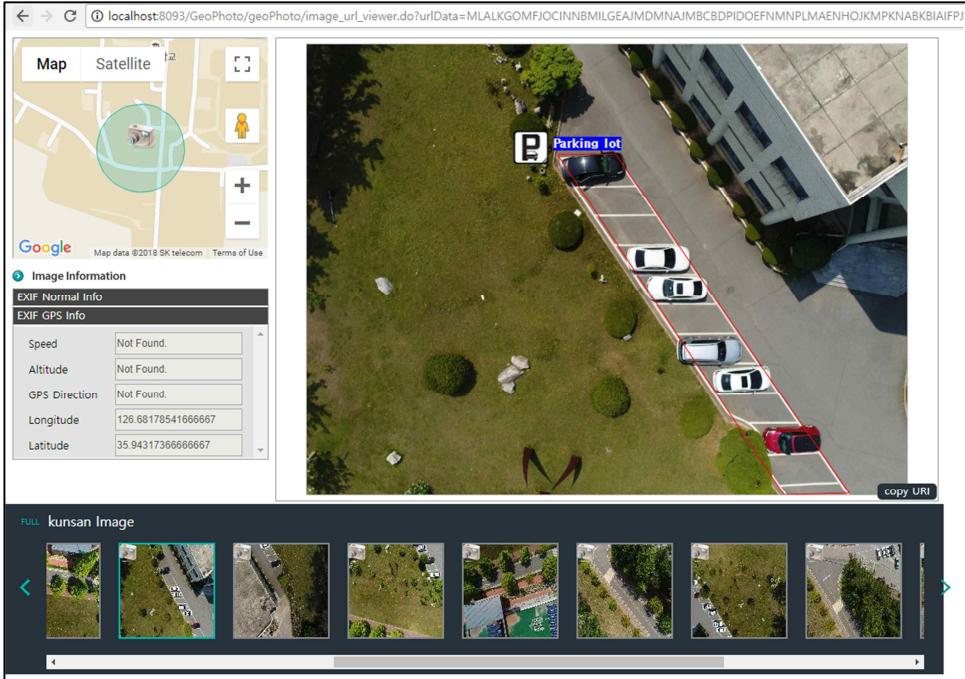


- image + map

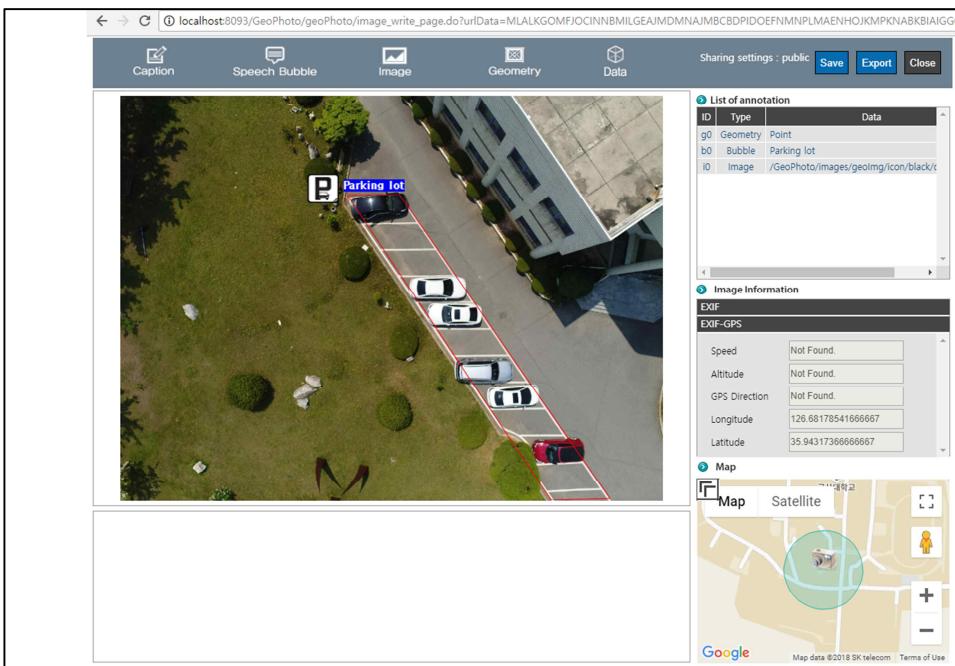
A screenshot of a web-based application interface. On the left, there is a small map with a green location marker and zoom controls. On the right, there is an aerial photograph of a parking lot with a red polygonal outline and a 'Parking lot' icon. Below the aerial view, there is a 'copy URL' button. The interface also includes a 'Google' logo and a 'Map data ©2018 SK telecom Terms of Use' link.

