PhotoMapper Server

User Manual

Status: PhotoMapper Server 2.2
From Date: 11/02/2014

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We are grateful for suggestions for improvement and indications of mistakes.

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Table of Contents

Introduction 1

1.1. QuickStart 2

1.2. Graphical User Interface 6

2. Uploading Photos 7

2.1. Upload by Graphical User Interface 7

2.2. Upload By Directory Listener 8

3. Organise your Photos by Using Albums 9

3.1. System Albums 9

3.2. Photo Albums 11

3.3. Sharing Albums 12

4. Geocode Non-Georeferenced Photos 14

5. Commenting and Tagging 16

5.1. Tagging and Commenting a Single Photo 16

5.2. Tagging and Commenting for a Selection of Photos 16

6. Create A Picture Selection 18

7. Search Functions 20

7.1. Search in the Map 20

7.2. Search Dialogue 21

7.3. Search for locations 22

8. Navigation 23

8.1. Zoom functions 23

8.2. Navigation Functions 23

8.3. Scale Bar 24

8.4. Overview Map 24

9. Presenting Pictures 25

9.1. Thumbnail Bar 25

9.2. Image Preview 26

9.3. Single Photo View 26

10. Login and Logout 28

11. Administration 29

User 29

shares by user 30

Shares by Album 30

Roles 31

Map services..... 32

INTRODUCTION

A picture is worth a thousand words. But how do you organize libraries containing thousands of digital photos and make them worldwide available?

The solution is linking your images with the position where they were taken. Many of the present digital cameras contain internal GPS modules or use interfaces for connecting to external GPS devices. The localization is stored to the “Exif-Header” of the image file and can be used to georeference the photo.

In many application areas for object documentation and management purposes, the geographic location is mandatory. Until now, this had to be done in time-consuming post-processing procedures which now become obsolete.

PhotoMapper Server allows you to use the position of your pictures and publish them in the internet or within your intranet. Even the photo bearing may be recorded from your image file. You can also, subsequently, add coordinates and image direction manually when no other information is available.

The most vital advantage over conventional photo management packages is the possibility to upload and edit your pictures using your internet browser as user interface. This way colleagues and customers may access and manage your photos at any time and any place.

The possible applications are manifold, reaching from real estate business – where staff members may document and publish property with their exact localization – to classical documentation purposes for environmental protection or object management as, for example, in the tourism industry, public institutions and agencies.

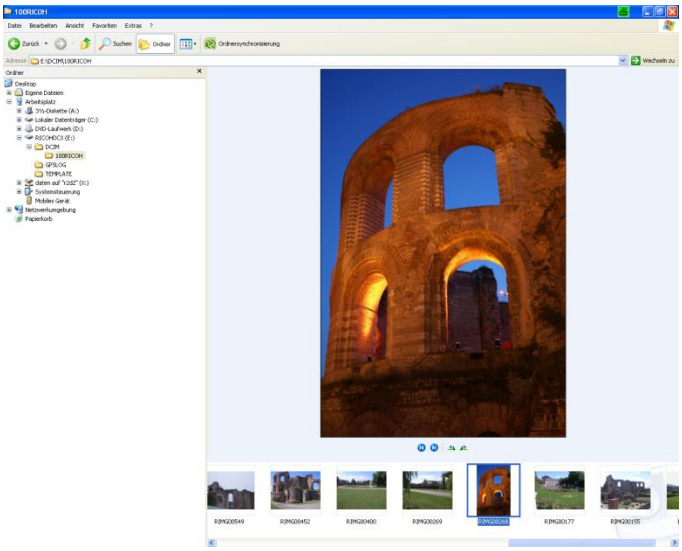
PhotoMapper Server is an independent system which is installed on a server machine which is then accessed by all users (clients) employing their own browser. The user requires neither any specific software nor any special system requirements. In addition to an internet-browser, only ADOBE Flash Player in version 9 or higher is required. Beside the installation on your local server, you may also host your application on alta4 servers where you can rely on our high standards of service and support.

1.1. QUICKSTART

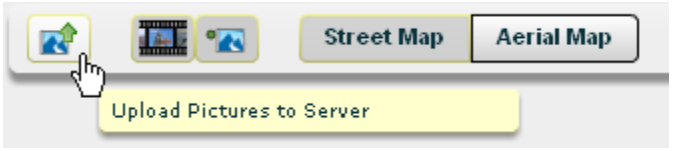
The “Quickstart” part of the manual facilitates rapid access to the use of PhotoMapper Server. This will not replace the comprehensive description of functionality, but focuses on those functions necessary for a quick start.

1. In the field, take photographs with GPS coordinates

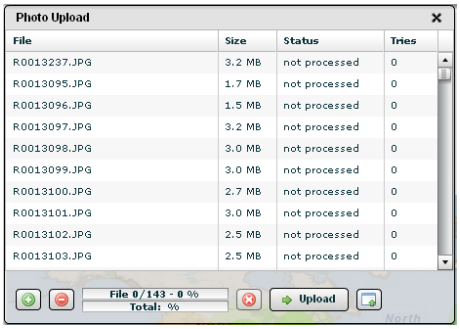
2. Connect the camera to your computer and/or transfer your photos to your computer



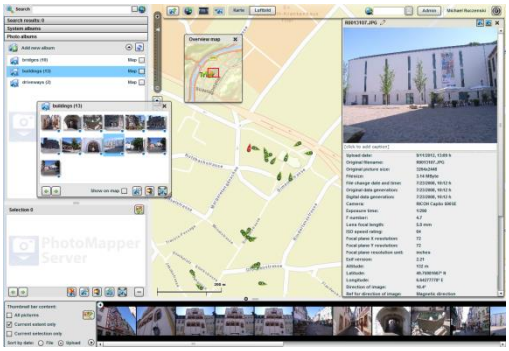
3. Load the photographs onto your server using the Upload function of PhotoMapper Server.



4. Select the files to be loaded and start the Upload process



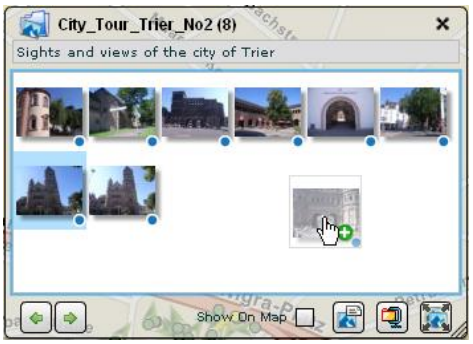
5. The uploaded pictures now reside on the server and are located in the map.



6. All uploaded photographs have been put to the Inbox under System Albums.

7. Please now organize your pictures into albums. By doing so, create new albums to achieve a well-layouted arrangement.

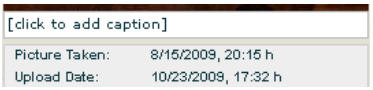
8. Move your images from the system albums to the newly created albums by Drag&Drop.

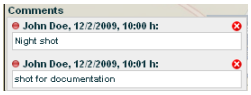


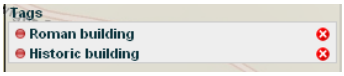
9. Add Tags/Comments to your photos to facilitate data search.

10. Now you can start working with your photos. Amongst other, the following tools are available:

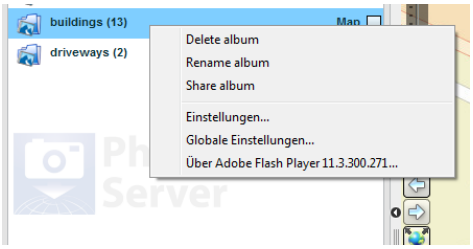
- Rotated photos
- Delete photos from server
- Export photos to .zip-format
- View photos
- Move photos (Drag&Drop)

- Add subtitles 

- Georeference photos
- Manipulate viewing direction of photos
- Delete photo from album
- Refresh album
- Add comments to photos 

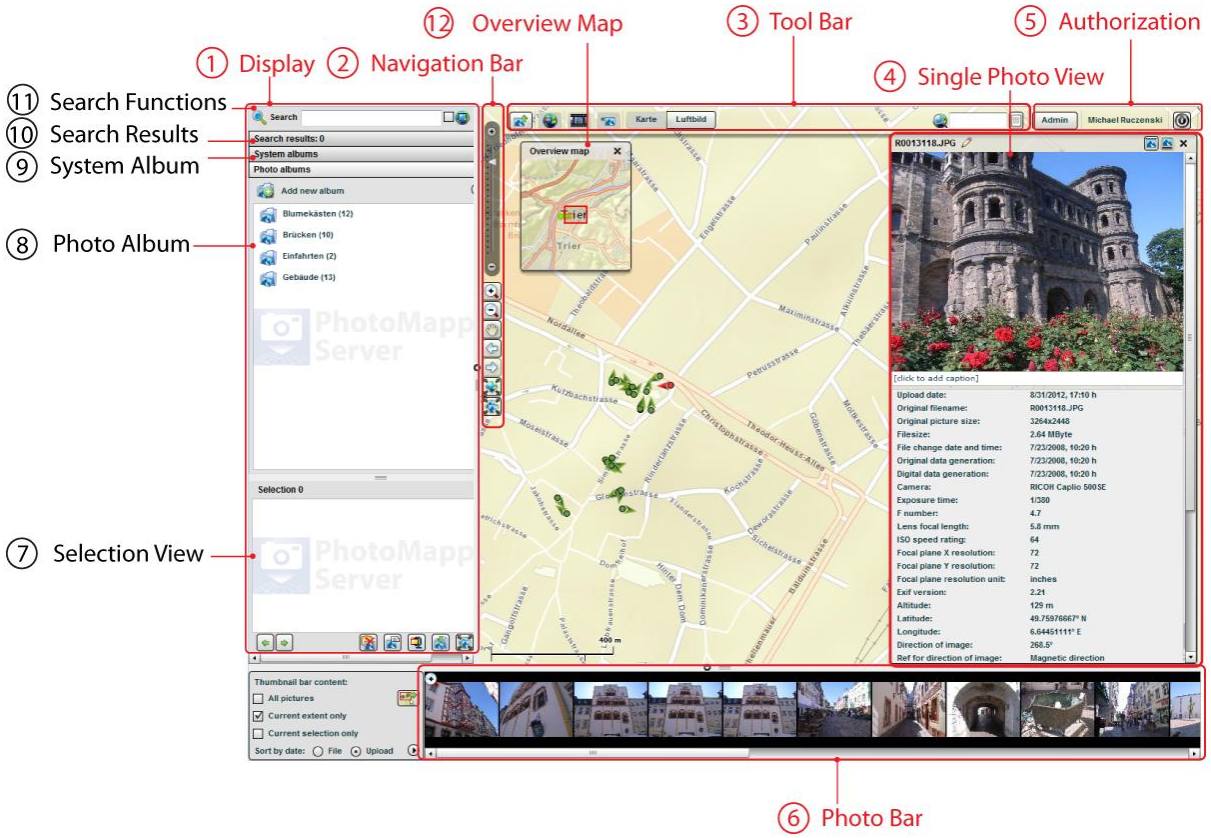
- Delete comments/tags from photos 

- Tag several photos
- Add tags to photos

• Delete, rename and share albums* *the feature to share must be set up by the administrator	
• Create photo selection.	
• Centre photos	

1.2. GRAPHICAL USER INTERFACE

The user interface is divided into the following units:



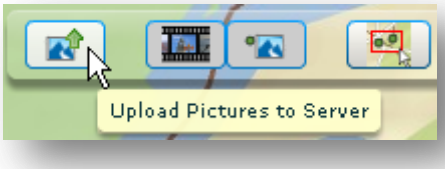
No.	Description	Please refer to page
1	Display	P. 9; P. 20; P. 18
2	Navigation Bar	P. 23
3	Tool Bar	P. 7; P. 25
4	Single Photo View	P. 26
5	Authorization	P. 29
6	Photo Bar	P. 25
7	Selection View	P. 18
8	Photo Album(s)	P. 11
9	System Album(s)	P. 9
10	Search Results	P. 20
11	Search Functions	P. 20
12	Overview Map	P. 24

2. UPLOADING PHOTOS

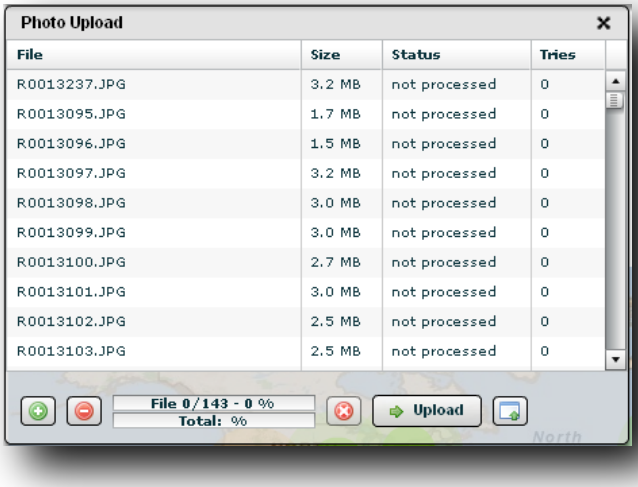
There are two possibilities to upload new photos to your database. Either you can use the graphic user interface or the automatic directory listener feature.

2.1. UPLOAD BY GRAPHICAL USER INTERFACE

You can upload pictures simply by clicking the “Upload Picturs to Server”-button in the toolbar.



A new dialogue box is added to the browser window that may be freely moved around. Here, you may create a list of photos that can be uploaded to the server. You may add or remove files from your list by using the action buttons “Add files” and “Delete files”. It is irrelevant where the photos reside whether locally, on the network or on your memory card of your camera. The “Upload”-button Upload finally starts the uploading process to the server. With “Show/Hide files”, the files may be blended in and out of the Photo Upload box. The upload process may be cancelled by the red cross.



When the process is finished, you will get a message that the photos have been uploaded and are now available on the map.

2.2. UPLOAD BY DIRECTORY LISTENER

A comfortable way of uploading your current data is the use of the directory listener. It allows for an automated upload by simply copying the data into a predefined directory. In a set cycle interval, the photos are uploaded automatically, in the background, without limiting the mapping application. The directory and cycle interval are determined by the administrator.

Please be aware that the images will be deleted from the directory after the uploading process. You should always keep a backup to prevent data losses!

3. ORGANISE YOUR PHOTOS BY USING ALBUMS

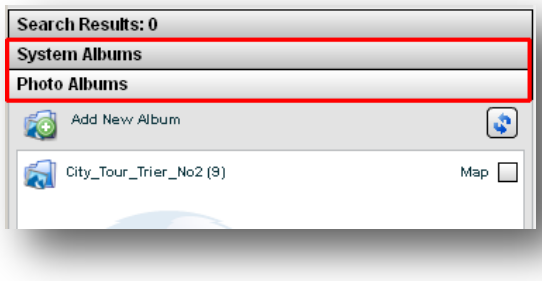
The PhotoMapper Server Album function allows you to organize categorize your photos in a comprehensive way. You may upload your images into so-called albums. They permit a thematic sorting or your images and guarantee a clear organization even with vast data quantities. The advantages are obvious. Each user may sort his photos in a fast and simple way, and, later, may quickly retrieve them from an appropriate thematic field.

Generally, two album types can be distinguished:

1. System Albums
2. Photo Albums

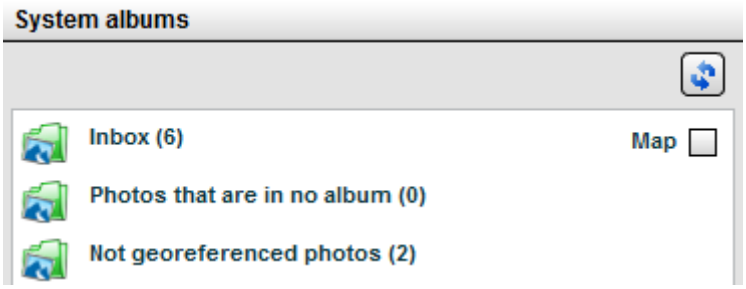
The System Album function is predefined by the system and contains the standard albums “Inbox”, “Photos that are in no album” and “Not georeferenced photos”.

On the other side, the function Photo Albums allows the user to create new photo albums. For more detailed information for both functionalities, please read the following.



3.1. SYSTEM ALBUMS

The function System Albums may be opened by simply clicking the corresponding bar. By default, you will find the albums “Inbox”, “Photos that are in no album” and “Not georeferenced photos”:



All newly uploaded pictures are automatically put into the inbox album

. If you tick the check-box “Map” on the right-hand side

, all pictures contained in the inbox will be displayed in the map.