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- Image + Map + List of images and videos belonging to layer



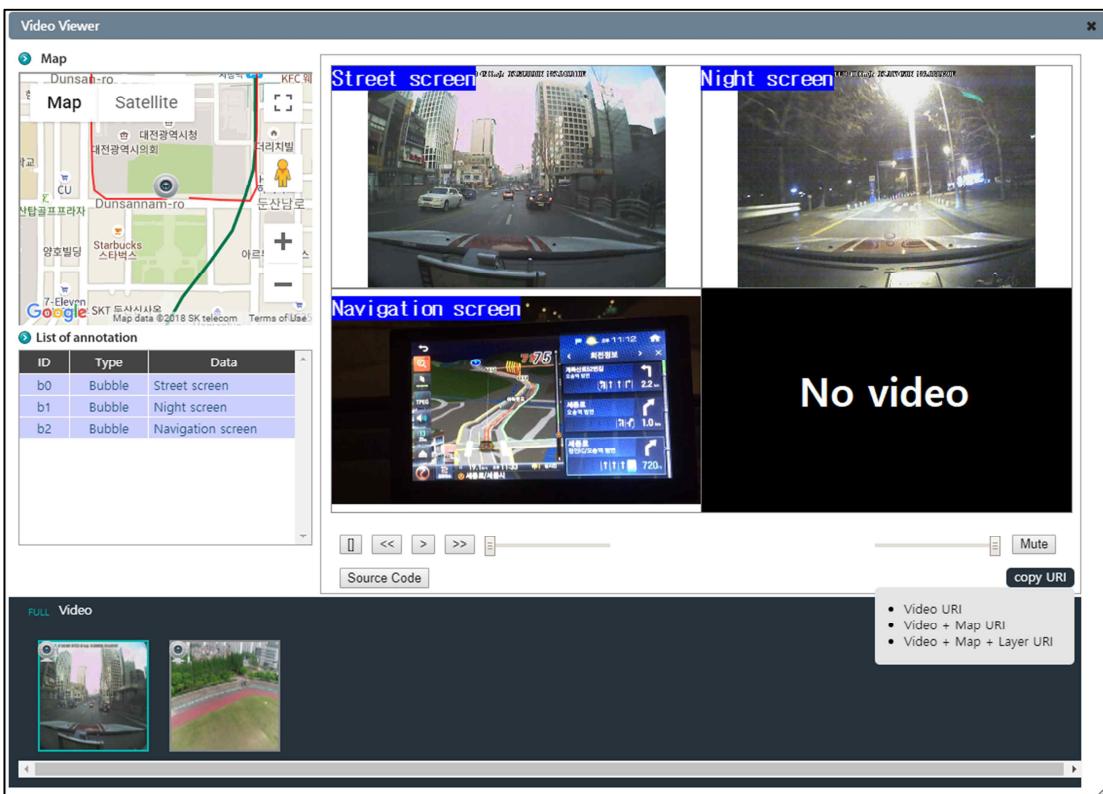
- Image editor



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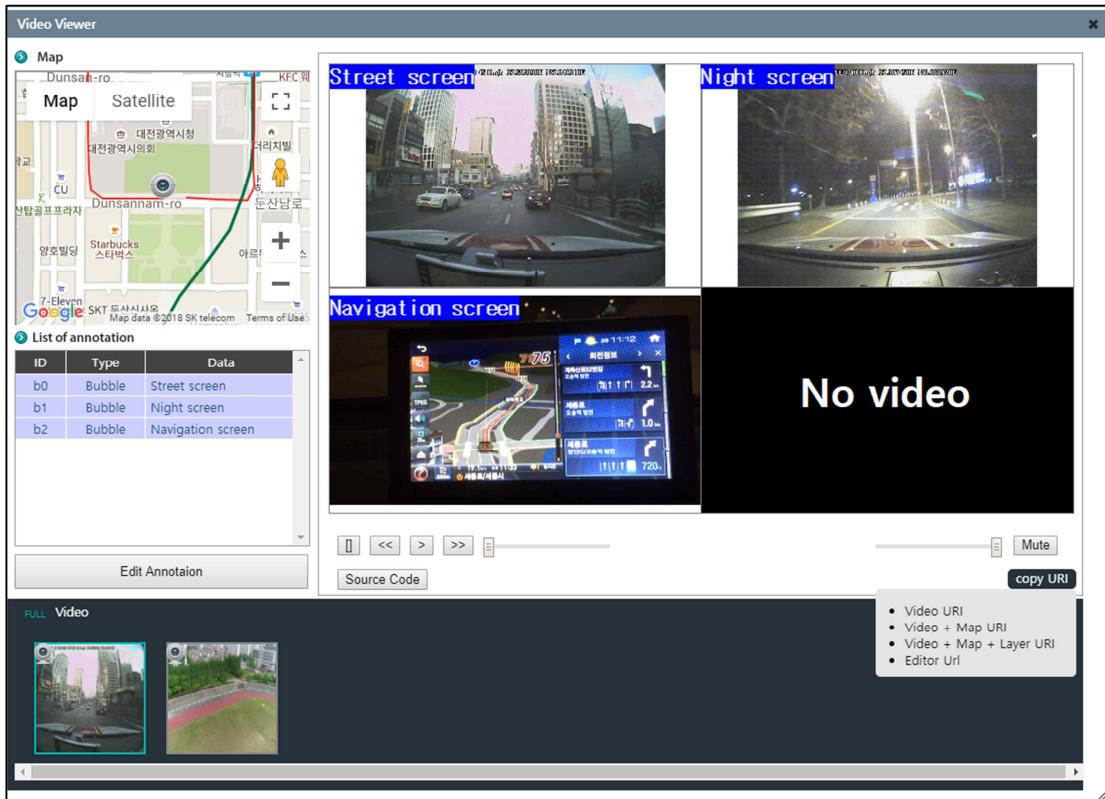
3.2.15.2. Copy video URI

- On the video viewer screen, the copy URI button is displayed on the bottom right of the video, and a window to copy the URI is displayed.
- Video URI: URI that shows video only
- Video + Map URI: URI where the video and map are shown
- Video + Map + Layer URI: URI showing video, map, image and video list belonging to layer
- Editor URI: The URI in which the video editor is shown (only visible if you have permission to the video).