By clicking the inbox icon
, the contents will be displayed in a new window:

Organise your Photos by Using Albums

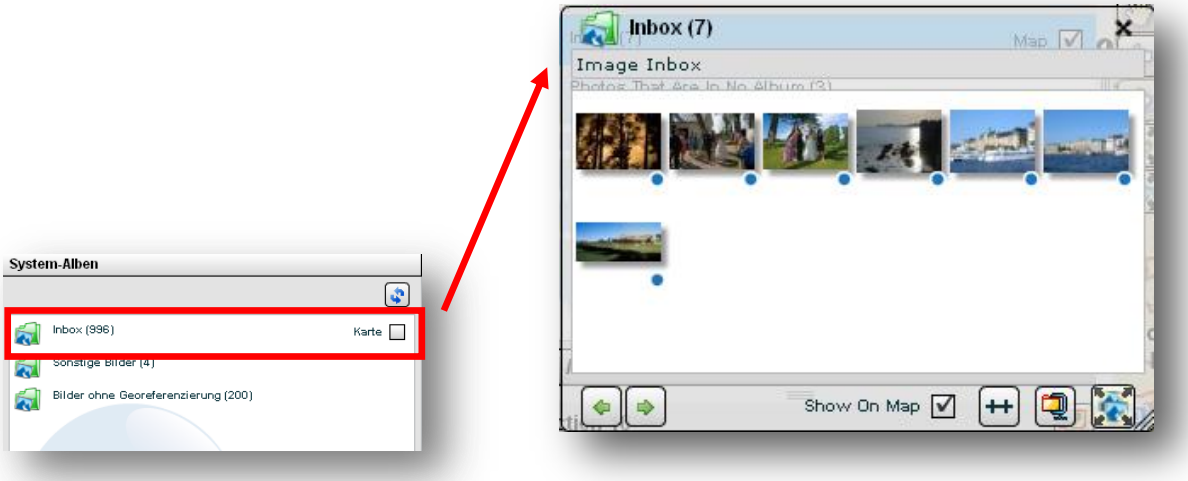
The system album “Photos that are in no Album”

, contains all pictures that weren’t yet assigned to a photo album by a user. Again, by clicking the respective icon, the contents will be opened in a new window.

Last not least, the album “Photos without Coordinates”

holds all pictures that were not yet georeferenced. They may be manually geocoded retrospectively within the application.

If you click on any album, the contents will be displayed in a new window.

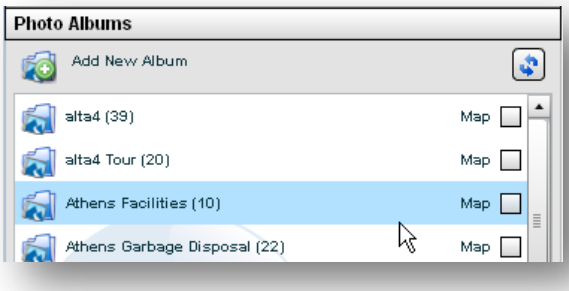


By using the arrow keys , the user may jump from one image to the next or previous. If you have ticked the function “Show On Map”, the image is illustrated in the map. The feature “Download Pictures as Zip-Files” allows the user to export and save data into a packed ZIP-archive. The button “Zoom to Album Extent” switches the map to the smallest possible map extent visualizing all pictures contained within the album. If you move the cursor across a picture within an album box, a little icon appears on the top right corner of the picture . This button allows deleting the respective picture from the album. By clicking the “Add all Pictures to Selection” button , all pictures of that album may be transferred to selection frame.

The size of the album windows may be altered by dragging the hatched bottom right corner. closes the window.

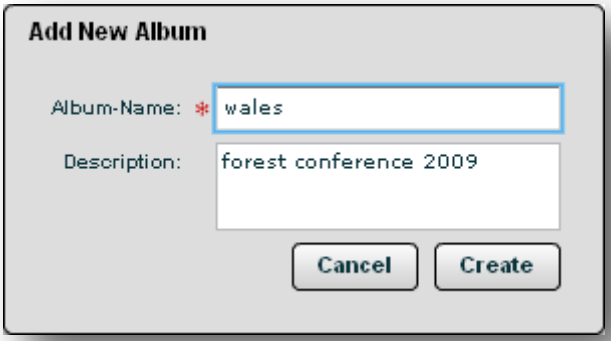
3.2. PHOTO ALBUMS

As for system albums, the photo albums function may be opened by clicking the corresponding bar. Different to the system albums, the window contains no predefined albums as the user may create their own albums and organize their uploaded photos in a sensible way.

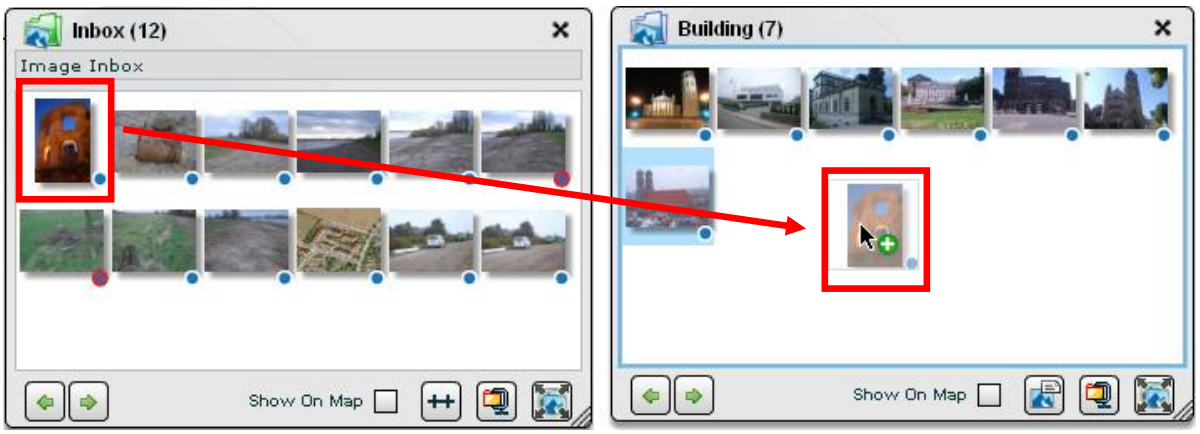


The function “Add New Album”

allows creating a new album. Here, you may define an album name and describe the contents.



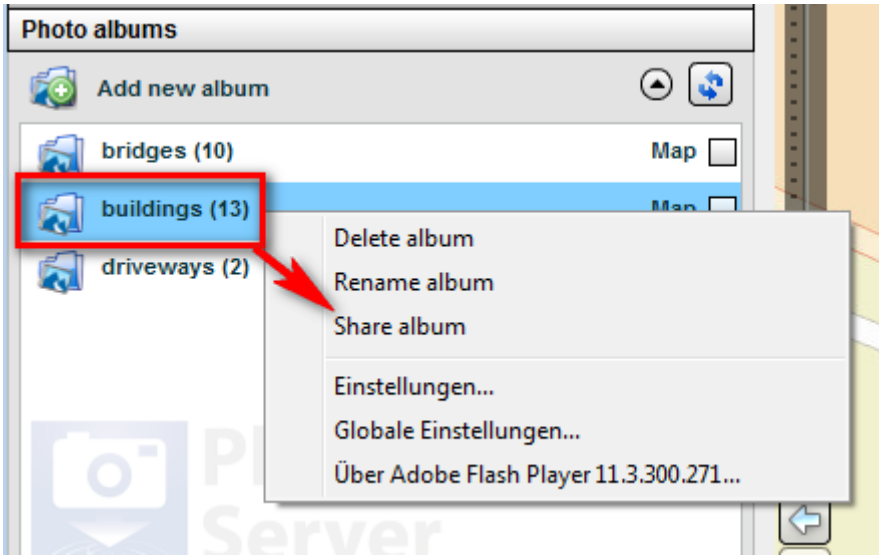
All albums created are listed in the photo album window. As in the system albums, the contents may be opened by clicking the respective album icon . The functionality is analogous to the system albums pop-up window. Again, you may fill the album by dragging & dropping pictures from another album, the selection or the thumbnail bar.



3.3. SHARING ALBUMS

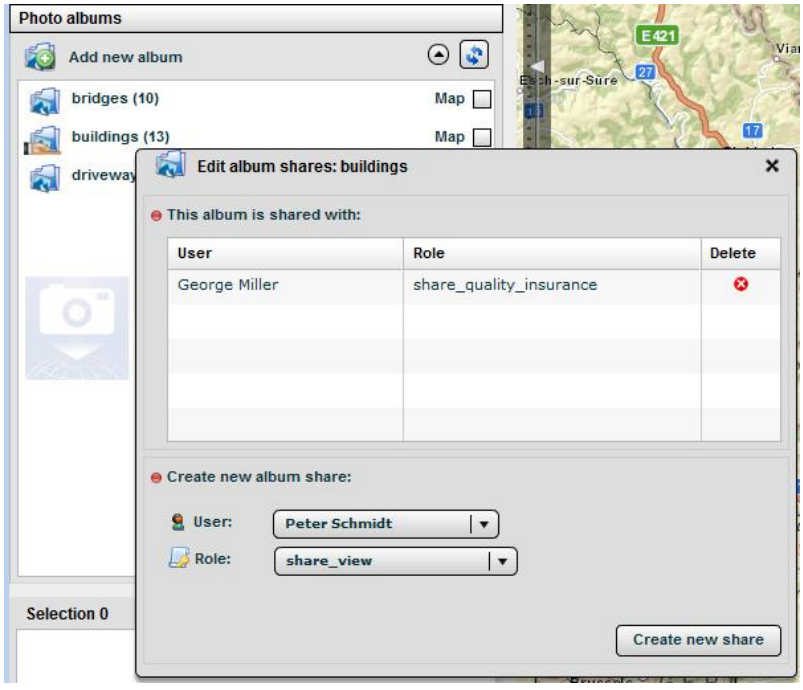
Sharing an Album means granting other users access to your photos. This access ranges from granting the ability to view the image over the ability to comment on an image to granting full access to the image just as you have it as the owner. These access rights are represented by roles that are defined by your administrator.

To share an album right-click the corresponding album in the photo albums list and choose the entry “share album” in the context menu.



A new window will pop up containing all shares already defined for that album. Furthermore you can define new shares in this window. To define a new share select the user you want to share the album with. Afterwards select the role you want to use for this share. To activate the share click the “Create new share” button.

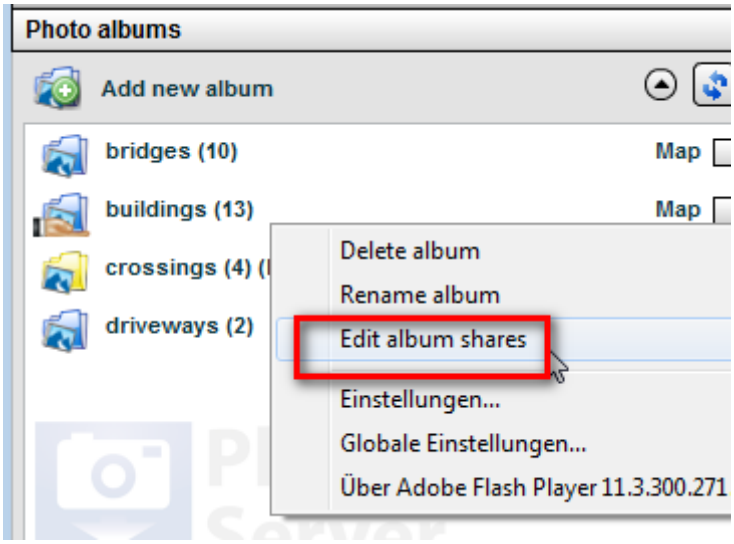
Keep in mind that the selected role defines which operations may be executed on your images in this share.



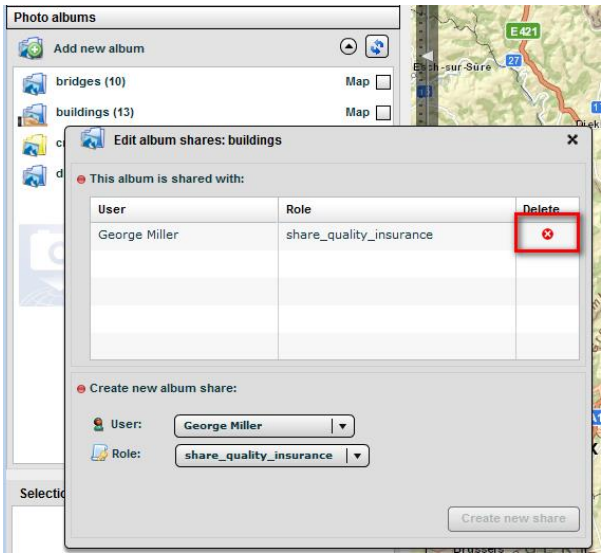
A folder that you’ve shared uses the icon .

An album that is shared by another user with you uses the icon .

To remove a share from an album, right-click the shared album and choose the entry “Edit album shares” in the context menu.



A new window will pop up containing all shares already defined for that album. Click the delete button next to the share you want to remove.



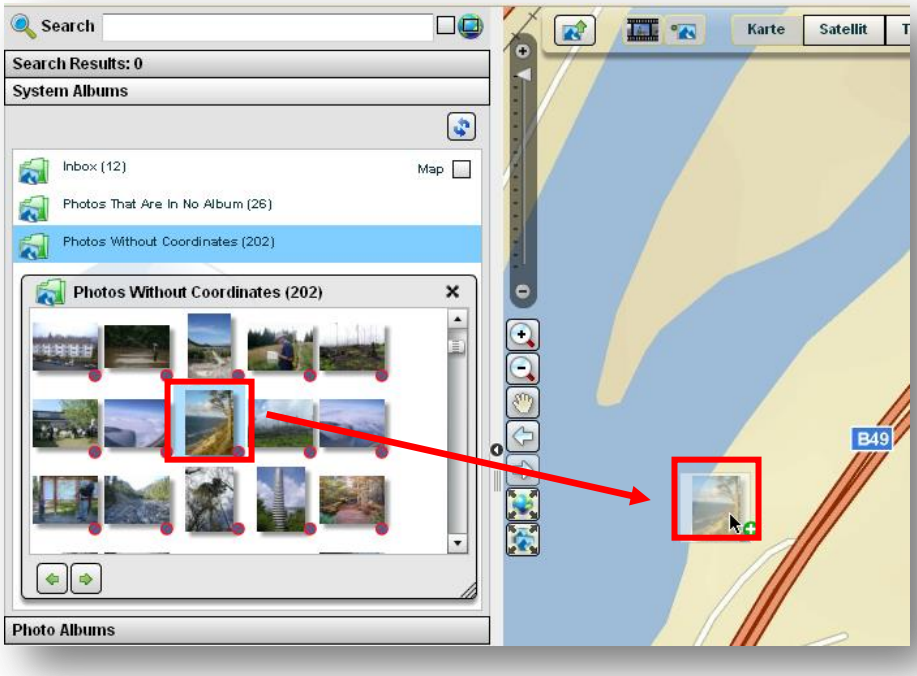
4. GEOCODE NON-GEOREFERENCED PHOTOS

Photos with coordinate information are automatically located by PhotoMapper Server. PhotoMapper Server, however, contains the function to retrospectively geocode photos without georeference.

In the first instance, the photos are uploaded and added to the dataset. To systematically identify non-georeferenced photos, please open the function “System Albums”. The system album “Without Coordinates” contains all photos lacking georeference. They may be manually georeferenced, retrospectively.

For clarity, all non-georeferenced photos may be distinguished by a red, crossed outline on the blue circle at the lower right image corner.

Georeferencing may be achieved by Drag&Drop. Click on the photo to be geocoded and keep the mouse buttion pressed. Then drag the photo to the desired location on the map and the lacking georeference will automatically be added.

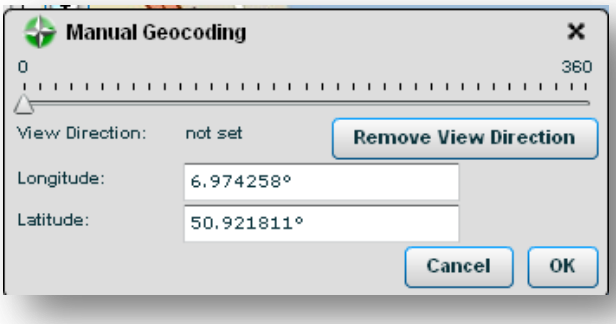


As long as you keep the mouse button pressed, you may alter the position by dragging. As soon as you drop, the image will be geolocated. A point will be added to map representing the georeferenced photo.

If you move the mouse cursor to that point, a cross appears. If you then keep the mouse button pressed again, the photo location may be changed again.

If you move the cursor around the point, a direction arrow appears. Move the crosshair around the point to define the viewing direction by yet another mouse click. With each additional click you may alter the arrow direction.

Simultaneously, with the first click on the map, the Manual Georeferencing dialogue is opened. Here, you may directly define the coordinates by typing them in. Furthermore, the viewing direction may be modified by moving the slide on the top.



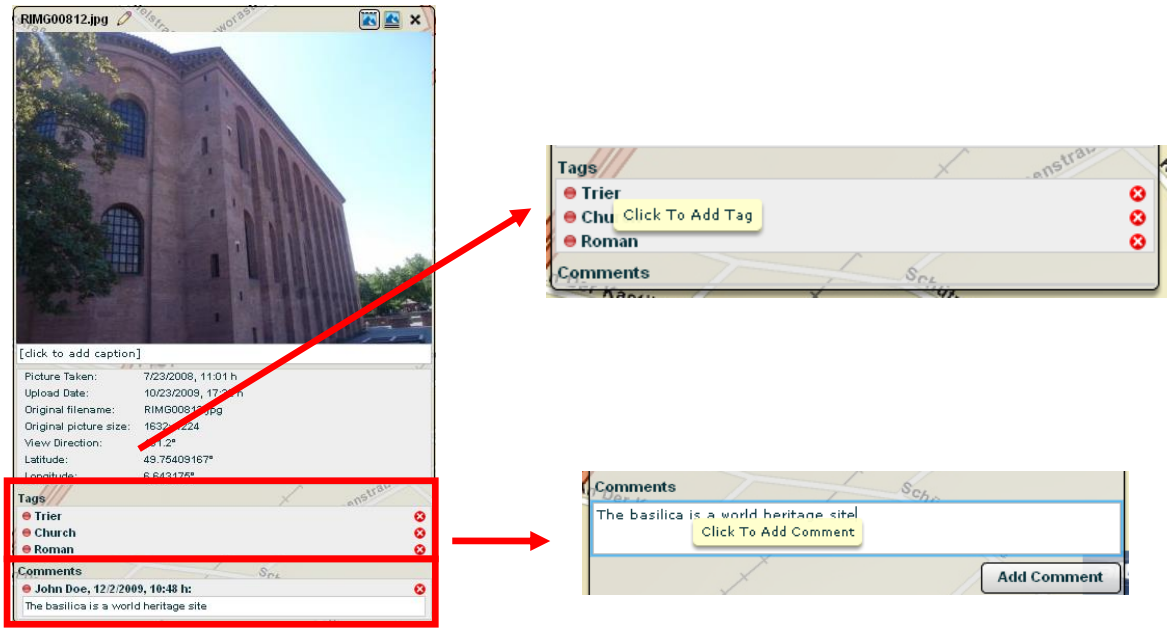
5. COMMENTING AND TAGGING

You may provide the uploaded photos with comments and tags. Thus, you link the photos with further information, making the locating of images using the search function more easily.