When you do not have permission to the video

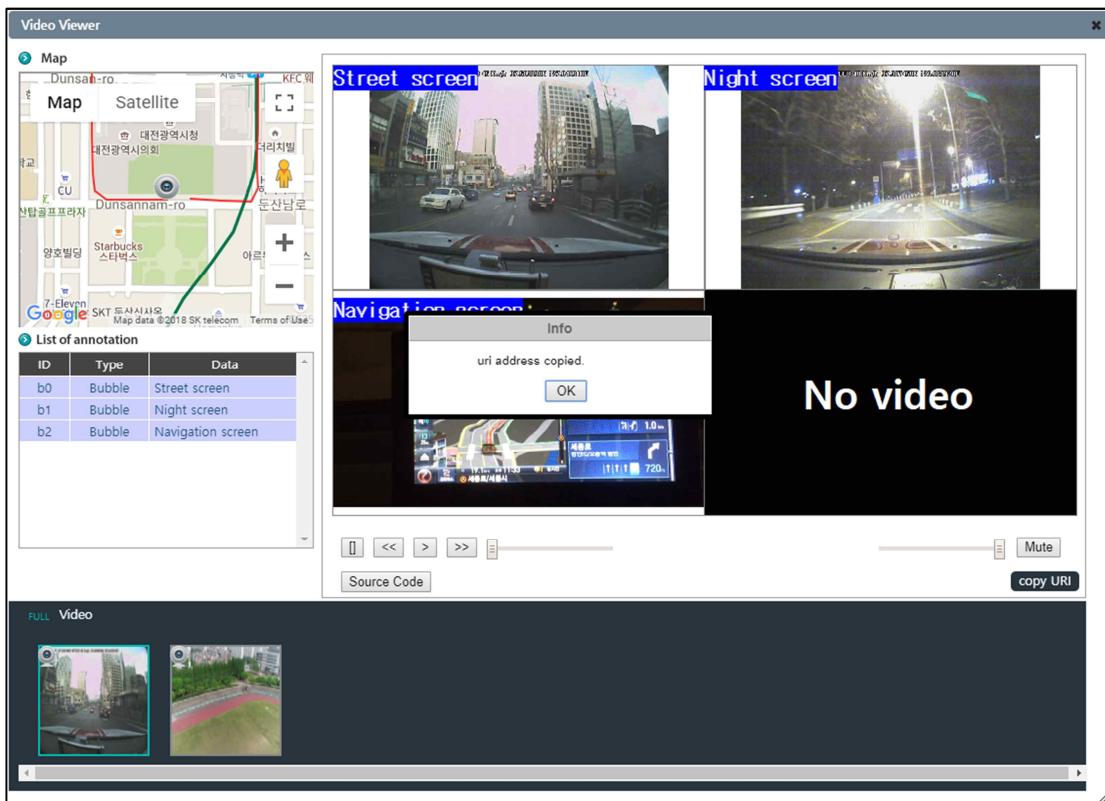
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When you have permission to the video

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- Select video URI
 - If you select the URI to be copied from the video URI list, an information window is displayed that the copy has been made.