You may either comment and tag single photos or do this for a multitude of photos.

5.1. TAGGING AND COMMENTING A SINGLE PHOTO

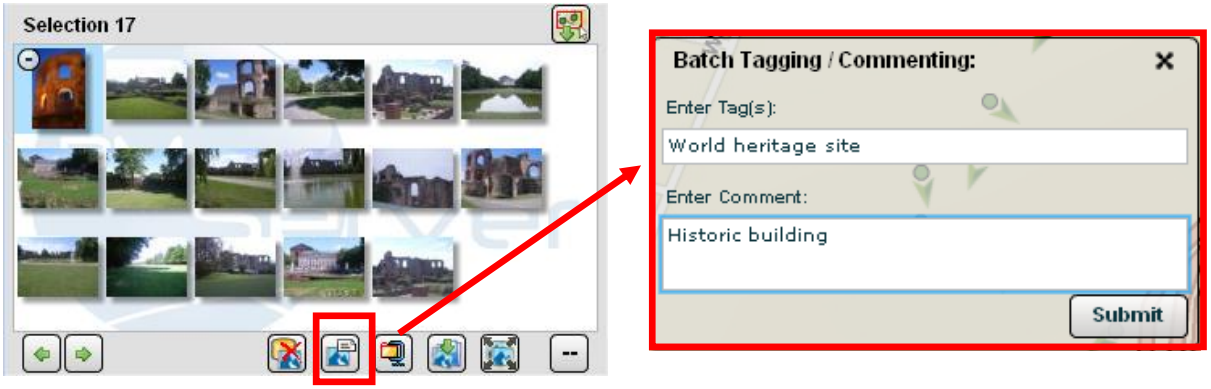
Open the single photo window by clicking it on the thumbnail bar. To add a tag, click on the title „Tags“, enter an appropriate tag and confirm your entry by the enter-key or by simply clicking on the button “Add Tag”. Repeat the steps to add more keywords.



To add a comment, click on the slider „Comments“, enter the desired comment into the field and click on the button “Add comment”. Repeat these steps for each further comment.

5.2. TAGGING AND COMMENTING FOR A SELECTION OF PHOTOS

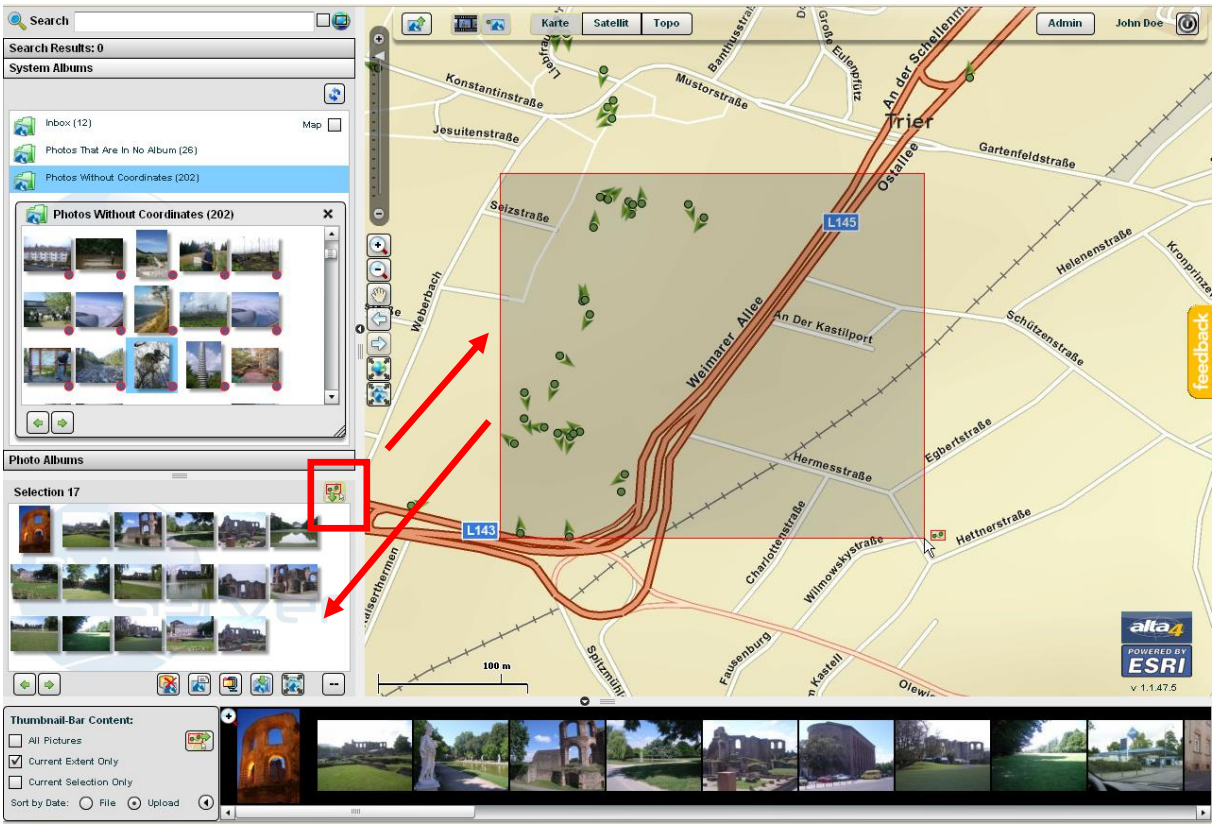
To tag and comment various images, first add the respective photos to the selection (see chapter “Create a Picture Selection”). From there you can use the button for multi tagging and inserting multiple comments.



More information on editing various photos may be found in chapter “Create a Picture Selection”.

6. CREATE A PICTURE SELECTION

In the display area, you may mark photo points using the button to select photos and add them to the lower part of the Selection window **Selection**. The tool zooms the map on all images within the selection.

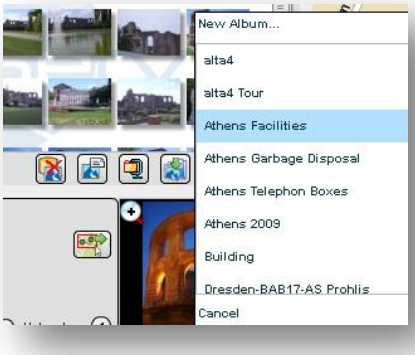


To create a picture selection, facilitates the work with the photos. You may assemble an album with distinctive photos and assign keywords and comments (Tag all Pictures in Selection) without having to tag each individual photo. If you, within the selection, click on a single picture, the maps will automatically be centered on that image and a photo view will be opened.

With the previous and next picture buttons, the selection jumps to the previous or next picture within the picture selection window. Furthermore, you may delete the contents of the selection window from the server by clicking the "Delete Selected Pictures from Database"-button. The button ("Clear Selection") removes all pictures from the selection, but they remain on the server. To remove single photos from the selection, click on the respective picture. Then a minus button appears on the upper right side of the photo. By clicking on that, the photo is removed from the album.

With the function „Download Pictures as Zip-file" you may export all photos as zip-file and save them to your local hard-drive. The tool ("Add Pictures to Album..") offers the function to add pictures to a photo album. First you have to mark the pictures you want to add to an album. Then click on the button and a menu will appear that shows all existing albums. If you choose an existing album, all marked pictures will be added to this album. Alternatively, you may create a new photo album and add pictures.

Create A Picture Selection

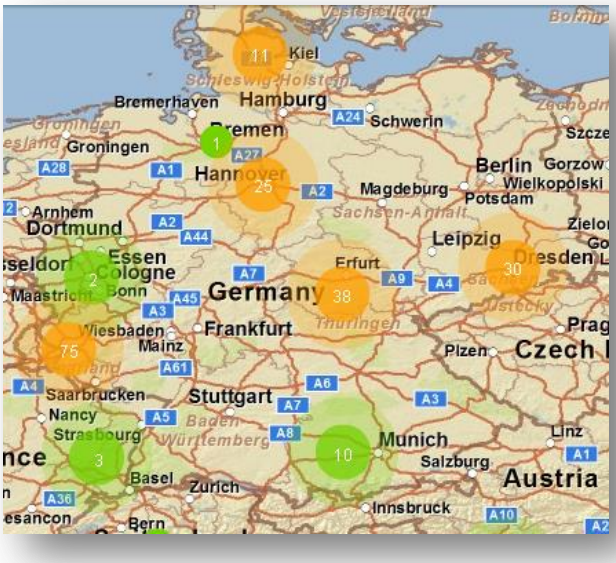


7. SEARCH FUNCTIONS

By means of different functions, you are able to search for specific photos. One of the search functions is to enter a keyword (“Tag”) into the search text box within the search frame on the left site of the browser. Likewise a direct search within the map may be performed.

7.1. SEARCH IN THE MAP

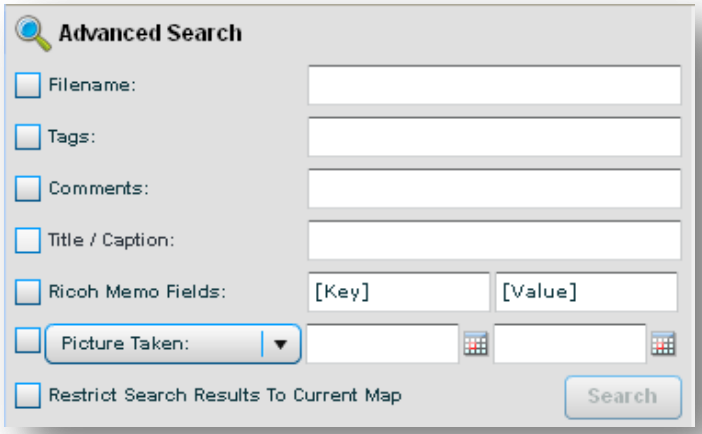
Photos that have already been uploaded to the database, are automatically located on the world map and, depending on the scale, the pictures may be assembled (“clustered”) to groups (“Cluster”). The count in the cluster represents the number of pictures which are available for this area. By clicking on a cluster circle, the map is automatically zoomed to the contents of this cluster and may show more sub-clusters. These may again be zoomed into by clicking on the sub-cluster.



The lowest zoom level displays the photos as single points. If a view bearing provided by the compass information is available, an arrow illustrates the direction.

7.2. SEARCH DIALOGUE

The function „search by attributes“, located in the search frame, offers several options. Either you may search by keywords (tags) or the content of the Ricoh Memo fields. The search results may be limited to the present map view . Furthermore, it is possible to define a particular timeframe, for example the picture upload timeframe. Clicking on the search function within the view frame opens the advanced search.



With the Advanced Search, you may search for file names, tags, comments, title/captions, Ricoh memo fields or within certain time frames.

The search by the content of the Ricoh Memo fields is only available, if the photos were taken with a Ricoh camera and the Memo fields within the “exif-Header” have been filled with information. Within the first entry box [Key] the name of the memo field is entered, and in the second field [Value], the value to be searched.

The search option “Picture Taken:” allows you to limit the search in relation to the picture acquisition or upload date.

The search results will be displayed as thumbnails in the search results. If you select a single picture by double-clicking, this picture will automatically be centered in the map view and the single photo viewer gets opened.

The search results frame includes further buttons. Using the arrow-buttons („Previous/Next") provides the option to shift to the previous or next photo within the search results. By using the button ("Add All Pictures to Selection") you may transfer all pictures in conjunction to the selection frame. The function („Pictures with no Coordinates Only") refines the search results with respect to photos with missing coordinates. Non-georeferenced photos can thus be identified easily. They are marked with a red bordered and crossed blue circle at the bottom right corner of the photo, while georeferenced photos are marked only with a white bordered blue circle.

The buttons switch the type of display ("Preview" and "Preview and Detail"). The type "Preview and Detail" additionally shows the date of record and upload for each photo. If the recording date is missing in the exif-information, only the date of upload will be displayed. If you check the box "Show on Map", you may view the selected pictures in the map.

7.3. SEARCH FOR LOCATIONS

PhotoMapper Server offers the possibility to search for locations via a search field. The search is using geocoding services from „GeoNames". It's limited in the amount of requests.

Note: alta4 can not guarantee the quality of search results and the efficiency of the search at any time.

The service is provided by GeoNames (http://www.geonames.org/) under the creative commons license 3.0 (http://creativecommons.org/licenses/by/3.0/).

8. NAVIGATION

The navigation bar on the left provides features for navigating and zooming in the map. Tool tips explain each button's functionality when you move over them. The buttons will be explained in more detail in the following.

8.1. ZOOM FUNCTIONS

The scrollbar regulates the zoom level. These are various scales that may be selected. You can either select the desired zoom factor by the dragging the grey arrow, or by clicking the and buttons to zoom stepwise into and out of the map. You can also use your mouse wheel for continuous zooming.

Special areas may be zoomed into or out using the respective magnifying glasses ( ).

The button "Zoom to Extent of All Pictures" extends the display to visualize all photos loaded into PhotoMapper Server. The smallest possible map extent will be applied.

On the other side, the "Full Extent" button switches to the complete map, i.e. the world view.

8.2. NAVIGATION FUNCTIONS

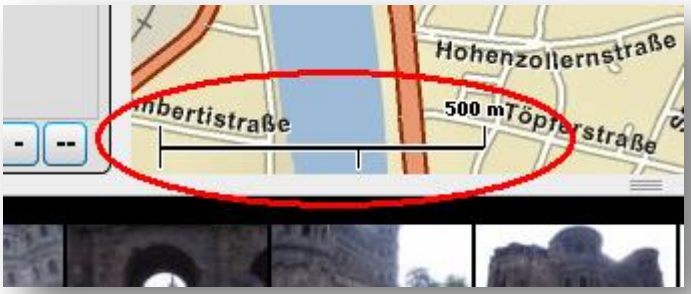
Beside the zoom functions, the navigation bar offers several navigation features.

By selecting the "Pan Mode" , a hand symbol appears with which, by pressing the left mouse key, the user may move in the map.

With the buttons „Previous extent" and "Next extent" you can call back the last or forward to the next extent.

8.3. SCALE BAR

The scale bar in the lower left part shows, for each zoom factor, an automatically updated scale bar in kilometer or meter units to facilitate the orientation in the map.



8.4. OVERVIEW MAP

The overview map is opened on the left side of the map window when you start the application.
It can be freely positioned on a map.

You can pan within the overview as well as in the main map by using the cursor.

9. PRESENTING PICTURES

9.1. THUMBNAIL BAR

The toolbar includes the function “Enable/Disable Thumbnail Bar”. Here, you may enable or disable the thumbnail bar at the bottom of the browser window. Depending on the setting, the toolbar displays all pictures of the database or only a selection. The thumbnail bar options offer the possibility to select by different parameters.

On the basis of the thumbnail bar options, you are able to display all pictures, only the thumbnails for the photos of the current extent or the thumbnails for the photos of the current selection. In addition to that, you can sort the thumbnails by date of record (file) or date of upload (upload). With the arrow icon , the order may be switched.

By clicking on one of the thumnails, the associated picture will automatically be centered in the map view and the single photo viewer will be opened in a new frame.

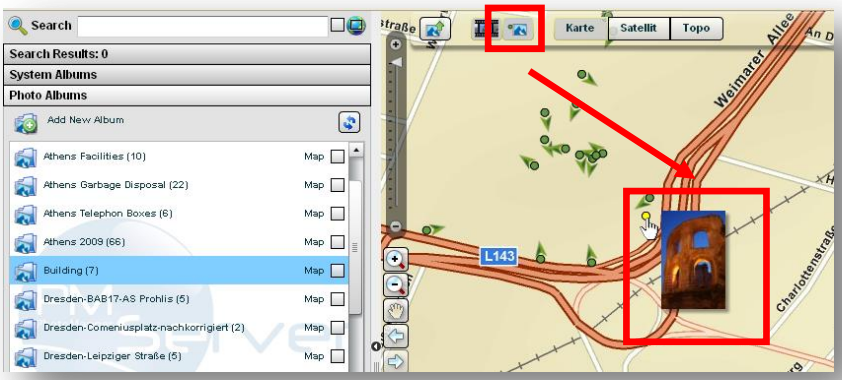
With you may enable the “Auto Zoom” functions, and by clicking a picture, the picture will be opened in a bigger view and the map will automatically be zoomed to the respective photo. By clicking on the symbol, you may disable the feature, the icon then additionally includes a little lock .

After pressing you may define a rectangle collecting photos of the current map extent. The images from the thumbnail bar may be moved by drag & drop.