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- Video URI

- When you connect with copied URI, video is shown.
- video

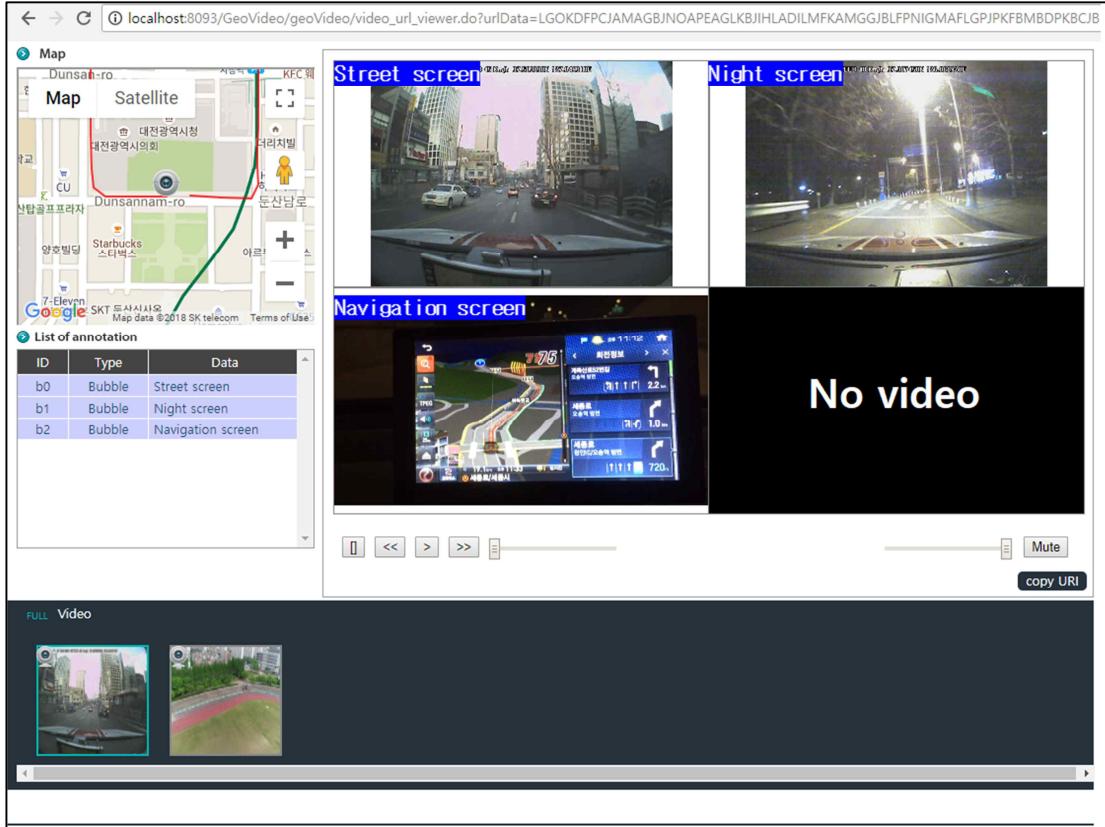


- video + map



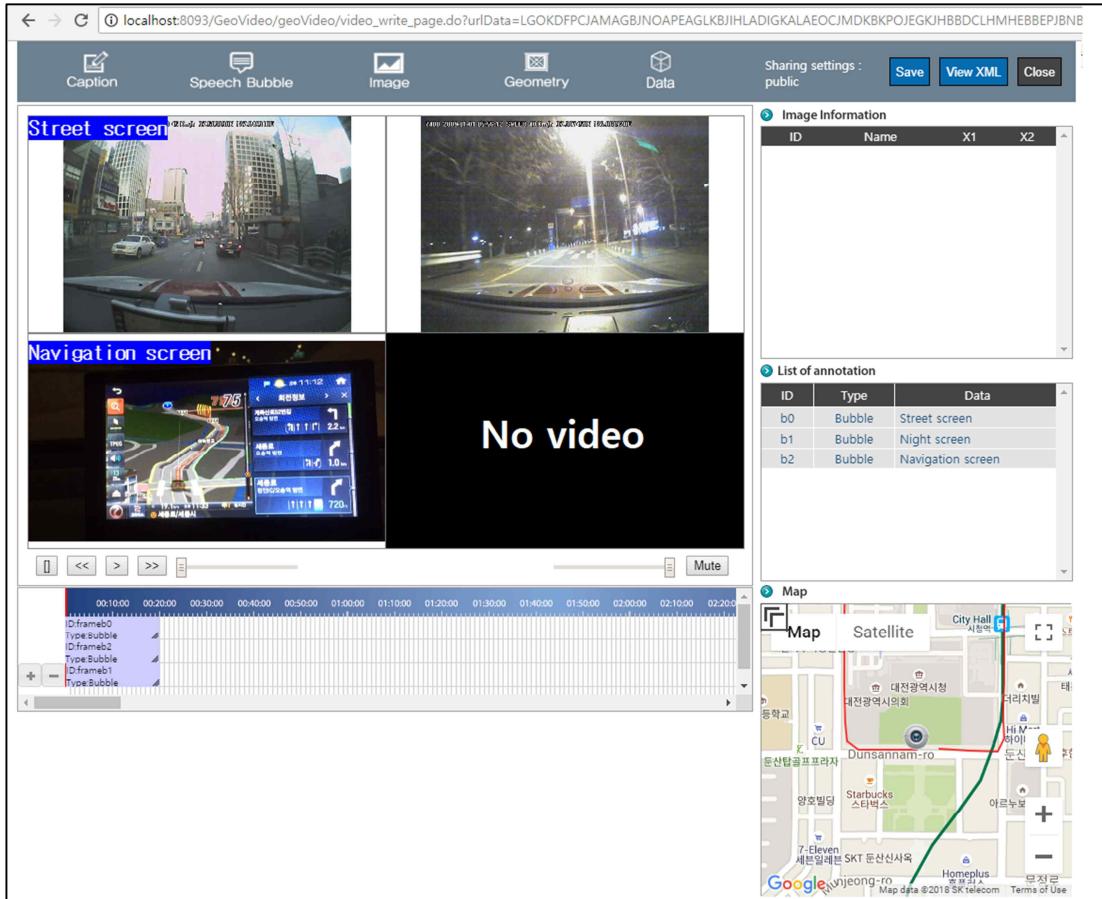
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- List of images and videos belonging to the video + map + layer



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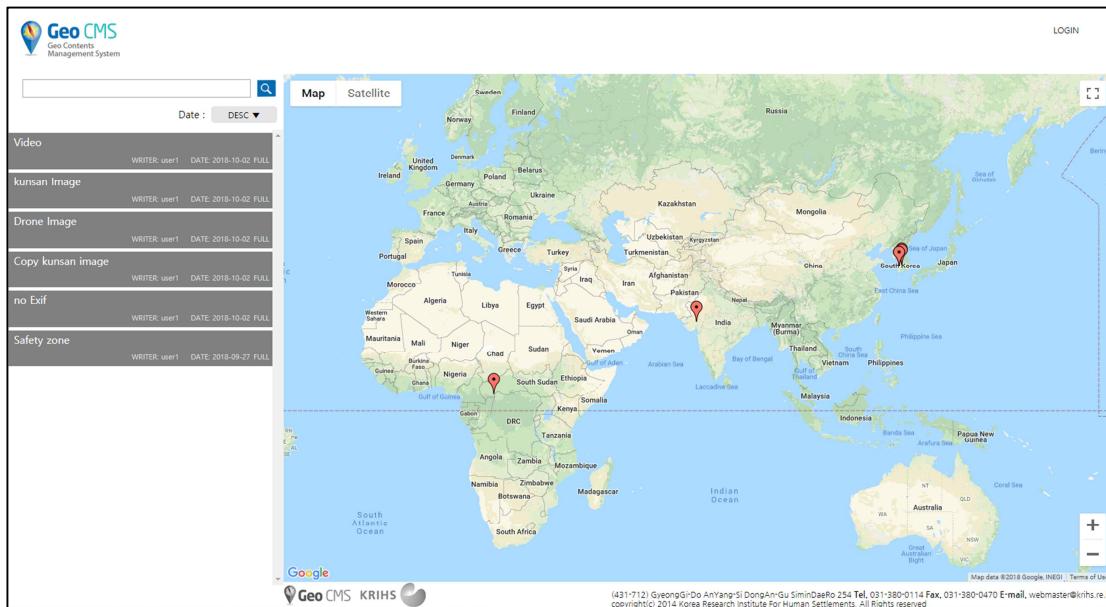
- Video editor



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3.2.16. Search

- Search
 - You can search by entering a search term in the search window at the upper left of the main screen.



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- Search result screen after entering search term

- The list of images and videos searched on the left side is displayed, and the location of the searched images and moving images is displayed on the map.
- When clicking the image and video on the left, the marker on the map moves to the center and is shown in yellow. When the marker is overlaid, the image and the name of the image are displayed. When the marker is clicked, the viewer is displayed.
- Images and videos, title and content authoring objects, and the maximum number of results can be set to search.