When you move the cursor over a thumbnail picture, the buttons appear at the lower right corner. They allow for either anti-clock or clock-wise photo rotation.

Finally, you can close the thumbnail bar with or .

9.2. IMAGE PREVIEW



The option „Activate/Deactivate Thumbnail on Mouse-Hover Over Point in Map“ provides the possibility to activate or deactivate thumbnails if you touch any point in the map. If the function is activated, the button is colored in a dark grey while in deactivated state the color is light gray. Touching any point in the map, in an activated state, a small thumbnail of the photo will appear next to the point.

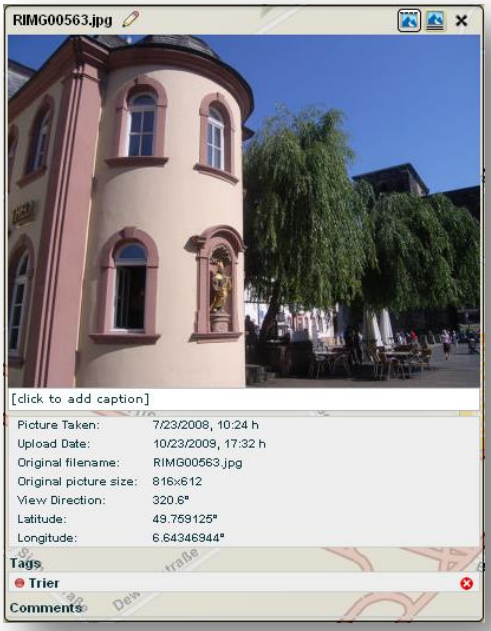
9.3. SINGLE PHOTO VIEW

Single photos may be enlarged in a pop-up window to be visualized or to be edited. The single view is opened when you click on a picture point or on a photo on the thumbnail bar, in the selections, your search results view.

With the buttons , either the picture or the picture and its ancillary information (data, comments, tags) are displayed. In the simple view, four tabs allow the display or enter additional information or comments, tags.

When the user moves the cursor into the photo, four buttons for further modification become available. With these the user can rotate the picture ( ), modify the localization, change the view direction ( ), center the map on the respective picture ( ) or delete the file from the server ( ). The input field in the picture's bottom line can be used for subtitles.

Left-clicking the photo opens a new browser window with the image in its original size. By right-clicking and selecting “Save as” it may be downloaded including all exif information.



Underneath the picture, the photo information is shown. Furthermore, the Ricoh memo fields are displayed if they have been detected during the image acquisition.

The tab “Tags” lets you enter keywords (“tags”). Thus, on one hand you may enter additional information, and on the other hand, you may filter you pictures by using these keywords as search parameters.

The last tag “Comments” allows the entry of further statements for detailed explanations about the photo.

10. LOGIN AND LOGOUT

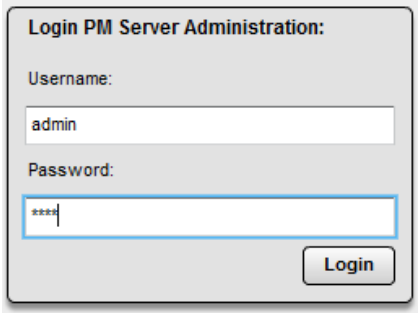
Within the authorization and administration domain, the user may close the application with the button . The PhotoMapper Server login-windows pops up, where the users may log on with username and password.

11. ADMINISTRATION

You can access the administration interface by clicking the „admin“ button in the top right corner of the user interface

You will be asked for a username and password which you have set in the tomcat-users.xml. This access should only be known by the administrators of the system.
You will then be prompted for the PhotoMapper Server user account. By default, you get access via:

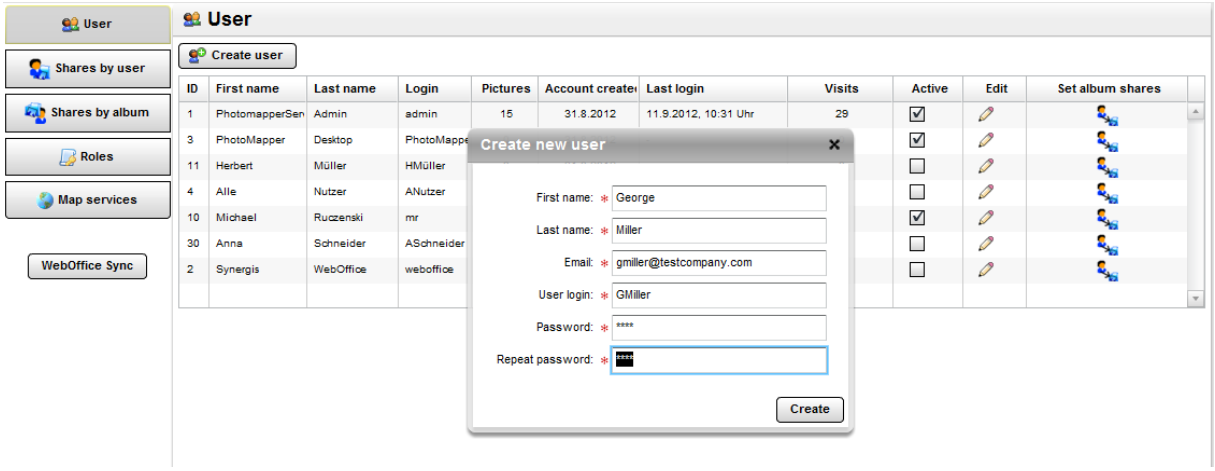
USER: admin
PSWD: test



Please immediately change the password in the user settings.

USER

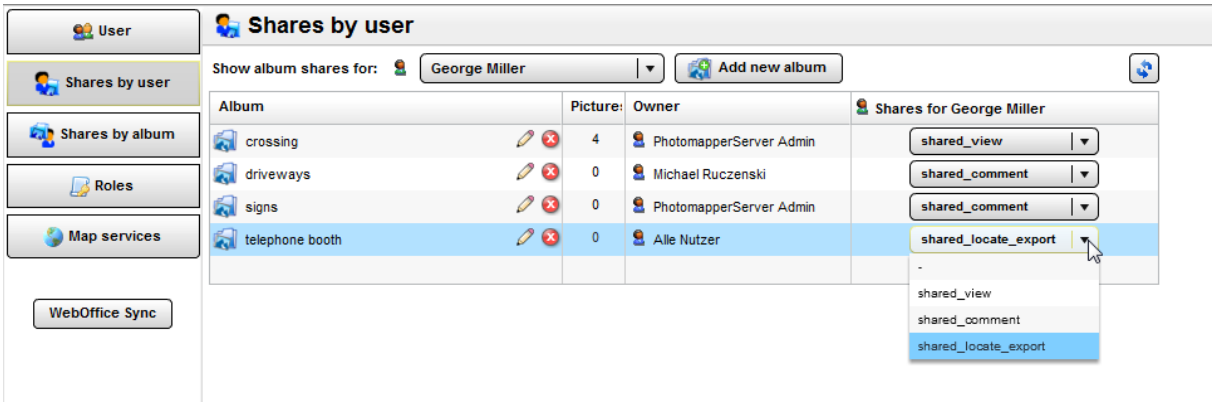
In this section you can manage the users of your PhotoMapper Server instance. You can add users, change their information, activate ☑ or deactivate them. Besides managing your users this section contains additional information on your users (e.g. Number of pictures, last login). Furthermore you can share an album with a user .



Note: If you edit an existing user account via you'll have to define a new password.

SHARES BY USER

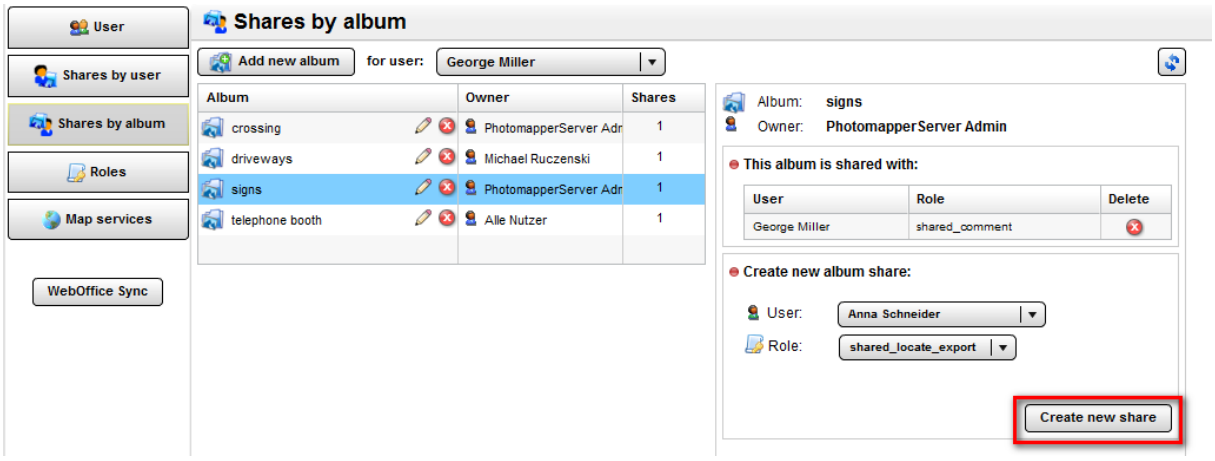
This section provides an overview over all albums and their owners. Not only can you create, edit or delete albums but also you can view the shares to an album and change the role assigned to this share.



SHARES BY ALBUM

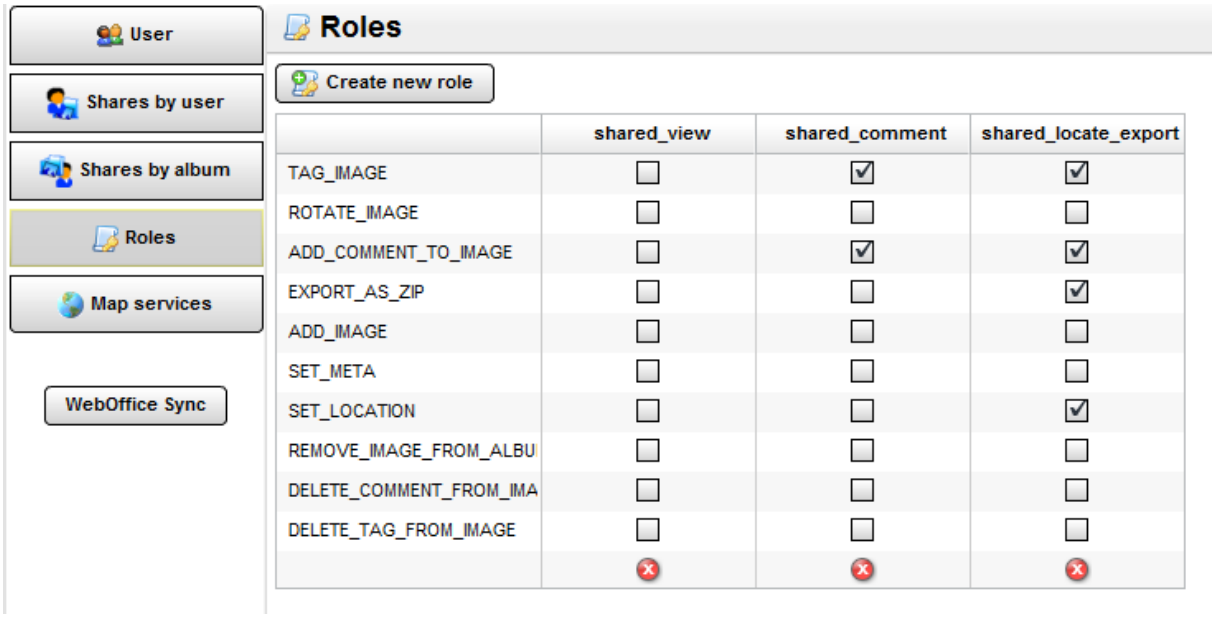
This section offers access to a list of all albums and their corresponding users. In contrast to the previous section you can add user specific albums. When an album from the list is selected additional information and managing options are provided. Here you can create or delete shares on the selected album.

Über diesen Punkt erhalten Sie Zugang zu einer Auflistung aller Alben mit den dazugehörigen Nutzern. Im Unterschied zu dem vorhergehenden Administrationsbereich können Sie Alben für einzelne Nutzer anlegen. Wird ein Album in der Liste ausgewählt erhalten Sie weitere Informationen und Verwaltungsmöglichkeiten für das Album. Man kann hier Freigaben erstellen und löschen und den Nutzern direkt Rollen zuweisen.



ROLES

The next section “roles” makes functions available to create roles and attach specific system rights to them. These roles can belatedly be edited or deleted .



The function short names and their meaning

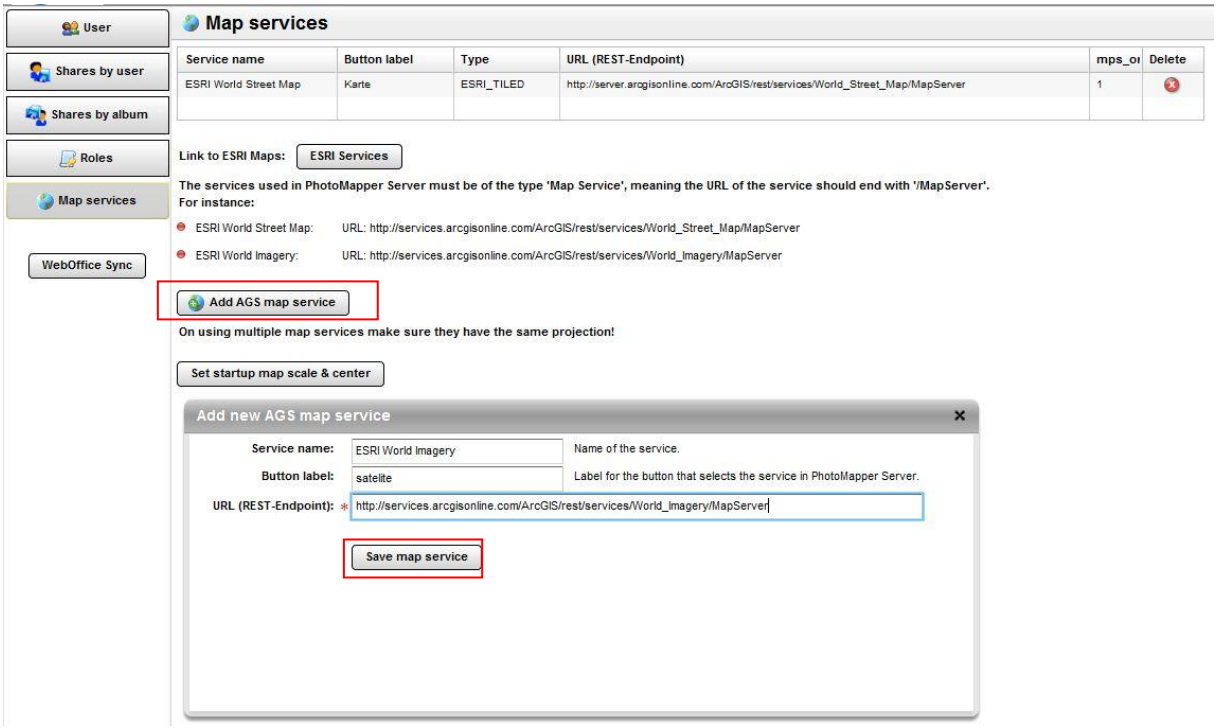
Function Short Name	Function
TAG_IMAGE	Tag picture
ROTATE_IMAGE	Rotate picture
ADD_COMMENT_TO_IMAGE	Add comment to picture
EXPORT_AS_ZIP	Export as .zip file
ADD_IMAGE	Add picture
SET_META	Add picture subtitle
SET_LOCATION	Set the geographic reference system
REMOVE_IMAGE_FROM_ALBUM	Remove picture from album
DELETE_COMMENT_FROM_IMAGE	Delete comment from picture
DELETE_TAG_FROM_IMAGE	Delete tag from image

MAP SERVICES

With the help of this section you can manage different map services for the background mapping. You have the possibility to add or delete a map service. In total you can embed up to three different map services.

All you need to add a map service is the URL which provides the map service. You can freely edit the name of the service and the text on the map service button. In case the button “Add AGS map service” is not available you already have three map services embedded. To add another map service you would need to delete one of the previously embedded map services.

On his next login the user will see the button with the new map service.



Also own map services can be added. Supported are those mapping services that are published through ArcGIS Server 9.3.x and ArcGIS Server 10. Note that the services must be of type "Map Service" and that the URL ends with “/MapServer”. The service must be accessible via the following structure:

- ESRI World Street Map: URL: http://services.arcgisonline.com/ArcGIS/rest/services/World_Street_Map/MapServer
- ESRI World Imagery: URL: http://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer

Use only services with a particular projection at the same time. EsriMaps and BingMaps use the projection "WebMercator".

It is important that the map service can be reached by PhotoMapper Server. The root directory of your MapServer must have a crossdomain.xml file. This should be created by experienced web administrators to set permissions accordingly. The contents of the file might look like this:

```
<!DOCTYPE cross-domain-policy SYSTEM "http://www.adobe.com/xml/dtds/cross-domain-policy.dtd">
<cross-domain-policy>
<site-control permitted-cross-domain-policies="all" />
<allow-access-from domain="*" secure="false" />
```

```
<allow-http-request-headers-from domain="*" headers="Authorization" />
</cross-domain-policy>
```

The Administration domain may be accessed by the “Admin”-button: