

BlomURBEX™

MapInfo Plug-in v3.5.0

User manual

Audience : **BLOM ASA partners and developers**

Abstract : User manual for **BlomURBEX™** MapInfo Plug-in

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Revision History

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BUMP 2	December 2010	Document for release 2.5.2
BUMP 3	November 2011	Feature Improvements. Release 3.0.
BUMP 4	November 2012	New toolbar and more stability. Release 3.5
BUMP 5	December 2012	Bug fixes and simpler installation. Release 3.5



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1 Introduction

BlomURBEX is a collection of Web Services provided by Blom that allow to navigate through high-detailed maps with ortho and oblique imagery, and to fly through 3D immersive cities. In addition, the Web Services can be invoked to obtain measurement information about buildings and other map elements.

Blom leverages in Europe and around the world the production of a huge image and 3D model database of more than 900 cities, and the database increases each month as new countries are included in it. BlomURBEX offers the most detailed and comprehensive imagery database and 3D models of urban places in the market.

Based on the same interface, Blom is developing a full range of Plug-ins that integrates BlomURBEX services in common GIS and CAD applications. Blom development roadmap with BlomURBEX includes the following targets:

- BlomURBEX Plug-in for ESRI ArcMap (ArcView, ArcEditor and ArcInfo)
- BlomURBEX Plug-in for ESRI ArcIMS
- BlomURBEX Plug-in for ESRI ArcGIS Server
- BlomURBEX Plug-in for Intergraph Geomedia Professional
- BlomURBEX Plug-in for Intergraph Geomedia WebMap
- BlomURBEX Plug-in for Autodesk Map and AutoCAD
- BlomURBEX Plug-in for Autodesk MapGuide
- BlomURBEX Plug-in for Bentley MicroStation
- BlomURBEX Plug-in for MapInfo Professional
- BlomURBEX Plug-in for MapInfo MapXtreme

Contact Blom at <http://www.blomasa.com/contact.html> for new releases and updates.

2 Version changes

Version 3.5.0 of BlomURBEX Plug-in for MapInfo includes these improvements:

- Removed callback functionality causing Mapinfo crashes, and replacement with new buttons in BlomURBEX toolbar inside Mapinfo.
- Better stability.
- Fixed bug causing certain projections to not work.
- The bugs fixed are these:
 - #190 - A problem showing coordinates on top of the images and in the status bar. Also a new option has been added that allows to copy the coordinates of the status bar with a double click in it.
 - #903 - Images are not correctly seen in a finish library that was having problems.
 - #841 - Suomi translation not correct.
 - #852 - Last oblique is still visible when the datasource is unloaded. This is due to the cache design and works as expected.
 - #1031 - Oblique imagery is not seen correctly.
 - #853 - Mapinfo plugin has been redesigned to avoid crashes due to bad callback support in Mapinfo API.

Version 3.0.0 of BlomURBEX Plug-in for MapInfo includes these improvements:

- Added support for adding Blom Library as a data source.
- "Display measurement tool results" option has been removed from "Printing" options in "Settings".
- Better navigational controls for map.
- Proxy settings will now get detected automatically.

Version 2.5.2 of BlomURBEX Plug-in for MapInfo includes these improvements:

- Fixed an error that causes a crash when viewing obliques.
- OSGB36 projection supported.
- Fixed a problem for viewing overlays in one view of multi-view layouts.
- Fixed a problem refreshing overlays in obliques.
- NTLM and Kerberos proxy authentication support

Version 2.5 of BlomURBEX Plug-in for MapInfo includes these improvements:

- All the rendering is done asynchronously.
- Height measurement now uses a BlomURBEX service to obtain the best angle in the oblique image to force the measurement in a vertical direction.
 - Better resize to avoid flickering.
 - Vector overlay on top of oblique imagery can be done through a bilinear interpolation, fastening the rendering. This is now the default option for overlapping vector data. The option can be changed or deactivated in options.

- A new option in settings can change the priority order for the basemap. Now it is possible to prioritize between the different ortho images ("pictometry", "Countryortho" or "satellite") present sometimes at the same zoom level in the server.
- Other tile layers in BlomURBEX server can be overlapped selecting them in the options dialog.
- This user manual has been expanded with information about how to add BlomURBEX services as WMS layers.
- Product and version number appears in About dialog.
- Print error that occurred after printing is fixed.
- Tooltips close when the map loses focus.
- Default zoom and orientation has been fixed.
- Views are now correct when changing between different layouts.
- This manual contains information about how to save BlomURBEX toolbar position.
- Bug fixed with double sync between map and BlomURBEX viewer.
- Bug fixed with Extract image tool.
- Proj4 DLL is no more used, but DotSpatial is used instead.
- Installer uses bootstrap to download from web required prerequisites.
- More accurate measurements in distance and area.

Version 2.0.3 of BlomURBEX Plug-in for MapInfo includes these improvements:

- Use of DLL calls instead of DDE deprecated technology that makes more stable the Plug-in.

Version 2.0 of BlomURBEX Plug-in for MapInfo includes these improvements:

- Internet Explorer 7 not needed. New BlomURBEX viewer does not require Internet Explorer 7 to be installed or any other web browser. The Plug-in manages requests on its own.
- A new image cache owned by all the Plug-ins speeds bitmap recovery and makes it easy to manage the Plug-ins cache. No more the browser cache is used.
- Easier installation. BlomURBEX viewer component is not a previous install requirement. Plug-in installer checks if viewer is installed, and if not, then installs it. The viewer is never uninstalled to avoid other Plug-ins to stop working.
- Better performance. New BlomURBEX viewer is not JavaScript based but .NET based, and executes code faster.
- New option to choose the date of the imagery, allowing to see history changes in images, and seeing different years in a side-by-side mode.
- Year of the current visible image in a label at the bottom of each view.
- Intelligent behaviour when zooming. If a better view mode or orientation exists for current zoom then it is loaded automatically.
- Faster vector overlay on obliques. The new BlomURBEX viewer sends fewer requests to transform vector data between ortho and oblique, and draws vector data faster.
- Better geometry support. Now holes in polygons are supported and also multi geometries.
- More symbology supported. Vector overlay is rendered in BlomURBEX viewer maintaining more symbology settings from MapInfo.
- A new button in toolbar to enable/disable vector overlay faster than changing settings.
- Print improvement. Print and export now support vector overlay.
- Log levels to better grained logging and a default folder for storing logs in just one file.

- A new tool for extracting images has been added. If image exported is ortho view, then the world file is saved for easy use in GIS packages.
- Proxy settings support
- Full support of Windows versions from XP to 7, including 32 and 64 bits versions.

3 System requirements

MapInfo Professional

BlomURBEX Plug-in for MapInfo supports versions 11.5 and 11.0 of MapInfo Professional. It is required to have any of these versions installed in order to execute BlomURBEX Plug-in for MapInfo.

Microsoft .NET Framework 2.0 and 3.5 (installed by setup if not present)

BlomURBEX Plug-in for MapInfo is developed with Microsoft .NET Framework 2.0 and 3.5. During installation, if these Frameworks are not present, they are downloaded and installed.

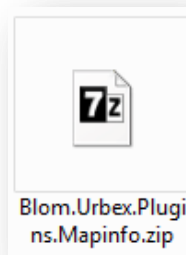
User Token

To access BlomURBEX Web Services a UserToken is needed. This UserToken is an encrypted string that authenticates each user request. To access BlomURBEX offline libraries a license file is needed. Contact with Blom Marketing Department to obtain the required UserToken or license file in:

<http://www.blomasa.com/contact.html>

4 Installing BlomURBEX Plug-in for MapInfo

Now the plug-in installation is very easy. The plug-in is a ZIP file. To install just unzip it to any preferred location.

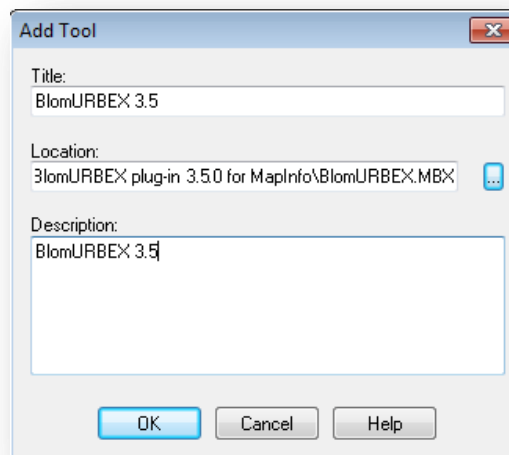


5 Starting with BlomURBEX Plug-in for MapInfo

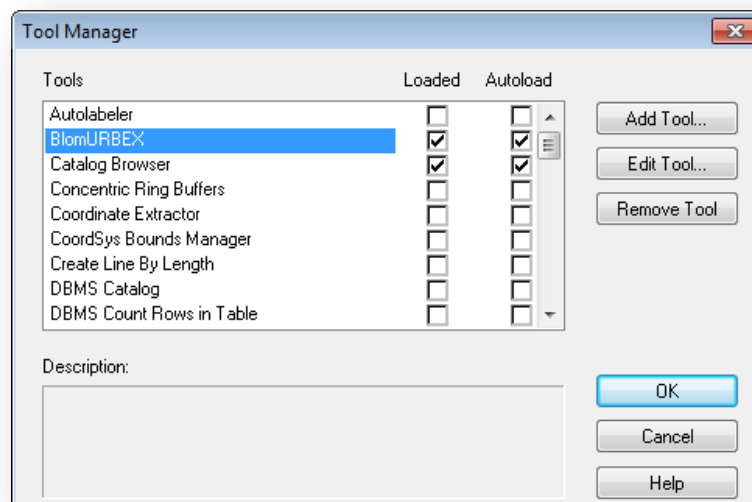
5.1 Setup the BlomURBEX Viewer Plug-in in MapInfo

To execute the Plug-in, follow these steps:

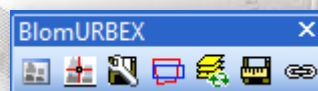
1. Start MapInfo Professional.
2. Select the MapInfo menu Tools > Tool manager.
3. Click in "Add tool..." button. The Add Tool dialog box opens. Type any name you want for BlomURBEX Plug-in in the Title textbox. Click in the "..." button to search for the BlomURBEX.MBX file you will have in the Plug-in installation folder. Type any description you want for BlomURBEX Plug-in. Then click OK to accept.



4. The BlomURBEX Plug-in will be added to the list of current Plug-ins for MapInfo. Select the new Plug-in in the list and check the Loaded checkbox to load the Plug-in, and the "Autoload" checkbox if you want the Plug-in to get loaded whenever you open MapInfo.



5. Click OK in the Tool manager. You will see now the Blom toolbar with several buttons. This is a onetime setting. From now on the BlomURBEX plug-in will appear anytime inside Mapinfo.



In MapInfo Professional last versions it is not possible to save the position of the toolbars and they will open each time in a default location. Relocate to the preferred position whenever needed.

5.2 Adding Data Sources

To start using the BlomURBEX plug-in first is needed to configure the plug-in. The first task is to set the location of the data to use. A Data Source is a repository of complex cartographic data.

Current version of Plug-in supports two different Data Sources:

1. BlomURBEX™ online services
2. Blom Libraries offline

It is possible to use only one of them at the same time.

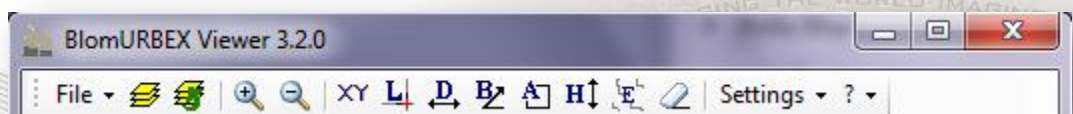
5.2.1 Adding BlomURBEX™ as a Data Source

To add BlomURBEX online services as a datasource, follow this steps:

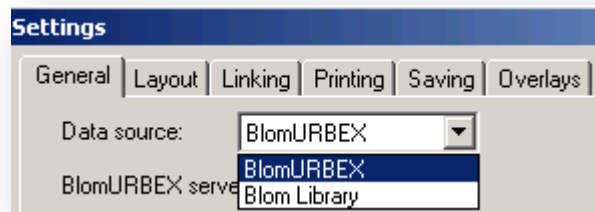
1. Open the BlomURBEX Viewer with a click in the "Show BlomURBEX window" button in the BlomURBEX plug-in toolbar.



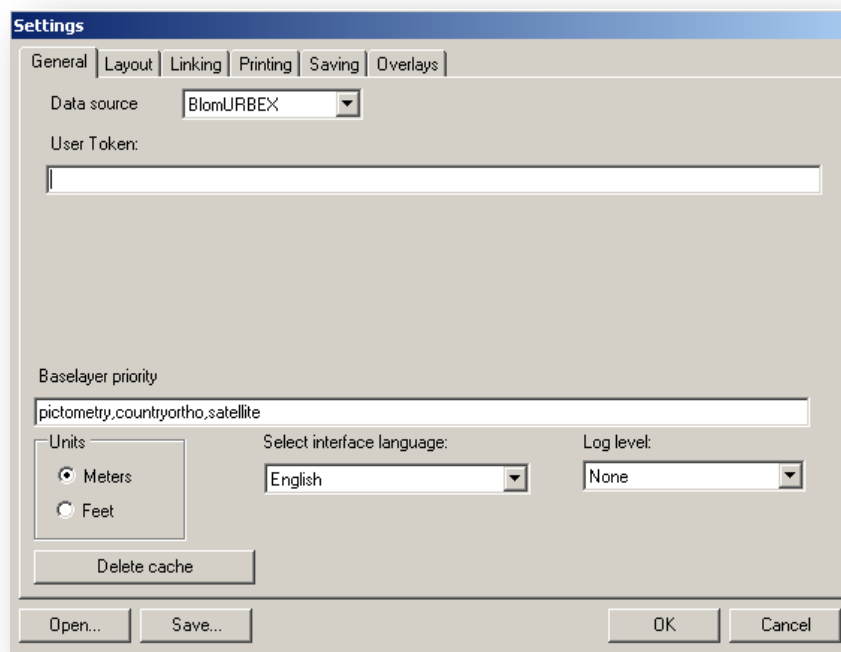
2. After some seconds the BlomURBEX viewer opens. Initially it should show a black map with no data, some zoom controls in the map, and a toolbar. In the BlomURBEX Viewer toolbar, select the menu Settings > Open settings dialog, to open the Settings dialog.



3. In the dialog select General tab.
4. In the Data Source drop down select "BlomURBEX".



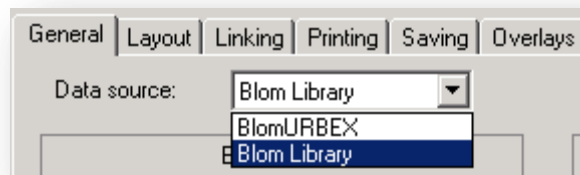
5. In the "User token" textbox type the UserToken provided by Blom. This UserToken is an encrypted string that authenticates each user request. Contact with Blom Marketing Department to obtain the required UserToken. The UserToken is needed to connect to the BlomURBEX Web Services and allow the access to the imagery.



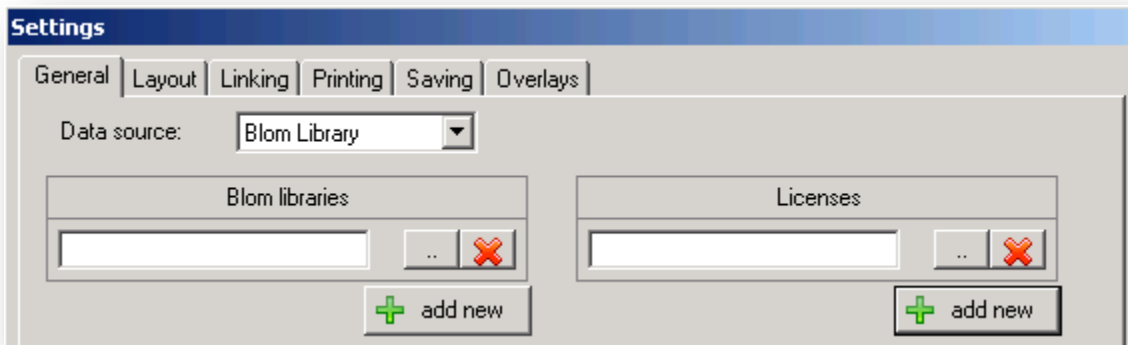
6. Click OK button to finish configuration.

5.2.2 Adding Blom Library as a Data Source

1. Open the BlomURBEX Viewer as previously indicated.
2. In the BlomURBEX Viewer toolbar, select the menu Settings > Open settings dialog, to open the Settings dialog.
3. In the dialog select General tab.
4. In the Data Source drop down select "Blom Library".



5. Select the Blom Libraries:
 - Click in the button with the ellipsis. Browse for a Blom Library folder. Select the root folder of the library to add.
 - Click "add new" button in order to add multiple libraries.
6. Select Library Licenses:
 - Click in the button with the ellipsis. Browse and select a valid License.
 - Click "Add New" button in order to add multiple licenses in case there are more than one library.
7. In order to remove a Library or a License, click delete button next to it.



8. Click OK button to finish configuration.

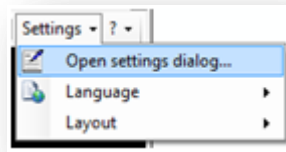


BlomURBEX Viewer in MapInfo is an independent window not dockable. MapInfo does not support dockable windows.

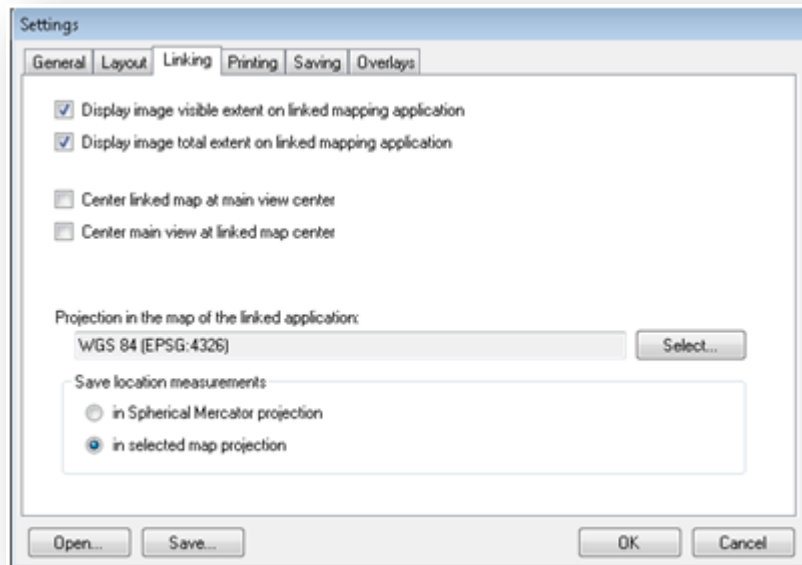
5.3 Setup the BlomURBEX Viewer basic options

The next thing to do in an plug-in that uses BlomURBEX Viewer is to specify some other options in order that the viewer can correctly search for images. For this follow the next steps:

1. Open BlomURBEX Viewer window as previously indicated.
2. In the BlomURBEX Viewer toolbar select the menu Settings > Open settings dialog to open the Settings dialog.

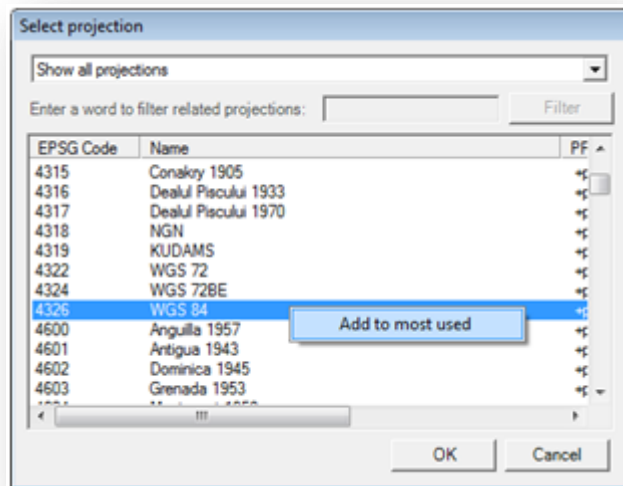
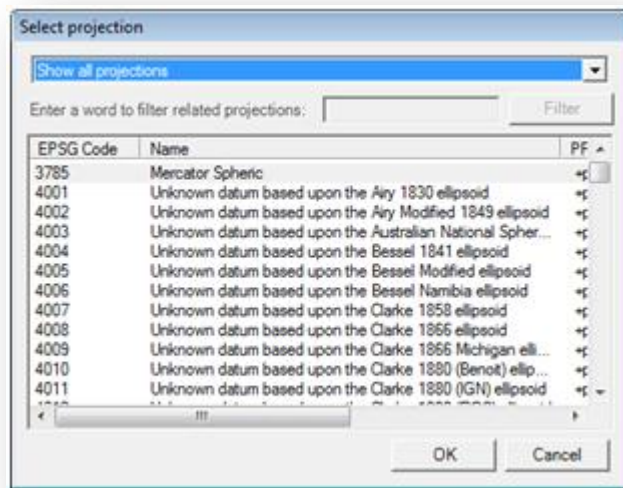


3. Select the Linking tab. It is needed to indicate BlomURBEX Viewer which projection has the currently opened map in MapInfo. Follow next steps:

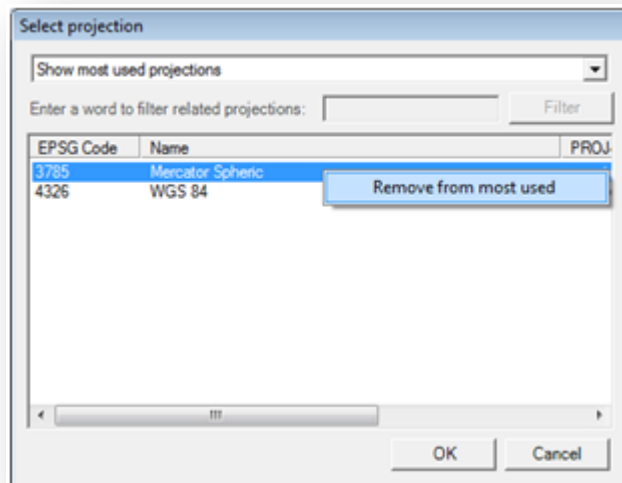
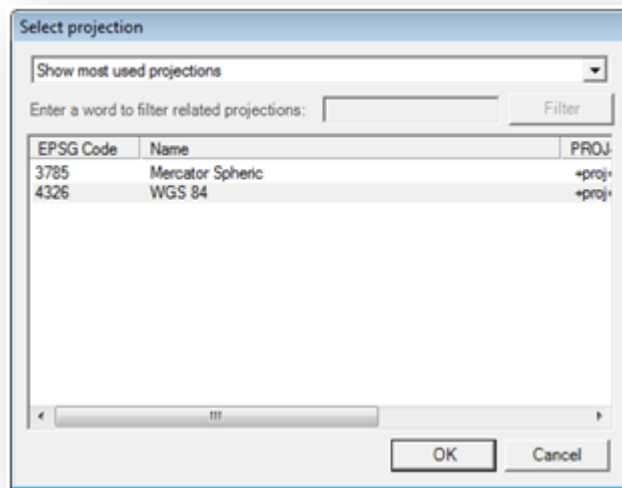


4. Click in the Select button to open the "Select projection" dialog. In the dialog select in the available projection list the one that the basemap has. There are different options to select the desired projection:

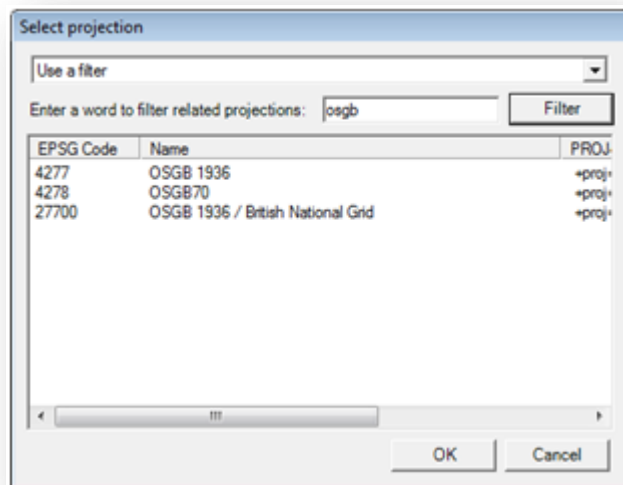
5. To select a projection from the full list of supported projections, choose "Show all projections" in the upper dropdown box. To select click in the list and then click in OK, or double click an item in the list. Any item chosen will be reminded later in a list with the most used projections, so it is not needed to find it again in the long list. Also, it is possible to add any item to this "most used" list without leaving the dialog clicking with right mouse button and selecting "Add to most used" from the context menu.



6. To select a projection from the reduced list of the most used projections, choose "Show most used projections" from the upper dropdown box. The list will show only those projections selected at least once or any other marked explicitly as "most used". To select click in the list and then click in OK, or double click an item in the list. Alternatively, it is possible to remove items from this "most used" list clicking with the right mouse button and selecting "Remove from most used". The current selected projection cannot be removed from this list.



7. To select a projection from a reduced list using a filter, choose "Use a filter" in the upper dropdown box. The filter textbox and Filter button will activate. Type a search word or words in the filter textbox and press Filter. Only the projections containing the full search text will be shown. The search is possible by EPSG code and also by the projection name, and is case insensitive. To select click in the list and then click in OK, or double click an item in the list. The selected projection will be recorded in the "most used" list as usual.



8. Save the settings clicking in OK. Settings are saved in registry for each user so it is not needed to set them again later as each user has their own settings. The latest settings are used by default. To configure different settings use the Save button to save a file with the settings that can be later opened with the Open button.

9. This finish the configuration.

10. Now it is possible to start using the BlomURBEX Viewer. Skip the rest of the settings if they are not needed for now and proceed to next step "Viewing Blom images".



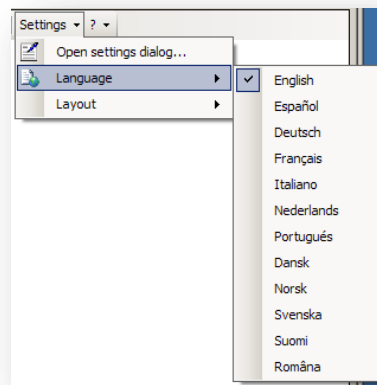
Settings do not persist, if the Plug-in is reinstalled. We need to set the settings again in case of re-installation.

5.4 Changing language interface

Language interface can be changed through the direct menu: Settings > Language, or through the Settings dialog, by Settings > Open Settings dialog. The first is a more direct way to change the language, but the results are the same.

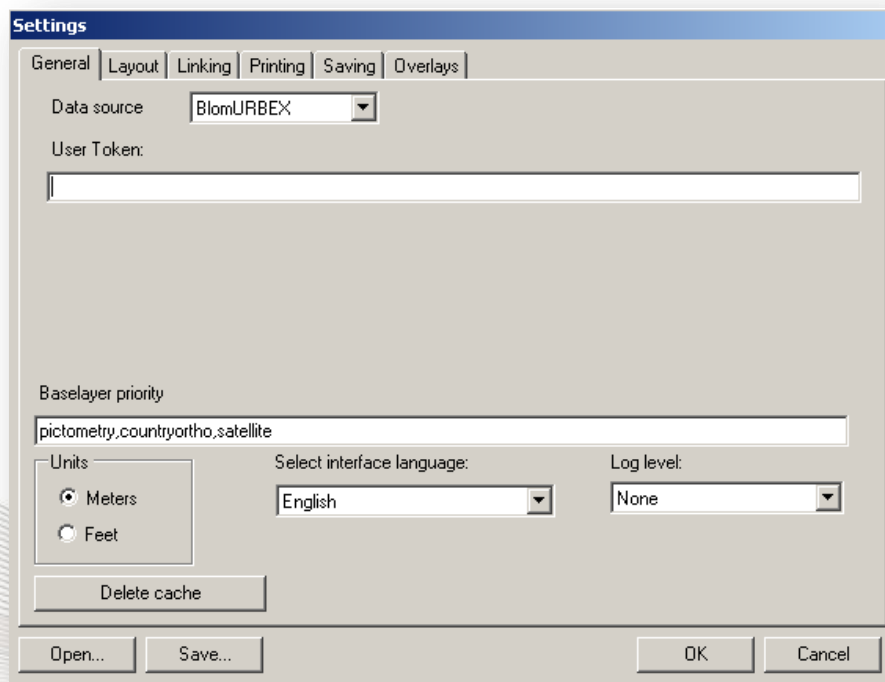
To change the language through the direct menu:

1. Click in menu Settings > Language > <The desired language>. The interface language of the application is changed at once. The selection is saved in the user registry so next time BlomURBEX Viewer is opened the preferred language will remain in the interface.



To change the language through the settings dialog:

1. Click in menu Settings > Open settings dialog.
2. Select the General tab. In the Language selector, choose the preferred one. The interface language of the application is changed at once.
3. If needed, click Save to save the settings in a file for future use.
4. Click OK to save the settings in user registry. Next time BlomURBEX Viewer is opened the preferred language will remain in the interface.



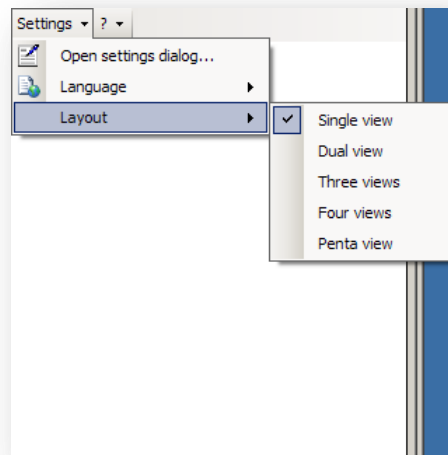
Improving translations of the interface is very easy. Check the Appendixes.

5.5 Changing layout

BlomURBEX Viewer can show one or several orientations at the time using different layouts. It is possible to change from one layout to other either from Settings > Layout direct menu, or using the Settings dialog by Settings > Open settings dialog menu. The first is a more direct way to change the layout, but the results are the same.

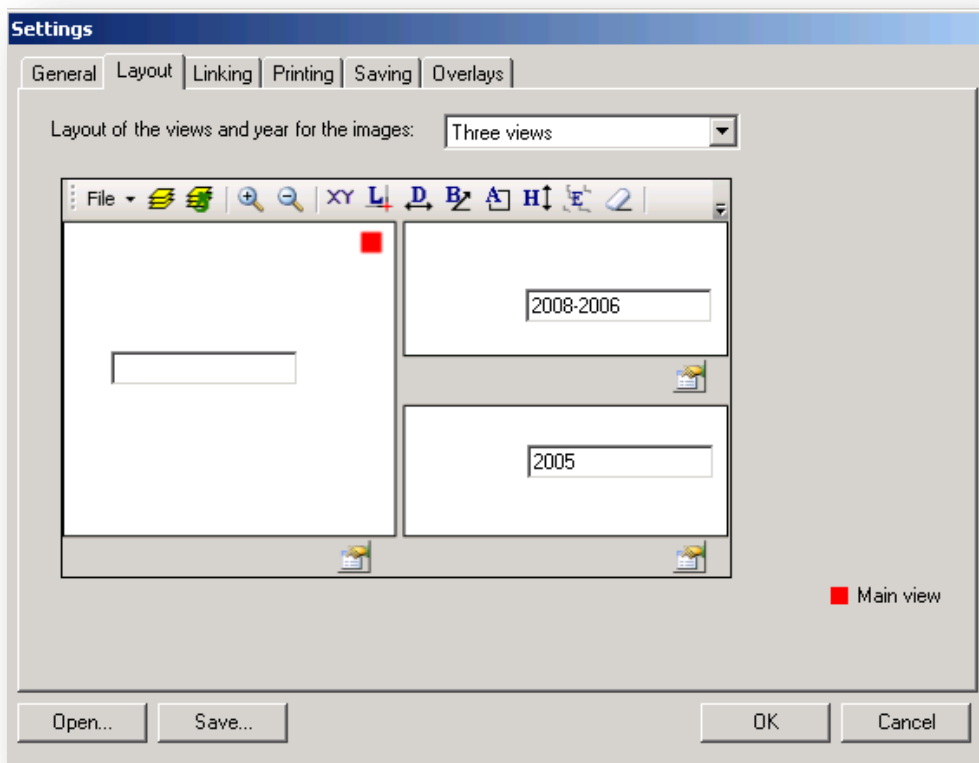
To change the layout using a direct menu:

1. Click in Settings > Layout > <the desired layout>. The choice is saved in the user registry so this layout will remain in future sessions until changed again.



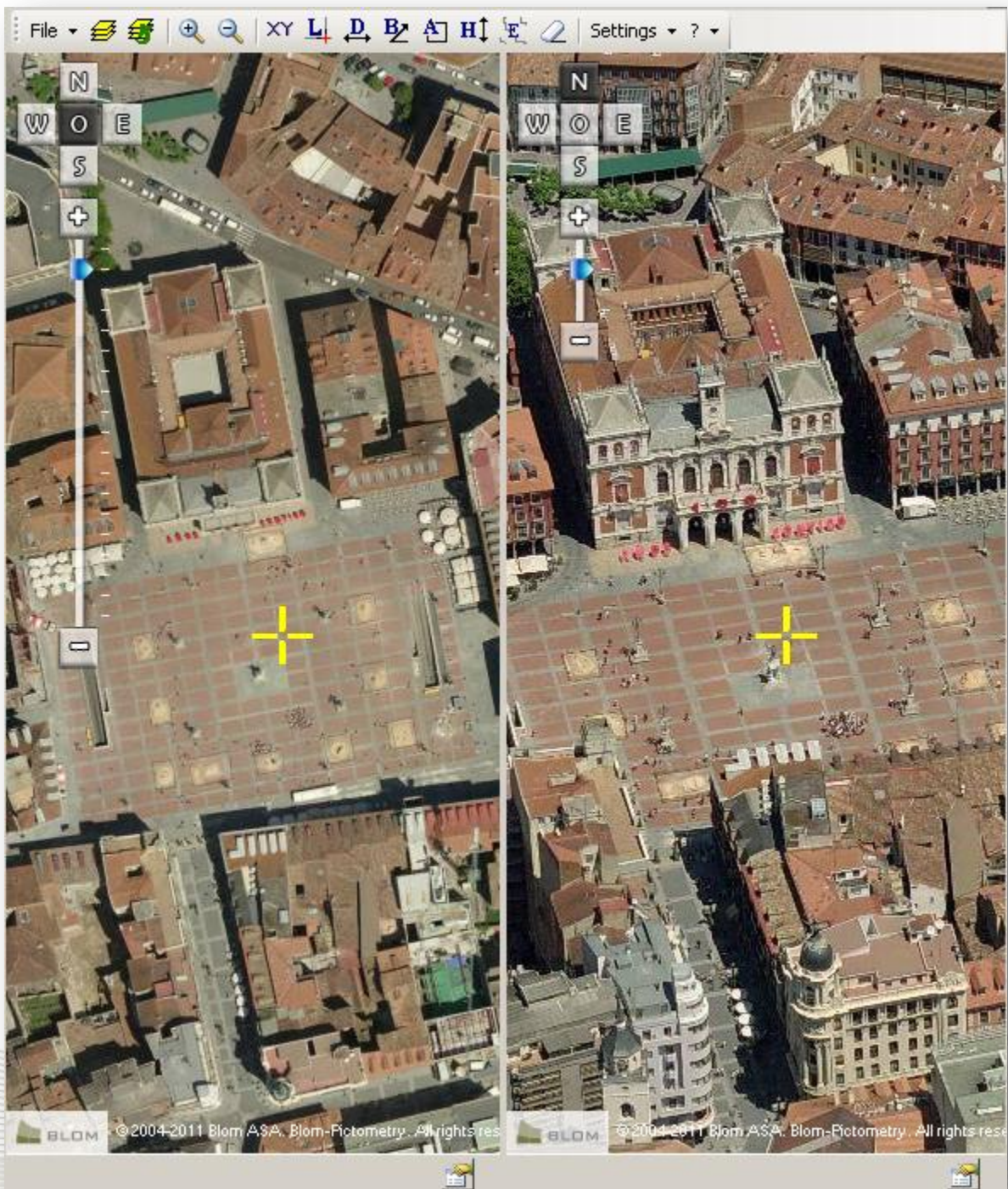
To change the layout using the settings dialog:

1. Click in Settings > Open settings dialog menu, to open settings dialog.
2. In the dialog select the Layout tab and select the preferred layout in the upper dropdown box. For each view in the layout, it is possible to select the preferred year of the BlomURBEX imagery to be shown as explained later.



3. If needed, click Save to save the settings to disk for future use.
4. Click OK to save the settings in user registry. Next time BlomURBEX Viewer opens the preferred layout will remain in the interface.





6 Viewing Blom images

The BlomURBEX Viewer is the window that shows BlomURBEX images. To open an image is needed to select a location, either clicking in the basemap in MapInfo or introducing a known coordinates.

6.1 Selecting location in MapInfo


1. Open MapInfo with a basemap.
2. Open BlomURBEX Viewer if it is not, clicking in the button "Open BlomURBEX window".




3. Ensure that settings are correct, as previously indicated.
4. Resize and move application windows so they can be seen comfortably.
5. Open any map data in MapInfo. The data can use any projection if it is in the EPSG list in the BlomURBEX Viewer options. It is only needed to know the projection and to indicate this projection in the BlomURBEX Viewer settings dialog.

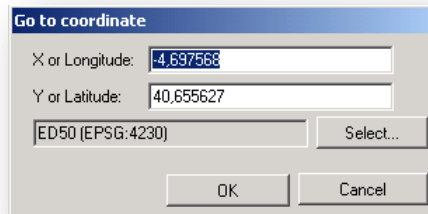


Remember when changing the projection in MapInfo, to modify the options in BlomURBEX Viewer.

6. Ensure that the button "Searches BlomURBEX images in a point" is selected .
7. Click in any location in the map.
8. After some seconds BlomURBEX Viewer will open the best BlomURBEX images for that location, in all the orientations selected in the BlomURBEX Viewer layout. The images are centered in the selected point and show a crosshair. If no image appears consider if your BlomURBEX user permissions do not allow seeing images for that location.

6.2 Introducing known coordinates in BlomURBEX Viewer

1. In BlomURBEX Viewer toolbar click in the tool "Go to coordinates..." . The "Go to coordinate" dialog is opened.



2. Introduce a correct longitude or X and latitude or Y coordinates. Indicate the projection for this coordinates clicking in Select. This opens the same Select projection dialog that we see when selecting the basic options. By default, the last projection selected in the Settings dialog is offered here, but it can be changed, so we can ask for coordinates in any of the supported projections.
3. Click OK.
4. After some seconds BlomURBEX Viewer will open the best Blom images for that location, in all the orientations selected in the BlomURBEX Viewer layout. The images are centered in the selected point and show a crosshair. If no image appears consider if your user permissions do not allow seeing images for that location.

6.3 Panning images

"Panning" is the default behaviour of the display when no tool is selected.

1. In BlomURBEX Viewer unselect any tool in the toolbar.
2. Click and hold the left mouse button in the view to pan.
3. Drag the image up, down, left, or right within the view, and finally release mouse.


6.4 Magnifying images

It is possible to zoom in for more detail or zoom out for more context information. Simply change the image's magnification by using the zoom buttons on the toolbar.


Zooming in all views

Use the "Zoom In" button to increase the magnification of an image.

To zoom in:

1. Click the "Zoom In" button on the toolbar .
2. The magnification percentage is doubled. (The part of the image that was centered in the display remains in the center). The "Zoom In" button affects all the images opened in the layout.
3. Continue clicking the button until reached the desired amount of magnification.

Zooming out all views

1. Click the "Zoom Out" button on the toolbar . The "Zoom Out" button affects all the images.
2. The magnification is reduced by half.
3. Repeat Step 1 until zoomed out the desired amount.

Zooming in or out with the mouse wheel in one view

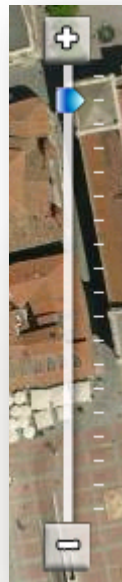
1. Move the mouse wheel frontwards or backwards to zoom in or out in just one view.

Zooming to a extent in one view

1. Unselect any tool selected in the toolbar so the "Pan" default tool activates.
2. Press SHIFT key in keyboard.
3. Click with left mouse button in any view and hold pressed. Drag to draw a rectangle. A rectangle appears showing the extent selected. Release button at the ending corner.
4. Map centers and zoom to the best level zoom that contains the selected extent. This action only affects the view used.

Zooming with the zoom bar in one view

1. Each view has a zoom bar with a "+" button on top and a "-" button on bottom. Click "+" button to increase the zoom level, or "-" to decrease the zoom level. There are 20 zoom levels available for the "continuous" or "Ortho" view mode (see below about view modes). There are 6 zoom levels available for the "photo by photo" or "Oblique" mode. The last two levels in "Oblique" mode are a resample of level 4.
2. Alternatively drag the level indicator up or down to increase or decrease any number of zoom levels. Every view in the layout has its own level indicator, so changes in this only affect the view that contains that level indicator.



6.5 Changing views

Initially each view in the layout has set an orientation, but it is possible to modify this selecting orientations orientation selector. In fact, it is possible to have the

same image several times. For example, it is possible to use the dual view to have two times the same ortho image opened. It can be useful to have a master – detail view to study two distant buildings at the same time that are in the same photo. Each time an orientation is changed in a view this setting is saved in user registry so it will be used until changed again.

There are two types of view modes: "Ortho", that shows the images in a continuous mode, and "Oblique", that shows images one by one. In both modes it is possible to do "Pan" in the map endlessly. In the Oblique mode a new image is loaded in a seamless way when "panning" reaches the border of the current loaded image.



Oblique imagery shown in a "continuous" or "Ortho" mode may suffer some distortion due to the irregularities of the terrain model that affects the ortho-rectification process. In flatter terrains the distortion is less.



Tools are unselected when the view mode changes. Remember to select again the tool if using one when the mode is changed.

There are five types of orientations: "Ortho" orientation, that shows the image as an ortho-photo; "North", that shows the image looking from south to north; "South", from north to south; "East", from west to east; and "West", from east to west. To change the orientation click in the "O", "N", "S", "E" or "W" buttons in the upper left control to activate the "Ortho", "North", "South", "East" and "West" orientations, respectively.



The size of each view in the layout can be changed through the use of splitter bars between the views. Just move the mouse in the boundary of two views, and when the cursor changes, drag and drop the splitter to change the size of the views. Each time the size is changed this setting is saved in the user registry.



6.6 The intelligent behavior

At closer zoom levels, oblique rectified images show big distortion on the buildings, while at furthest zoom levels they do not offer better information than the ortho images.

Each view in the BlomURBEX Viewer is configured in an intelligent way so that any request that attempts to change the zoom level of the view will check if the view is displaying any orientation other than Ortho, and in this case decide what set of images should be displayed: ortho, oblique rectified or natural obliques.

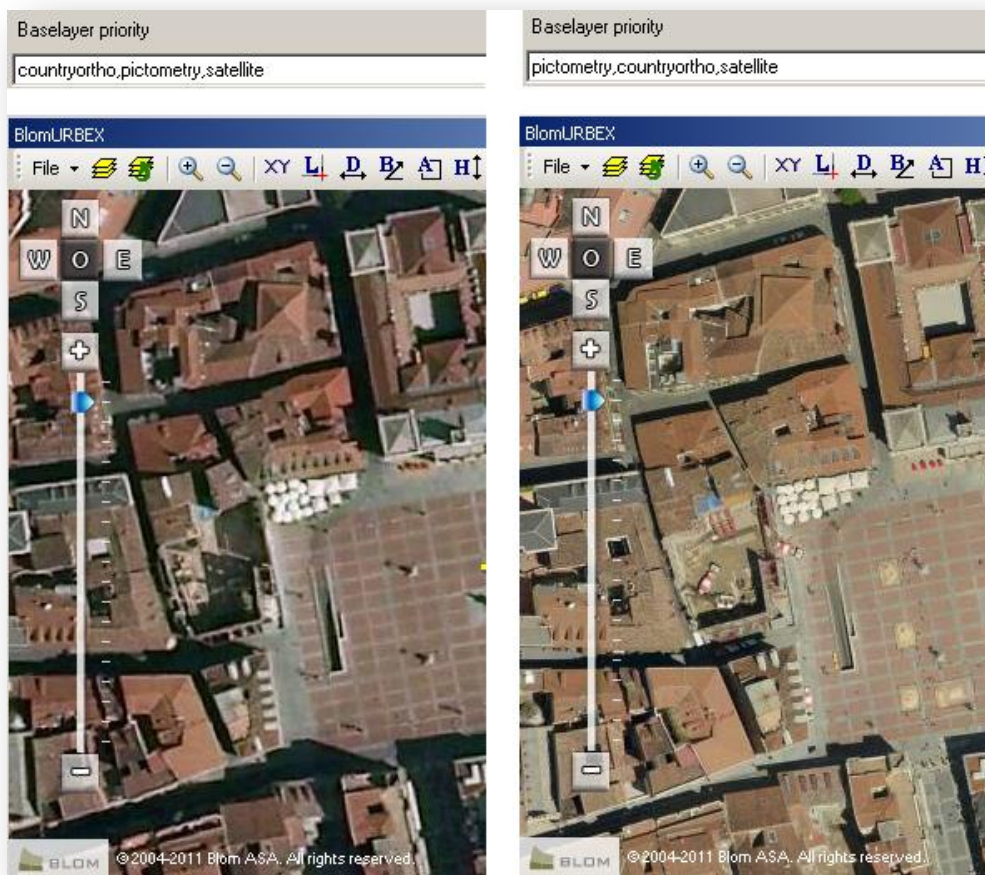
6.7 Changing basemap ortho image

By default the ortho image shown as basemap is one from several images available in BlomURBEX server. These images are visible are certain resolutions:

- Satellite images, with low resolution of the data. This source data is available in the furthest zoom levels (1 to 13), and contains Blue Marble and Landsat 7 imagery.
- Countryortho is imagery covering a whole country (or a region). This source data is available in the medium zoom levels (13 to 19), and contains imagery from several providers and from Blom.
- Blom imagery captured with Pictometry cameras, also called "pictometry" images in the BlomURBEX server. This source data is available in the zoom levels with the maximum resolution (14 to 20).

As can be seen at certain zoom levels these three sources coexist. For that zoom levels with more than one image available, the BlomURBEX server prioritizes first the "pictometry" image, then the "Countryortho", and finally, the "satellite". It is possible to change this priority in the options.

In the textbox "Baselayer priority" of the General tab of the Settings dialog, change the text to consider other priorities in the images for the basemap. For example, in the next screen capture, the left shows the default priority with the "pictometry" imagery by Blom in the zoom level 18, and the right shows a different priority that renders the "Countryortho" imagery, that is also available for that zoom level.



Be careful to type the correct names in the Baselayer priority textbox, or no image will be shown. Type the names separated by commas and without any blank spaces.

6.8 Showing the visible and total extension in MapInfo

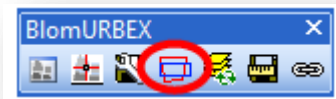
It is possible to see the visible and total extent of the opened Blom images drawn in MapInfo. To do this, follow these steps:

1. In BlomURBEX Viewer, select the menu Settings > Open Settings dialog. In the Settings dialog select the Linking tab. Ensure that checkbox "Display image visible extent on linked mapping application" is checked for viewing the visible extent, and that checkbox "Display image total extent on linked mapping application" is checked for viewing the total extent. Uncheck the checkboxes to not see the extents in MapInfo. The total extent only has sense when the view mode is "photo by photo" also called "Oblique" mode.

- ☒ Display image visible extent on linked mapping application
- ☒ Display image total extent on linked mapping application

2. Modify the visible extent of BlomURBEX Viewer by panning or zooming in the current image, or requesting other image.

3. Now go to Mapinfo and click in the "Refresh image extents and cursor" in the plug-in toolbar each time it is needed to refresh the extents. Boundaries are drawn using a graphics temporary layer in MapInfo. By default visible extents are drawn in red and total extents in blue.



6.9 Synchronizing views

It is possible to synchronize the Mapinfo map to show the same position that the main view in the BlomURBEX layout. To do this follow this steps:

1. Open the Settings dialog and select the Linking tab.

☐ Center linked map at main view center

2. Check the "Center linked map at main view center". The main view in BlomURBEX is one of the opened views. To know what is the current main view go to the Layout tab in the Settings dialog.

3. Now go to Mapinfo and click in the "Sync with viewer" button in the plug-in toolbar each time the location of the BlomURBEX main view changes. The Mapinfo map will be refreshed to show that location.

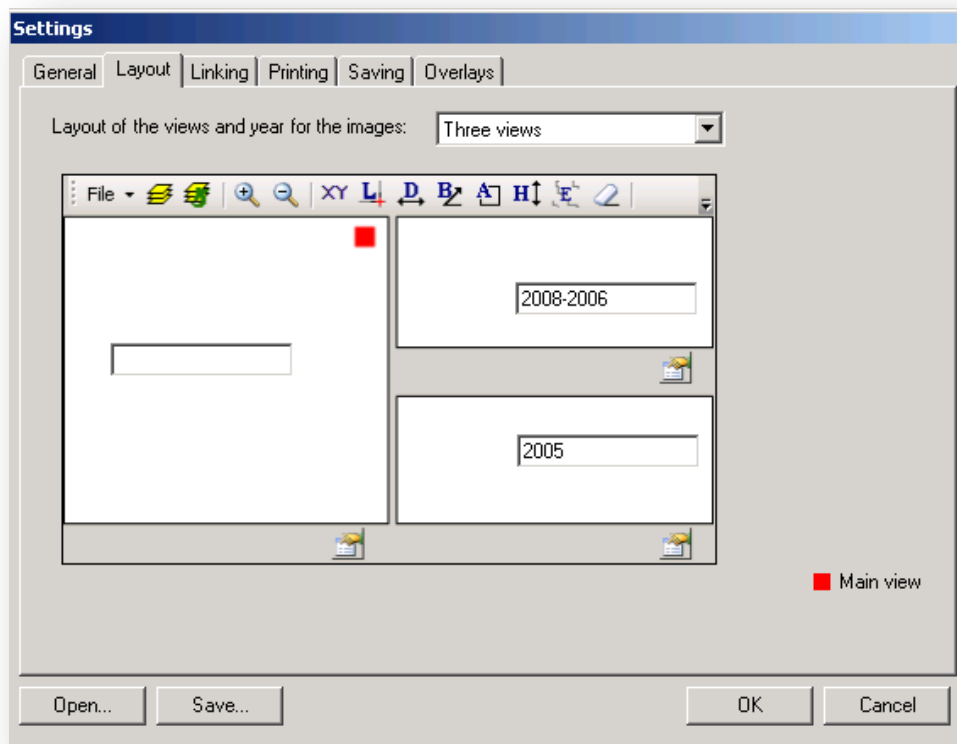


6.10 Seeing historical images from different years

It is possible to show imagery for different years in each view, facilitating user to follow the changes occurred in a spot of the city. To do this, follow these steps:

1. Open the Settings dialog and select the Layout tab.
2. For the current layout, a set of textboxes for each view is shown in the dialog. Enter a year or a range of years, inside these textboxes to filter that view for

- a particular point in time. The date filter should follow one of these structures: YYYY-YYYY and YYYY, where YYYY is the year number with four digits.
3. For example: "2005-2008" will return the most updated image available inside the range of years, including both bounding years. In this example, if an image of 2007 is available and no image in 2008 is available, then the image of 2007 is returned. But if no image is available between 2005 and 2008, and only an image of 2009 is available, then no image will be returned.
 4. Another example: "2006" will return the most current images available, whose date is previous to the requested date. In this case if several images are available previous to the year 2006 or from that year, then the last one will be returned.
 5. If the default value is empty, then the most updated image will be requested.
 6. If a wrong value is sent, then no image will be returned.
 7. The settings will affect also the Extract image or Export image tools when applied to the views with a date filter.





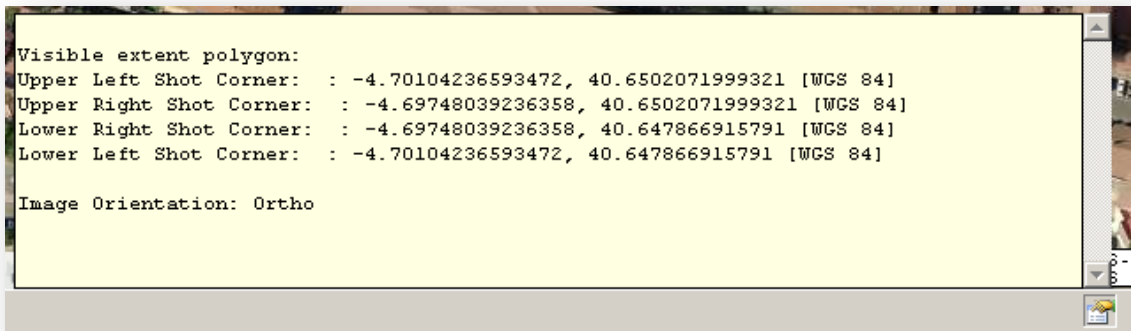
Above both views of Eiffel tower from 2008 and 2009



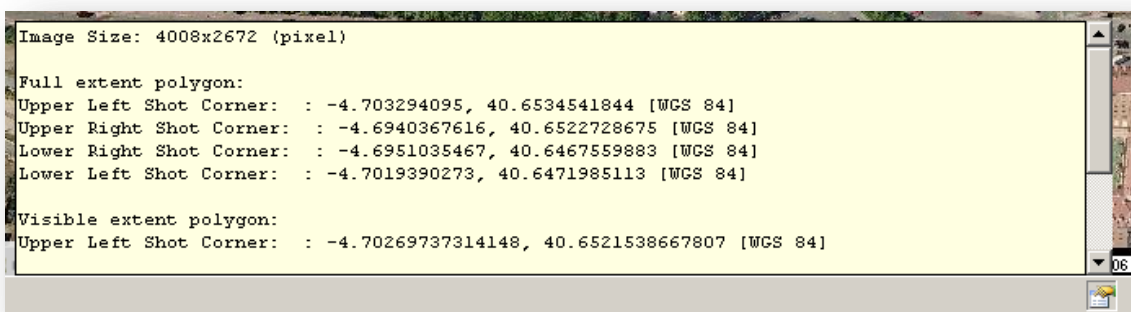
The option to change the date of the BlomURBEX images allows to see side by side the same part of a city in different years. Up to five different years could be shown at a time. Just select the same view mode and orientation, as explained below, for each view in a multi-view layout, but choose different years for each view.

7 Obtaining image information

To obtain the information about the current opened image, click in the Image Properties button in any status bar of the views. A panel will open showing extent coordinates in WGS84 lon/lat for the full image (in obliques) and for the visible portion and other data if available. To hide the panel click again in the button.



Info in ortho view



Info in oblique view

To copy the image data just select the text in the panel, click the right mouse button, select copy, and paste it anywhere.

8 Using the measurement tools

BlomURBEX Viewer offers various tools for measuring features visible in images. For example, it is possible to measure the distance between two points, the elevation of the terrain, building heights, bearing, area, perimeter, and the coordinates of a point.

Before using the measurement tools, be sure that the unit of measure is set as desired.

8.1 Changing units of measure

To change units of measure:


1. In BlomURBEX Viewer click the menu Settings > Open Settings dialog. The Settings dialog box opens.
2. In the General tab click the desired units: Meters or Feet.
3. Click OK.

The changes remain in effect until units are changed again.

8.2 Viewing the coordinates of a location

Use the Location Tool to determine the location (the coordinates) of an object in an image.

To determine the location of an object:

1. In BlomURBEX Viewer click the Location Tool .
2. Click the desired location on the image.
3. The point's coordinates appear drawn in the view. If the projection selected in the Settings dialog is not Spherical Mercator, the same coordinates will be seen in both systems, Spherical Mercator and the selected one, in the desired units, meters or feet.




For Oblique images, remember to click near the base of buildings for more accurate coordinates.



8.3 Measuring squared perimeter or distance

Use the Distance Tool to measure perimeter—the distance around the outside edge of an object or distances.

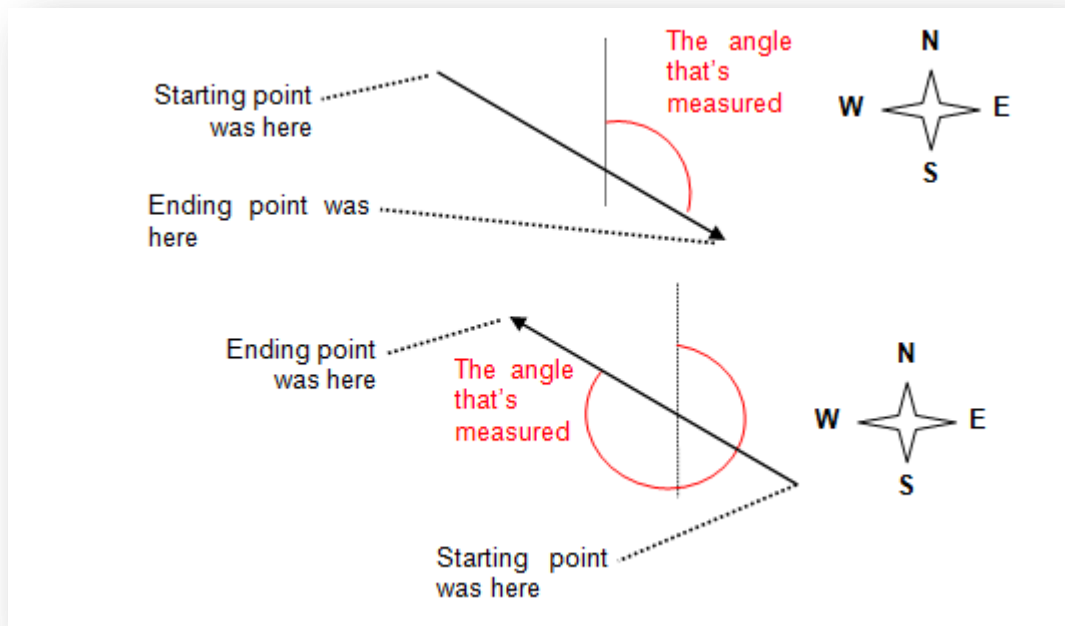
To measure perimeter by using a parallelogram or measure distances:

1. Click the Distance Tool .
2. Starting with one corner of the object, click with the left mouse button.
3. Click again for each new vertex. The outline of a polyline appears as new vertexes are added. In oblique mode take in mind that a workaround to the server must be done in each vertex and the measure takes longer.
4. When the polyline surrounds the shape being measured or distance being measured, double click with left mouse button.
5. The partial measurements and total length appears drawn in the view.




8.4 Measuring bearing

Use the mouse to draw one line to measure bearing both in ortho or oblique views. Where start drawing the line is important, as shown in the following illustrations:



To measure bearing:


1. Click the Bearing Tool .
2. Click with the left mouse button on the starting point.
3. Click with the left mouse button on the ending point in the direction you want to measure the bearing of. The measurement appears drawn in view.



8.5 Measuring area

The Area Tool lets to measure the area of any linear shape both in ortho or oblique views. After the perimeter of the area to be measured is outlined, the area measurement appears drawn in view.

To measure the area of any straight-sided shape:

1. Click the Area Tool .


2. Click in the display at the desired starting point.
3. Click again for every new vertex of the area. A polygon that returns to initial point is drawn automatically.
4. When outlined the entire perimeter, double click in the last vertex.



8.6 Measuring height

Use the Height Tool to measure the height of an object in an Oblique image.
 (Because Orthogonal images are captured straight down, the Height Tool doesn't apply to the "continuous" or "Ortho" view mode.)

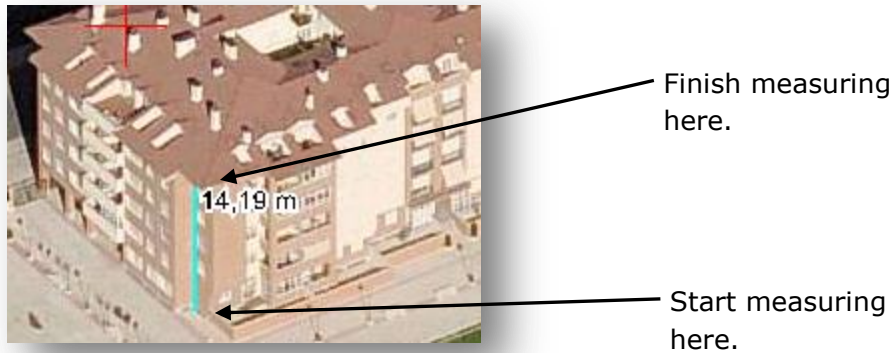
To measure height:

1. Click the Height Tool .
2. Click with the left mouse button on a point at the base (where it meets the ground) of the object we want to measure the height of.



Important: Be sure to measure height by starting at ground level and moving upwards. If the ground level starting point is not seen, then estimate its location.

3. Move the mouse upwards and click a new vertex at the ending point.




4. The measurement appears drawn in view.

8.7 Measuring elevation

Use the Elevation Tool to measure the elevation (height above sea level) of a point in an image.

To measure the elevation:


1. Click the Elevation Tool .
2. Click the point whose elevation to measure.
3. The measurement appears drawn in view.



8.8 Clearing measurements

Use the Eraser Tool to clear measurements in the map display.

To clear measurements:

1. Click the Eraser Tool .
2. The measurements are removed in all available views.

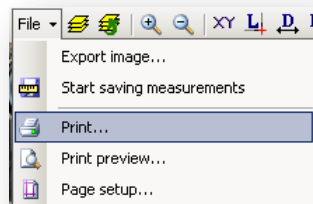
9 Printing images

BlomURBEX Viewer let print all the views opened to the selected printer, setup the page options and preview the printing, along with the image properties if they were activated in the settings dialog. Before printing, scroll or pan the image so that the portion we wish to print is visible in the display. Also resize the views with the splitters and the size of the BlomURBEX Viewer window. The visible portion of each image, and with the exact pixel size, will be send to printer.

9.1 Printing images

To send all the current views to the printer with the current settings:

1. Click the File > Print menu.



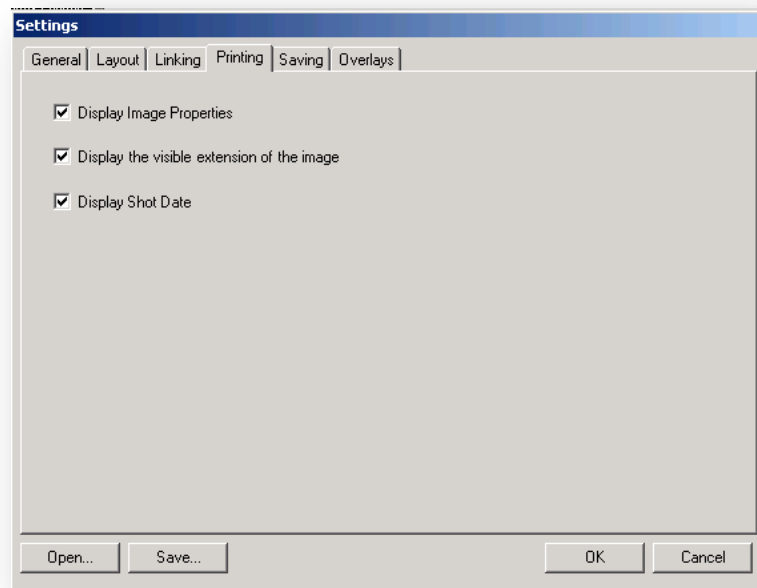
2. The views are printed.

Each view in the layout is printed in different pages also with the image information activated in settings. If the image information is longer than the page space, it will be cropped. In this case, try reducing the size of the BlomURBEX Viewer views or window, or limit the amount of information to print in settings dialog, as explained below.

9.2 Changing print settings

To change the printing settings:

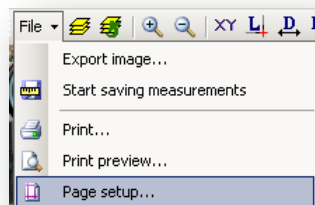
1. Click the Settings > Open Settings dialog menu.
2. The settings dialog opens. Select the Printing tab.
3. Check or uncheck the options wanted.
4. "Display image properties" adds the corner coordinates of the image to the output (if the image is a oblique one) and other properties.
5. "Display the visible extension of the image" adds the corner coordinates of the visible portion of the image.
6. "Display shot date" add to the output the shot date of the image.
7. Click OK in the Settings dialog to save changes.



9.3 Page setup

To change page settings:

1. Click the File > Page setup menu.

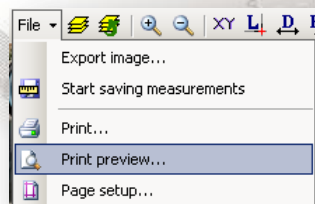


2. The Page setup dialog opens. Modify the page margin, orientation, etc. as desired. Click OK to accept changes.

9.4 Print preview

To preview the print:

1. Click the File > Print preview menu.



10 Exporting images

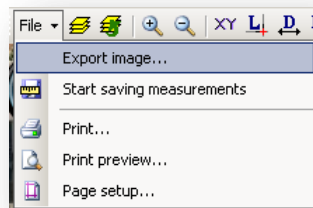
10.1 Exporting all visible views

The BlomURBEX Viewer "Export image" menu lets exporting the visible extent of the active views to a set of JPG files.

To export an image:

1. Pan in the views to display the extent desired.
2. Click the "File > Export image..." menu.
3. In the Save as dialog that opens introduce the path and filename for the file.

The extracted image or images are saved with the filename specified. If the BlomURBEX layout shows several views, then several files will be created and all the files will be suffixed with a view number and orientation. Also, if view is in ortho mode, a world file (JGW) is saved for easy integration of the image in other GIS packages.



10.2 Projection of the extracted ortho images

The projection of the extracted ortho images are "Spherical Mercator", the projection labelled by EPSG as 'Popular Visualisation CRS / Mercator' in March 2008 with code number 3785.

11 Saving measurements

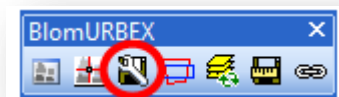
BlomURBEX Viewer is able to save measurements in order to store this measures into any opened table in MapInfo.

11.1 Setting measurement savings

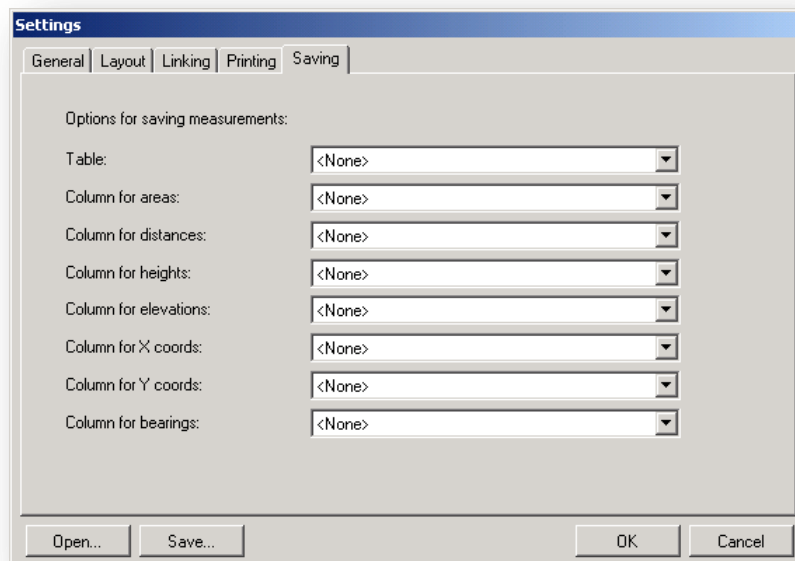
To activate the measurement storage, it is needed to complete two one-time setup tasks. It is needed to specify some options about the place where store the measurements, and some options about the units and the projection to use (in the case the measurements are locations).

To specify the options regarding the place to store measurements:







1. It is needed to have any map opened in Mapinfo, with at least one layer in the map where to store the measurements.
2. Click in the "Refresh saving options" button in the plug-in toolbar to ensure that the BlomURBEX viewer obtains the information about current layers (tables) opened.



3. Now go to the BlomURBEX Viewer. Click in the Settings > Open Settings dialog menu.
4. The Settings dialog opens. Select the Saving tab.
5. Select a table for saving measurements from the Table dropdown list. Only the tables of the layers available in the active map in MapInfo and the stand-alone tables opened in MapInfo are shown. If the list of tables shown do not match current list of available layers in the MapInfo map window, to sync both lists exit the settings dialog with Cancel, and use again the button "Refresh saving options" explained above. Any time this tool is used the list of tables is refreshed, so use it again on the map after made any change in the MapInfo interface (as changing the active map window, or modifying the layers) to refresh settings lists.



6. Select a field for each type of measurement to save from the dropdown lists. It is possible to store seven different type of measurement. The table summarizes the relation between the BlomURBEX Viewer tools and the fields used to make the savings.

In BlomURBEX Viewer the tool used is ...	In MapInfo measurements are saved in the field selected in dropdown...
	Column for areas
	Column for distances
	Column for heights
	Column for elevations
	Column for X coords and Y coords
	Column for bearings

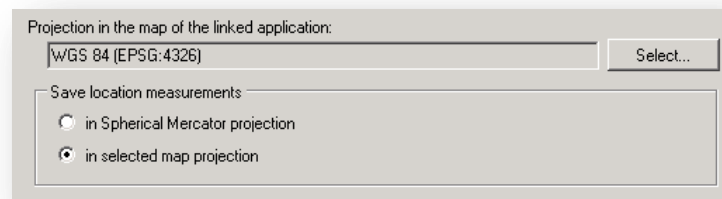
7. To store only some measurements, select <None> for those measurements in the dropdown lists.

8. Click in OK to save settings.

To specify the options regarding the units and the projection to use in locations:

1. Click in the Settings > Open Settings dialog menu.
2. The Settings dialog opens. Select the Saving tab.

3. Select the desired units, meters or feet. The values will be stored in the units selected.
4. Select the Linking tab.
5. In the "Save location measurements" groupbox, choose "in Spherical Mercator projection" for storing location data in Spherical Mercator meters in MapInfo, or choose "in selected map projection", more usual, for storing location data in the projection of the current map in MapInfo. This setting only affects the Location tool.
6. Click OK to save settings.



11.2 Starting and stopping save sessions

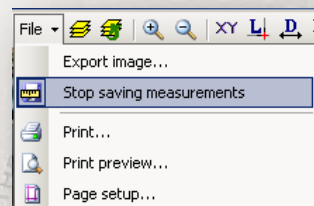
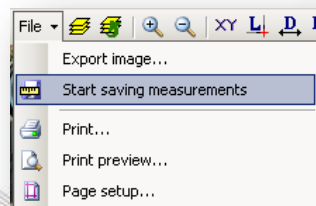
In BlomURBEX Viewer it is possible to start, pause and continue the savings through an option.

To start a save session:

1. Click in the "File > Start saving measurements" menu if it is unchecked. The menu will toggle to a checked state and measurements will be stored (if fields were correctly set).

To pause a session:

1. Click in the "File > Stop saving measurements" menu if it is checked. The menu will toggle to an unchecked state and measurements will be paused.



11.3 Procedure for saving measurements

The procedure for saving measurements is this:

1. Ensure that the current active map in MapInfo has a layer that matches the table selected in the BlomURBEX Viewer saving settings, or that a stand-alone table is opened that matches the table selected in BlomURBEX settings. Ensure that the fields selected are in this layer or table. If the layer or table is not present no saving will occur. If a field is not present, this field will be ignored.

Update anytime the settings to match them with the active map in MapInfo or stand-alone tables opened in MapInfo.

2. Ensure that the "Start saving measurements" menu is checked so the text in the menu is now "Stop saving measurements".

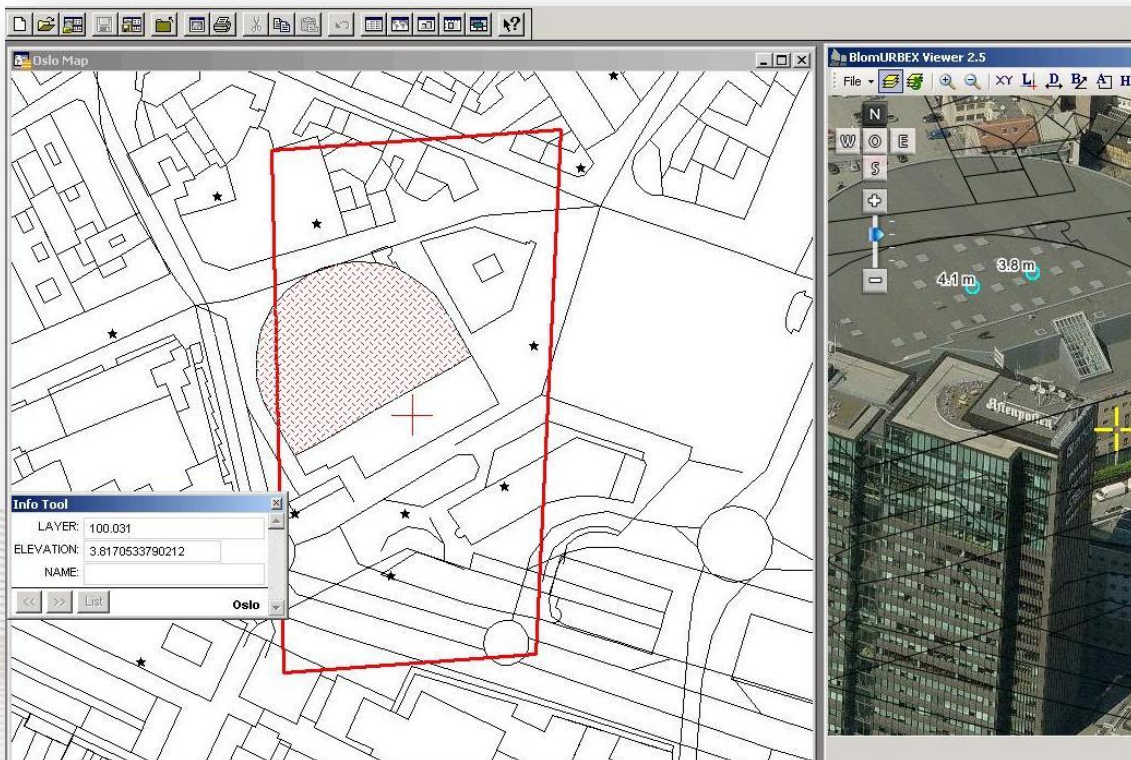
3. Using the selection tools of MapInfo, select one or several map features or table records in the layer or table to update. BlomURBEX Plug-in only stores measurements in existing feature or table records, so create new records or features at your convenience prior to store measurements, and then select them.

4. Now in BlomURBEX Viewer do a measurement as described above in this manual. The values are saved internally.

5. Now in Mapinfo click in the "Save last measurement" in the plug-in toolbar. The last measurement made in BlomURBEX Viewer will be sorted in the selected features in the map (in the layer and field selected in settings).



6. Continue this way with other features or records.



MapInfo showing the table of a buildings layer. A building is selected and elevation is obtained from BlomURBEX web services through the BlomURBEX Plug-in for MapInfo.

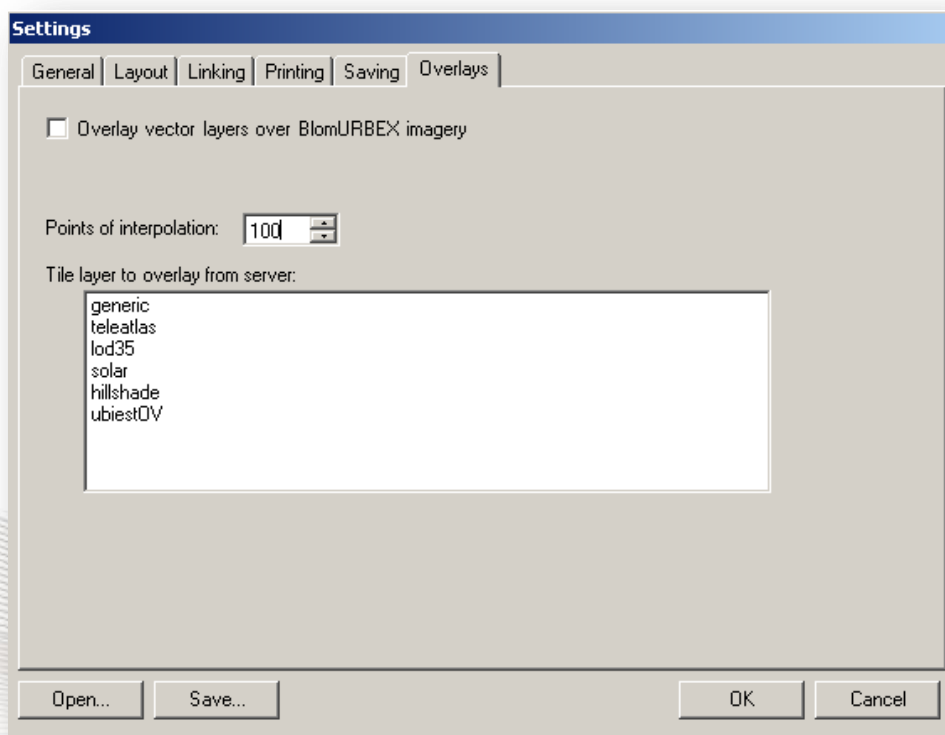
12 Overlaying tile raster data

BlomURBEX Viewer is able to overlay tile raster data from BlomURBEX server, both in "Ortho" and "Oblique" modes. In next chapter is explained how is possible to overlap also local vector data loaded in MapInfo. Both tile raster layers and local vector layers can be overlapped at the same time over the BlomURBEX Viewer. They all are treated as layers and drawn on top of the basemap imagery.

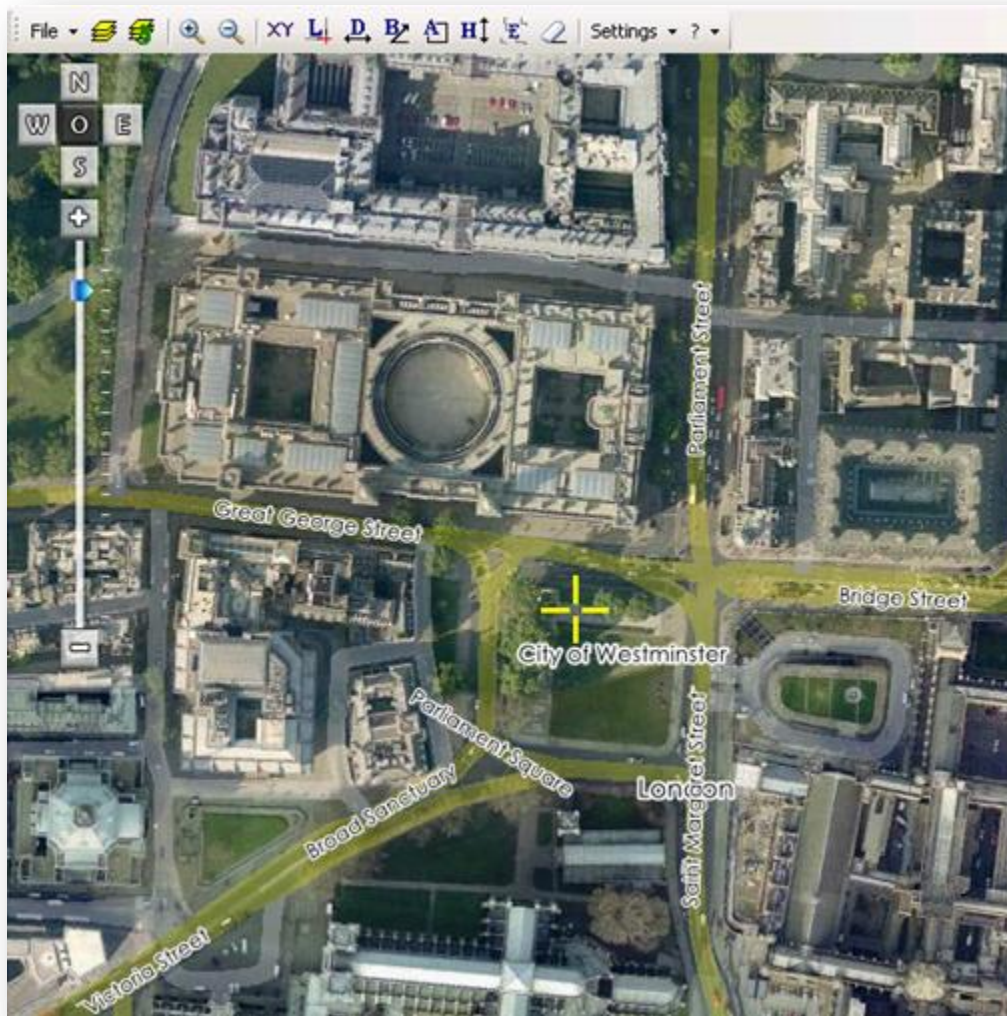
12.1 Activating and deactivating raster overlays

To activate or deactivate the raster overlays follow these steps:

1. Click in the Settings > Open Settings dialog menu.
2. Select the Overlays tab.
3. Each time the settings dialog is opened, a query is done to the BlomURBEX server to return the available tile layers for the current user. Remember when changing the UserToken option to close the dialog clicking OK button and to open again the dialog, because each UserToken has permission for different tile layers depending on user restrictions. Indeed, it is possible for a customer to host his vector data at BlomURBEX through a rasterization process.



4. Select one or several layers from the list "Tile layer to overlay from server". Click once to select and once again to deselect.
5. Click OK to save the setting and start overlaying or clean overlays. This setting is not saved in user registry for better performance initialization. BlomURBEX Viewer always starts with the setting unselected. It is needed to set it explicitly in each BlomURBEX Viewer session.



Tile raster overlay with TeleAtlas streetmap




13 Overlaying vector data

BlomURBEX Viewer is able to overlay vector data on top of BlomURBEX imagery, both in "Ortho" and "Oblique" modes.

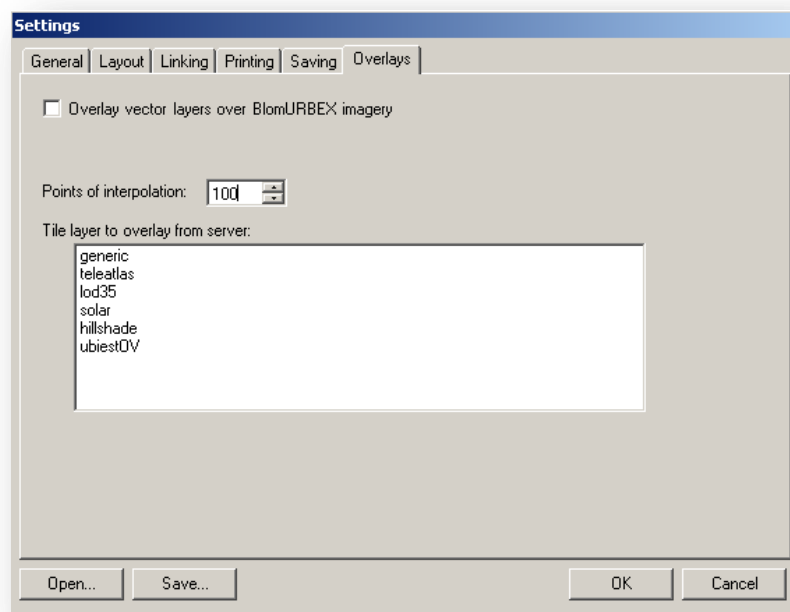
13.1 Activating and deactivating vector overlays

To activate or deactivate the vector overlays there are two options with the same result:

1. Click in "Overlay vector layers over BlomURBEX imagery" button in the URBEX toolbar .

OR

2. Click in the Settings > Open Settings dialog menu.
3. Select the Overlays tab.



4. Check or uncheck the "Overlay vector layers over BlomURBEX imagery" checkbox to activate or deactivate overlays, respectively.

5. Click OK to save the setting and start overlaying or clean overlays. This setting is not saved in user registry for better performance initialization. BlomURBEX Viewer always start with the setting uncheck. It is needed to set it explicitly in each BlomURBEX Viewer session.




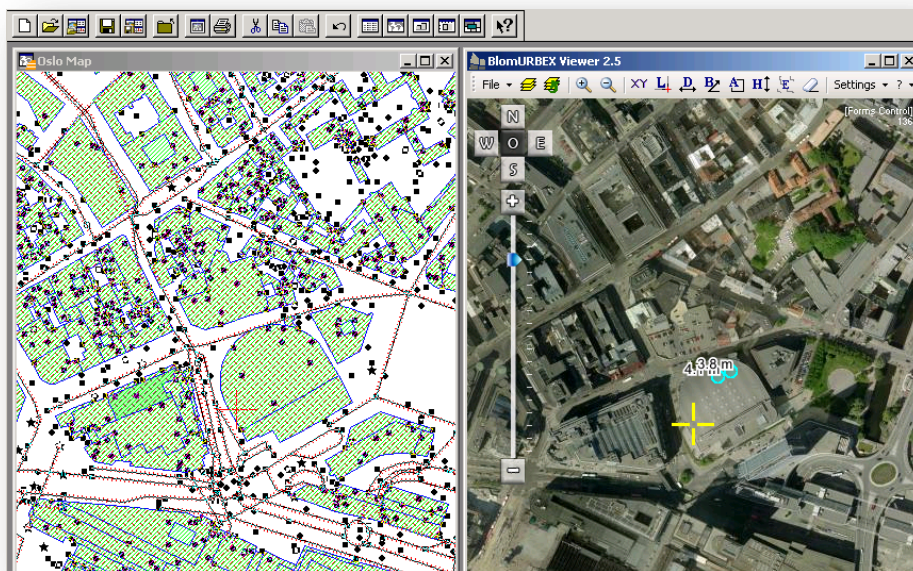
Overlaying on top of oblique imagery may be a long time operation. Be patient when overlaying a big number of features over oblique images. Read below for tricks to improve performance.

13.2 Refreshing overlays

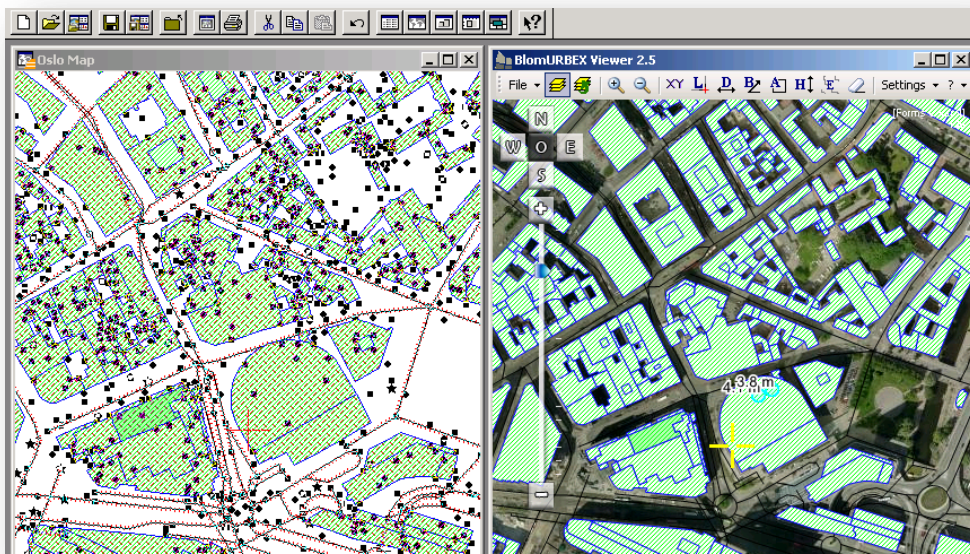
When Overlay option is activated all the existing layers in the MapInfo active map window are not added to BlomURBEX views immediately. This option only switches on or off the overlaying process. To reflect these changes is needed to click in the "Refresh overlays" button in the BlomURBEX toolbar inside Mapinfo.



(Ignore the "Reload overlays" button inside the BlomURBEX viewer, , this button is used only in plug-ins for other GIS packages).



Before refreshing Vector layer



After refreshing Vector layer

The "Refresh overlays" function cleans all the previous overlays, adds again the layers to BlomURBEX viewer and redraw again the vector data. Each time a change is made to the Mapinfo map, as adding new layers or features, or modifying any feature in its geometry, these changes are not shown immediately. It is needed to re-click again the "Refresh overlays" button.



When overlaying vector data in oblique imagery, remember that vertexes of the geometries should match with the imagery at the ground level, not at the roof level. That is the reason of the apparent offset seen when overlapping over oblique imagery.

13.3 Overlay and performance considerations

To overlap geometries faster, a combination of requests to BlomURBEX server and local interpolations is done. It is possible to adjust the precision of the interpolations.

For that, follow these steps.

1. Open Settings dialog.
2. Select the Overlays tab.
3. The amount of points used for the interpolation determines the accuracy.

It is possible to use no less than four points and no more than 400 points. Change this clicking up or down the "Points of interpolation" textbox. More points interpolate more accurately but are slower. Default is 100.

Points of interpolation: 100

When Overlay option is activated, only visible features inside the visible extent are sent from MapInfo to BlomURBEX Viewer and rendered on top of BlomURBEX imagery. Try to limit the amount of features to be sent or the BlomURBEX Viewer performance will decrease when overlapping imagery. To limit the number of features follow this advices:

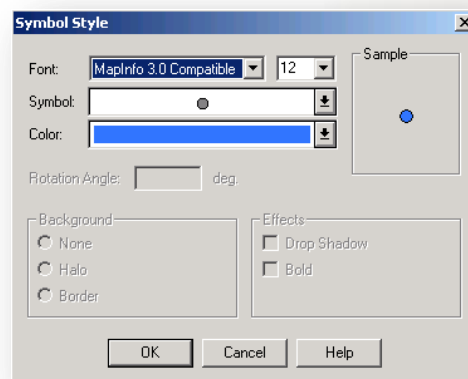
1. Hide in MapInfo those layers that are not relevant.
2. Zoom in inside "Ortho" BlomURBEX views so the visible extent contains a small number of features. Only features that fall inside the visible extent are overlaid. The zoom level is not a consideration in "Oblique" mode.

13.4 Symbology limitations

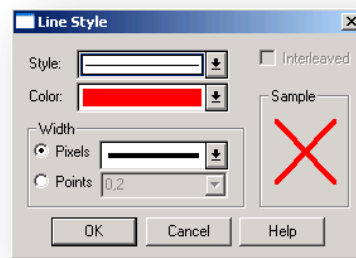
When rendering overlays BlomURBEX Viewer supports both types of MapInfo styles: the internal styles defined for each feature or the override style for the layer. If a override style is selected for the layer, then that style is used. If not, then the internal style defined for each feature is used. If no style is defined for the feature the default style is used.

The BlomURBEX Viewer has less style properties than MapInfo. These are the limitations of the current version:

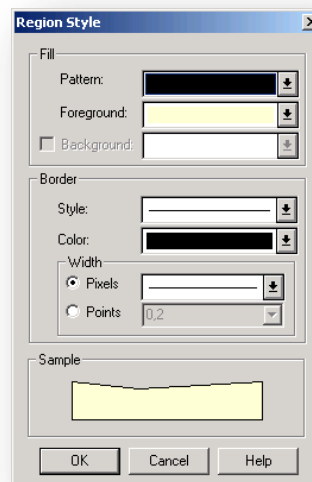
1. Points are shown always as circles, but the size and color are correctly chosen. Outline color is always black.



2. Polylines are always shown as solid lines, but the width and color are correctly chosen. Width must be in pixels.



3. Polygons are always shown as solid filled polygons with some transparency, but fill color and outline color are correctly chosen. Fill color is the one selected in the Foreground dropdown box when Pattern is Solid, or the one selected in Background dropdown box when Pattern is other.



14 Adding BlomURBEX to MapInfo as WMS layer

BlomURBEX offers a WMS (Web Map Service) service to allow access to the ortho images and the ortho-rectified obliques (oblique imagery shown in an pseudo-ortho mode, projected over the ground). This WMS follows the directives and OGC's regulation. This protocol is a service of publication of the cartography across Internet.

The service gets a request from a client specifying the extent and size of the required image and returns the requested raster image. This raster image can be ortho view or any of the rectified oblique views.

The service requires an HTTP request with a few parameters, normalized by OGC, which define the request. These parameters are: the service, the version, the type of request, the system of spatial reference, the coordinates of the area that define the spatial area of the request, the size of the image of response, the format of image, the layers, the transparency, etc.

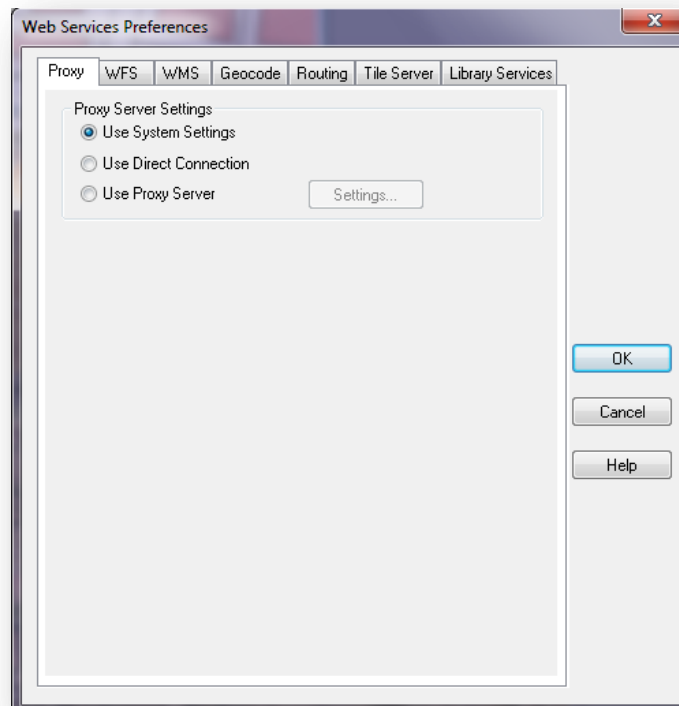
This manual explains how to access BlomURBEX WMS services for MapInfo Professional 10.0 and above.

14.1 Setting up BlomURBEX WMS services in MapInfo

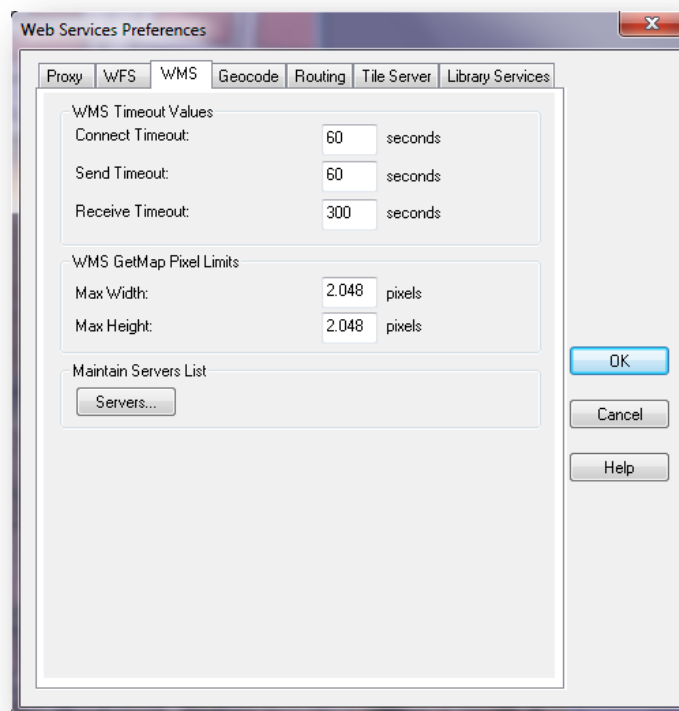
1. Open MapInfo.
2. By default a toolbar named "Web services" is opened. If not open it.
3. Click the "Web Services Preferences".



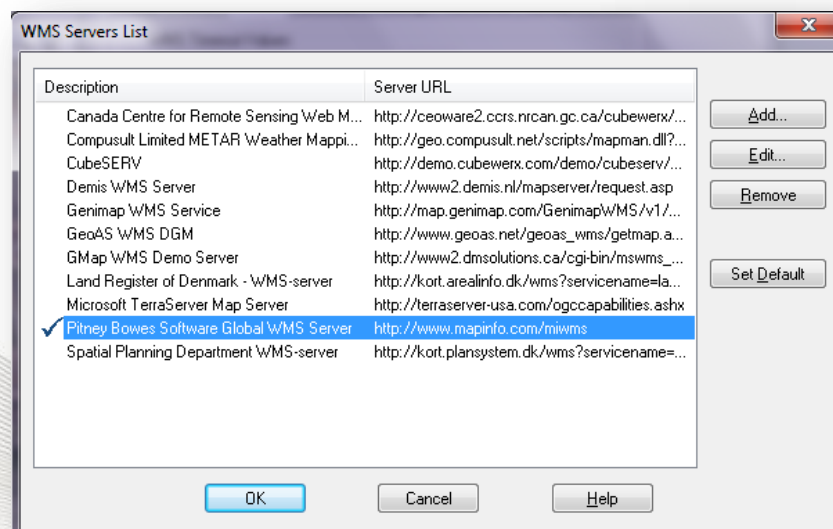
4. The "Web Services Preferences" dialog opens. In the Proxy tab select the correct settings for your Internet connection.



5. In the WMS tab leave the default timeout values and pixel limits. Click in the "Servers..." button.



6. The "WMS Servers List" dialog opens. Click the Add button.



7. The "WMS Server Information" dialog opens. In the "Server URL" textbox type the following URL:

`http://www.blomURBEX.com/v02/GetMap?usertoken=<your user token>&VERSION=1.1.1`

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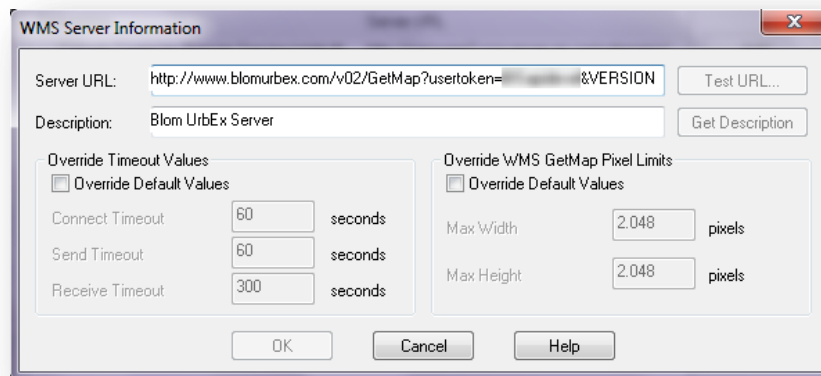
where <your user token> should be the string with the user token.

For example, if the usertoken is FDLKKFJSLKFS, then the URL will be:

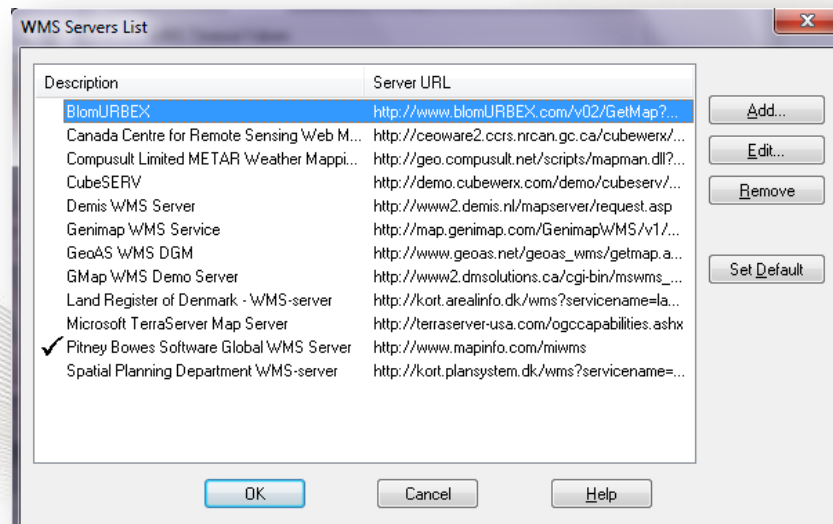
<http://www.blomURBEX.com/v02/GetMap?usertoken=FDLKKFJSLKFS&VERSION=1.1.1>

Type in the Description textbox any description as "Blom URBEX Server".

Finally click OK.



8. The new BlomURBEX server is added to the list of servers of the "WMS Servers List" dialog. Select it in the list and click "Set default" to make it the default server. Finally click OK to dismiss the dialog.



9. Finally click OK in the "Web Services Preferences" dialog to accept changes.

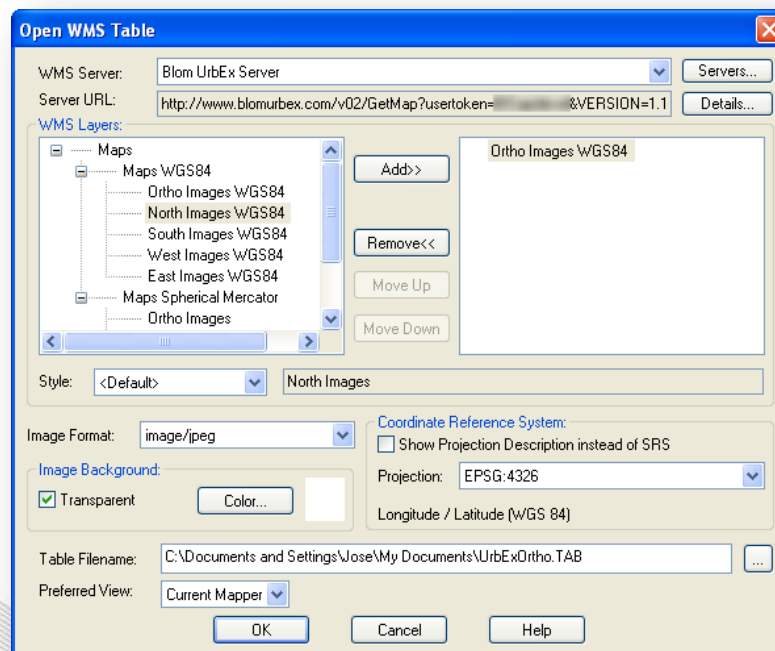
14.2 Adding BlomURBEX imagery as WMS ortho layer in MapInfo

Follow these steps:

1. Start MapInfo Professional if it is not.
2. Add some data tables to a new MapInfo map. Data can be in any vector format supported by MapInfo, and in any projection supported by MapInfo. MapInfo will use the projection of the first layer added as the map projection.
3. In the "Web services" toolbar click in the "Open WMS Table button".

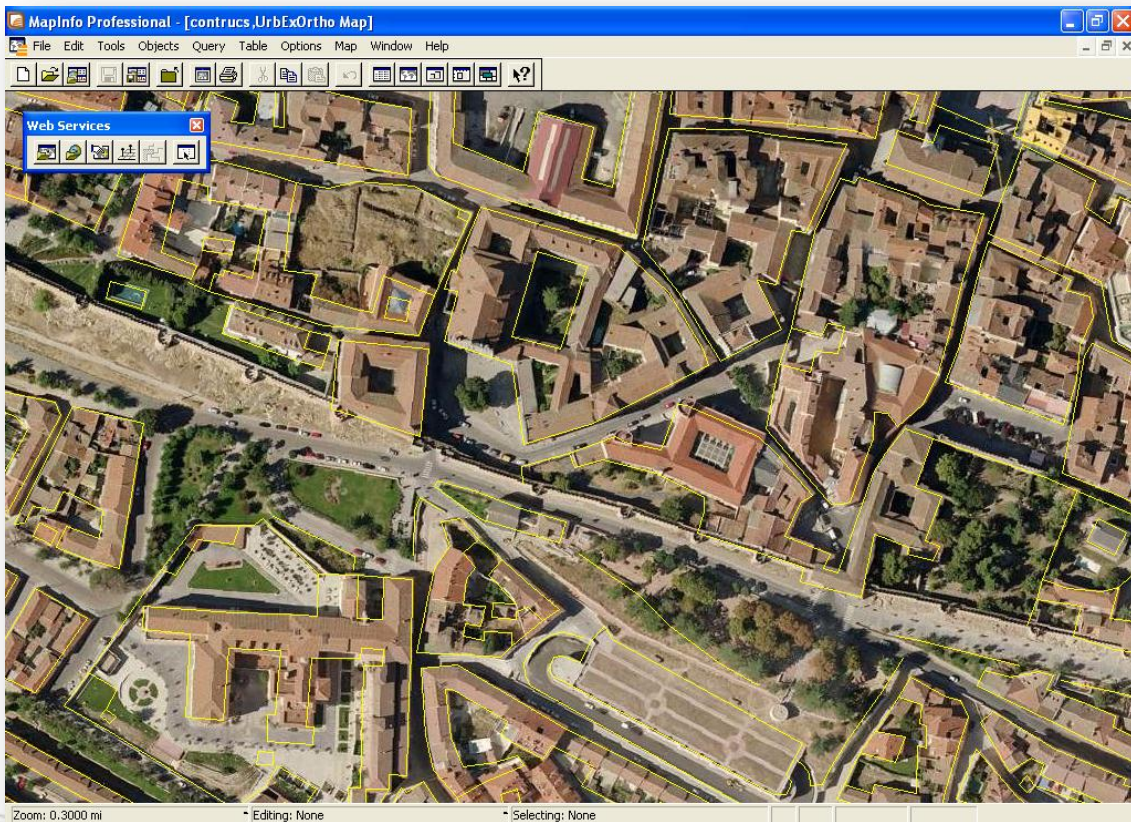


4. The "Open WMS Table" dialog opens. In the WMS Server dropdown box ensure "Blom URBEX Server" (or whatever name description we typed for the BlomURBEX server previously) is selected. Select the "Ortho Images WGS84" layer in the WMS Layers list below the "Maps > Maps WGS84" group layer. There are five layers available: Ortho Images WGS84, North Images WGS84, South Images WGS84, West Images WGS84, and East Images WGS84.



It would be better to select any of the layers available under the "Maps > Maps Spherical Mercator" group layer, because these layers are returned faster from the server. But current release of MapInfo Pro does not support the Spherical Mercator projection defined as EPSG: 3785, so for now ignore that layers.

5. Once one of the WGS84 layers is selected click Add to add it to the right list of layers to request. Leave the Style dropdown box with the <Default> value. Leave the Image format dropdown box with the default "image/jpeg" value. In the Projection dropdown box select the EPSG: 4326 projection as shown in the figure. Type "URBEXOrtho.TAB" as file name in the Table filename textbox instead of the default Untitled.TAB. Leave the rest with default values and select "Current mapper" in the preferred view dropdown box. Finally click OK to create a TAB file in the selected location with a link to the server and add that TAB file as a layer to the current mapper. After some seconds the BlomURBEX ortho layer will be shown under the rest of the map layers. If a "ERROR Unauthorized" message appear you should consider if the extent requested is too big (read below) or if your usertoken do not authorize to see the current map coordinates.

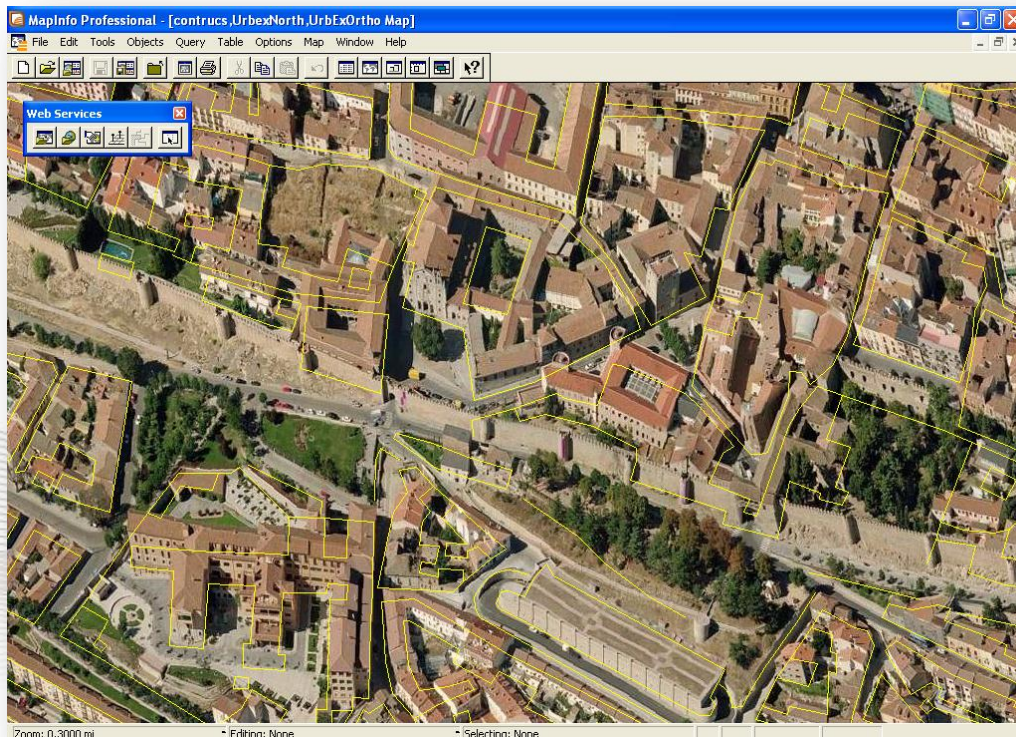


Once a TAB file is saved with the BlomURBEX layer config, to add the layer to other maps it is not necessary to use again the "Open WMS Table" button. Instead, open that TAB file as any other TABs.

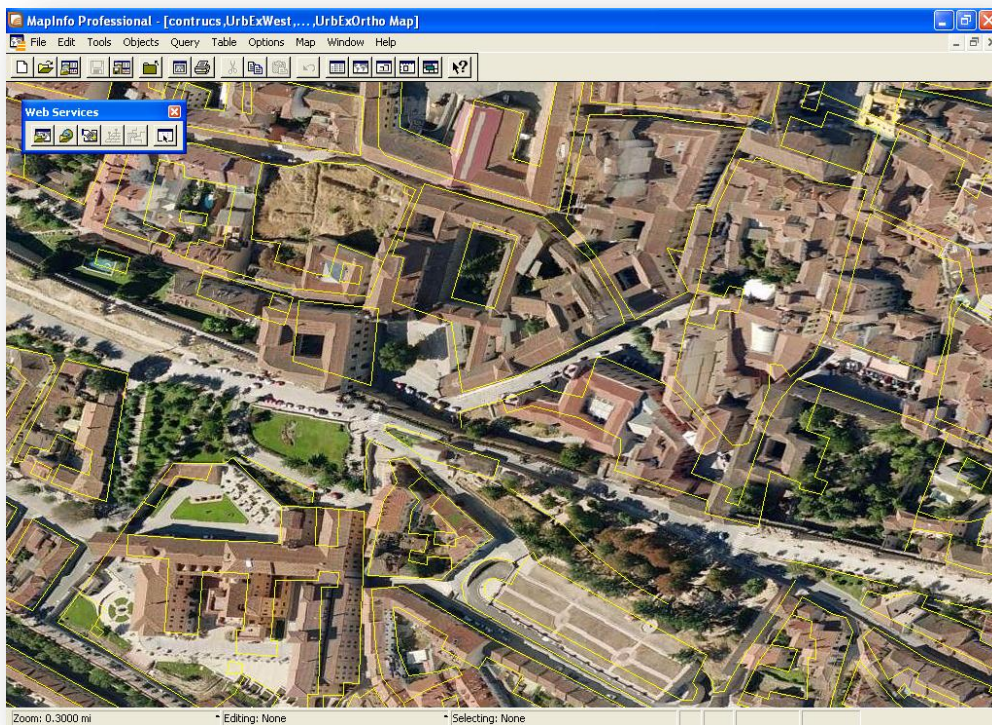
14.3 Adding BlomURBEX imagery as WMS ortho-rectified oblique layer in MapInfo

Follow these steps:

1. To add the North, South, West and East ortho-rectified oblique layers from BlomURBEX, follow the steps 1 to 4 in the previous section.
2. In the "Open WMS Table" dialog, select any previous layer added in the right list and click "Remove" to clear all the list.
3. Select in the WMS layers list any of the North Images WGS84, South Images WGS84, West Images WGS84, or East Images WGS84 layers. Be careful to select only one layer at a time. Click Add to add the layer to the right list. Leave the Style dropdown box with the <Default> value. Leave the Image format dropdown box with the default "image/jpeg" value. In the Projection dropdown box select the EPSG: 4326 projection as shown in the figure. Type a name as filename in the Table filename textbox instead of the default Untitled.TAB. This way each BlomURBEX layer will be configured in different TAB files. Leave the rest with default values and select "Current mapper" in the preferred view dropdown box. Finally click OK to create a TAB file in the selected location with a link to the server and add that TAB file as a layer to the current mapper. After some seconds the BlomURBEX ortho layer will be shown under the rest of the map layers. If a "ERROR Unauthorized" message appear you should consider if the extent requested is too big (read below) or if your usertoken do not authorize to see the current map coordinates.



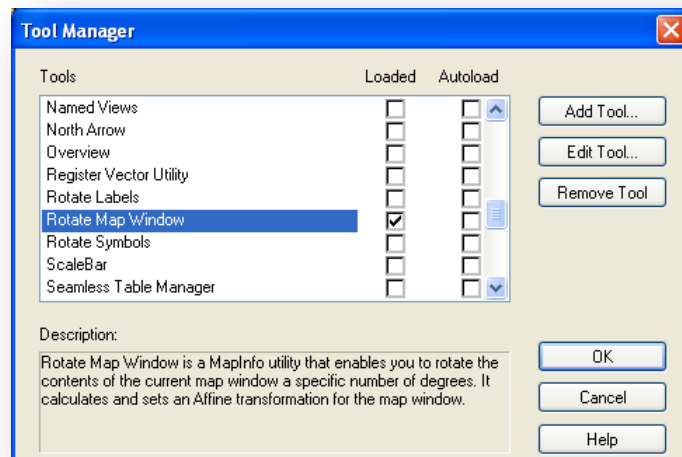
This figure shows the North ortho-rectified image layer.



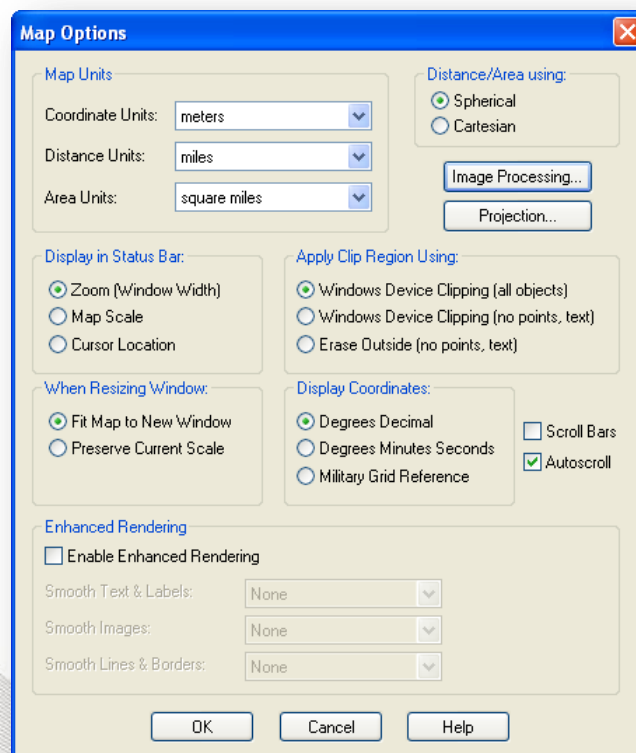
This figure shows the West ortho-rectified layer as is rendered by default.

4. As you can see from previous snapshot, the West, East and South orientations show the imagery by default in a weird way. But this is correct. These orientations are shown this way when the map has the north upwards. To render the map in a kinder way the map should be rotated. Follow the next steps for these cases.

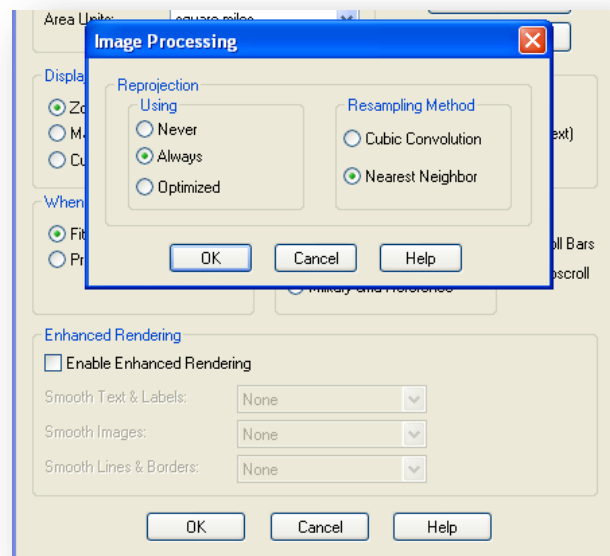
5. To rotate the map a free MapInfo tool will be used. In MapInfo select the Tools > Tool Manager Menu. The "Tool Manager" dialog opens. Select from the list of tools the tool named "Rotate Map Window" and check the loaded checkbox. Click OK to accept changes. The tool is added as a new menu in the Tools MapInfo menu option.



6. Before using the rotate tool it is needed to set up some options for the current map to allow image re-sampling. With the map active select the MapInfo menu Map > Options. The "Map Options" dialog opens. Click in the "Image Processing" button.

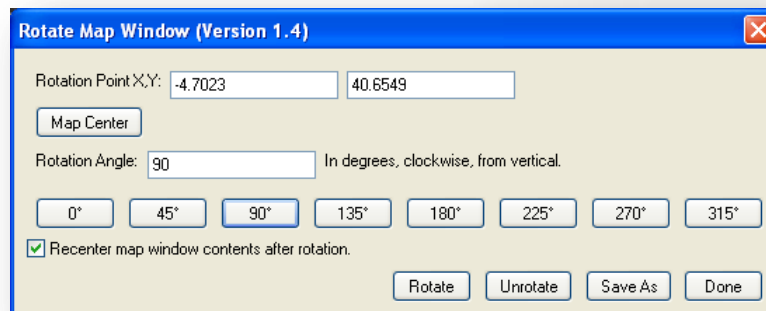


7. The "Image Processing" dialog opens. Select Always or Optimized option, and Cubic Convolution or Nearest Neighbour. These options ensure that images are re-sampled when a transformation is applied to the map, as when rotating or reprojecting.

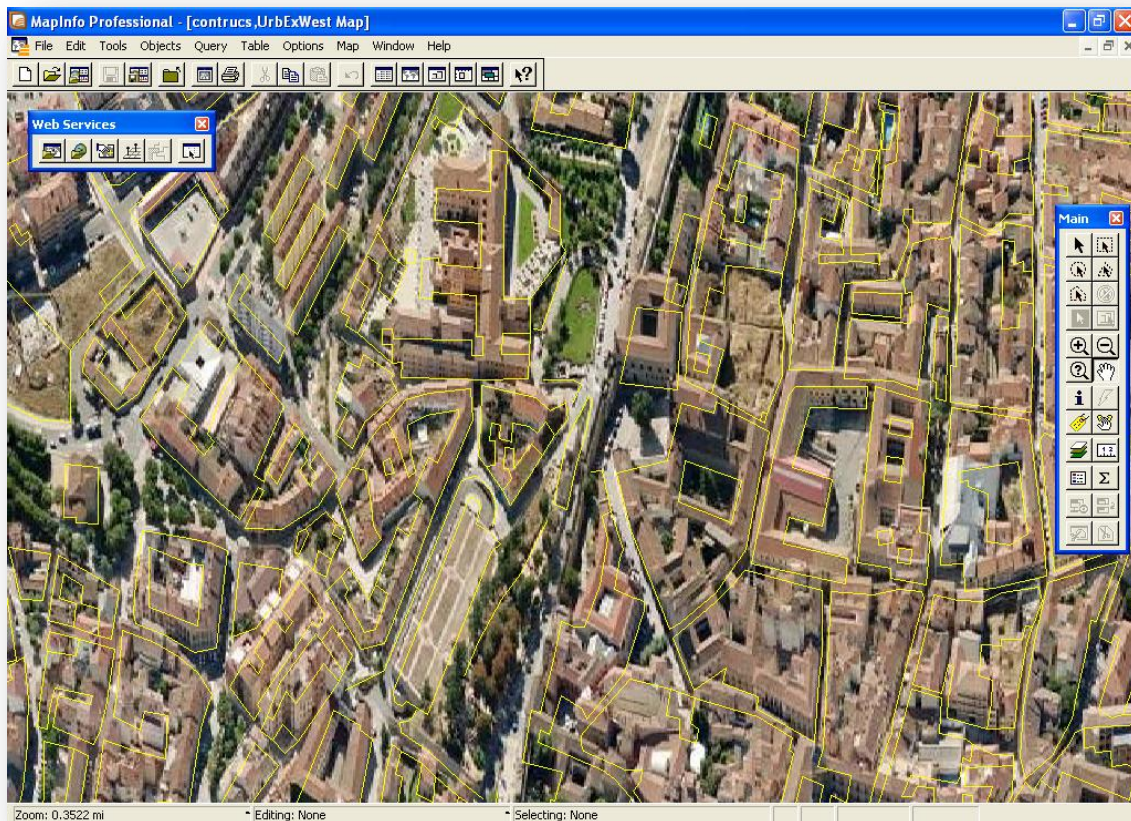


8. Click OK in both "Image Processing" dialog and "Map Options" dialog to accept changes.

9. Now open the rotation tool selecting the Tools > Rotate Map Window > Rotate Map Window menu. The "Rotate Map Window" dialog opens. Click in "Map Center" to select the current map window center as rotation center. To rotate the West image, click in 90°; to rotate the East image, click in 270°; to rotate the South image, click in 180°. Finally click in Rotate button. After some seconds, the map will show the image and the rest of the layers rotated in a clear mode.



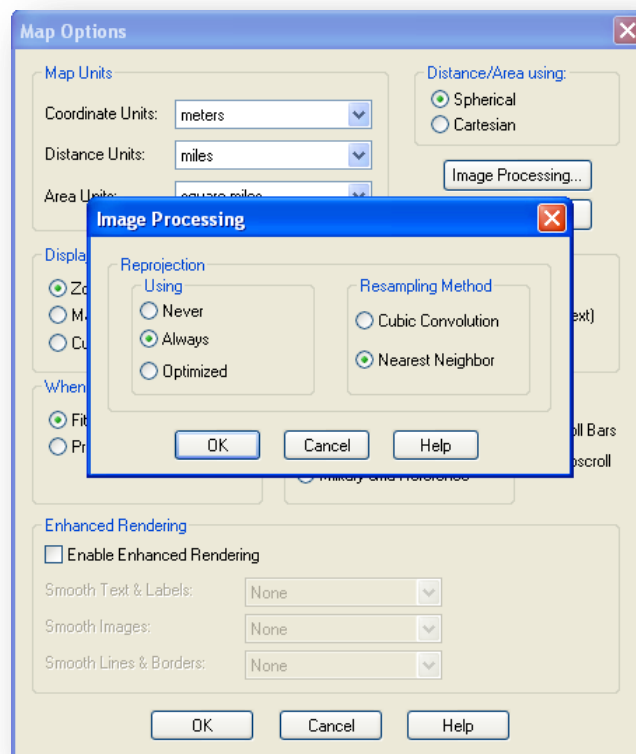
10. This is the final rendering of the West image.



14.4 Projection issues

BlomURBEX WMS services are provided in two different projections: WGS84 Lat/Lon (EPSG: 4326), and Spherical Mercator (EPSG: 3785). Internally, image data is stored in Spherical Mercator, so this is the fastest option. When the image is requested in WGS84 Lat/Lon, the BlomURBEX server re-projects the image data on-the-fly in a slower process. To speed this process, an approximate affine transformation is executed. For this reason, the WGS84 Lat/Lon projection only is available for the highest zoom levels, with resolutions up to 150 meters per pixel. With lower zoom levels (higher resolutions), the re-projection process is not enough accurate.

MapInfo has options that controls if raster data present in the map should be re-projected or not to avoid long-time redraws of the map. These options are located in the "Map options" dialog that opens the Map > Options menu, in the "Image Processing" button. This button opens a new "Image Processing" dialog. Ensure that the Reprojection option is Always or Optimized. With any of this options checked, MapInfo allows to change the projection of a map with raster layers. If not, a message warning appears blocking the projection change.



When a BlomURBEX WMS layer is added to a map, if “Image Processing” is set to Never MapInfo will change the map projection, matching it with the BlomURBEX WMS layer. The reason for this change in the map projection is the Map options previously explained. If the image processing option is set to never reproject, then the map projection must match the raster layer projection. If you detect that MapInfo has changed the map projection, check if the reason is this. You can change again the map projection following the steps explained next.

14.5 Changing the map projection with MapInfo options

Each map in MapInfo has defined a projection. To know the projection of a map, select the menu Map > Options. In the “Map Options” dialog, click in the Projection button to open the “Projection” dialog. The projection selected in this dialog is the current projection defined for the map. If the layers added to the map have their geographic data in the same projection, then they are leave as they are, but if the layers have a different projection, then MapInfo will re-project data on-the-fly, without changing original data sources.



If a new map is created and a projection is not defined for it, then the map will have the projection of the first TAB added.

This on-the-fly projection may be a long-time consumption process for raster data. To avoid this re-reprojection, MapInfo offers a "Image processing" button in the "Map Options" dialog that allows activate or deactivate the on-the-fly re-projection. Ensure that the "Image processing" option is set to Always or Optimized to allow MapInfo re-projection of raster data.



If a BlomURBEX WMS layer or any other raster layer is added to a MapInfo map and the "Image processing" option is set to Never resample images, the map will change its projection to the projection of the new raster layer added. This way it will be not needed to re-project, that is not allowed in the map options. To return the map to the previous map projection if has changed, it will be needed to change the "Image processing" option to Always or Optimized, and change the projection to the previous as explained below.

Although BlomURBEX WMS services only support two projections (WGS84 Lat/Lon and Spherical Mercator), and the useful for current release of MapInfo is only WGS84 Lat/Lon, it is possible to set up MapInfo in order to see the BlomURBEX WMS imagery in any other projection supported by MapInfo.

Once a BlomURBEX layer (with the WGS84 Lat/Lon projection) is added to the map, it is possible to change the map projection. To do this, follow these steps:

1. Ensure that the "Image processing" option is set to Always or Optimized to allow MapInfo re-projection of raster data.
2. Open the "Map options" dialog and the "Projections" dialog clicking the "Projection" button.
3. Select any supported projection from the lists of the Projections dialog.
4. Click OK both in the Projections dialog and the "Map options" dialog to accept changes.
5. MapInfo will re-project any data presented in the map, both vector and raster layers, including the BlomURBEX WMS layers, to the new projection.

15 Uninstalling BlomURBEX Plug-in for MapInfo

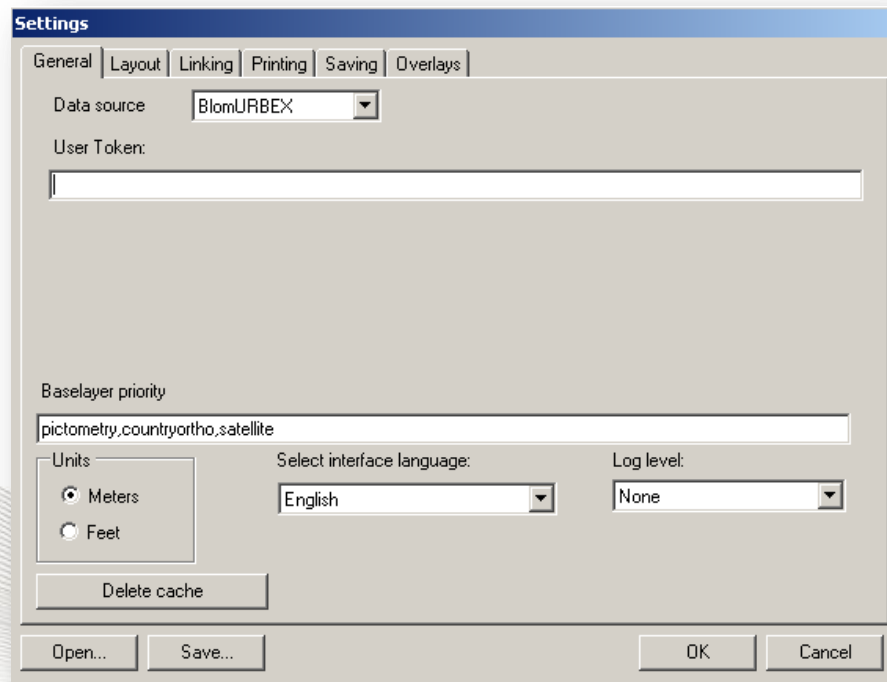
Uninstall is not needed because Mapinfo plug-ins are loaded on demand. Just go to Mapinfo, select Tools > Tool Manager, and in the Tool Manager dialog select the BlomURBEX plug-in, and click in Remove Tool to unregister the plug-in.

16 Troubleshooting

16.1 Log files

If the applications do not work as expected, the best way to know what is happening is to activate the logging utility.

In BlomURBEX Viewer, to activate logs, open the Settings dialog, and in the General tab, select the desired level for logs. A log file or several, one per process, will be created in the [User Application Data] \ BlomURBEX2D folder (usually c:\ Documents and Settings \<username>\Application Data\BlomURBEX2D). To deactivate logs just select "None" as log level. To activate logs select Error, Warning, or Information level (in order from minimum to maximum verbose).



16.2 Cache directory

The BlomURBEX Viewer creates a cache folder for faster retrieve of tiles.

To avoid this folder to resize to a big amount of bytes, it is possible to delete its contents periodically. Deleting the cache folder also ensures that the last tiles are downloaded.

To delete the cache click in the Delete cache button from the General tab of the Settings dialog.



17 Frequently Asked Questions

1. Why I do not see the visible and total extent of images in MapInfo?

Ensure checkboxes in "Linking" tab of BlomURBEX Viewer Settings dialog are checked.

2. Why the point I select in MapInfo is not exactly the same in the image in BlomURBEX Viewer?

The data opened in MapInfo can be in any coordinate system. When digitizing this data, a coordinate system was used, defined by some parameters that describe the Earth and how to convert between projections. BlomURBEX Viewer uses the PROJ4 library to perform transformations between any projection and Mercator Spheric (EPSG: 3785), the default projection that use BlomURBEX Web Services at the moment. If the parameters used by the operator that digitizes the data opened in MapInfo and the parameters used in PROJ4 are not the exactly the same, some shift can occur in the location. In order to minimize this shift, it is possible to modify the epsg file that comes in the BlomURBEX install dir. The parameters must comply with the rules that expect PROJ4. To know more about this, check the appendix below.

3. Why WMS layers are not seen in MapInfo when added?

Check that the layers set to visible are "WGS84 layers", because "Mercator Spherical layers" are not supported by MapInfo 9.5 as are defined now in BlomURBEX server. Also, check that the UserToken is valid and has permission to see image in the zone of the MapInfo map. Finally, ensure that the zoom of the map is closed enough. At far zoom levels, the WMS is not visible.

18 Appendix A: how to add new projections

The projection support relies on the PROJ4 public domain library. In the installation folder of BlomURBEX Viewer a file "epsg" is provided that contains EPSG codes, names and parameters for the EPSG coded projections. If you need to modify an existing projection, or to add support for new projections, modify this file with any text editor following the PROJ4 rules for parameters. See the <http://proj.maptools.org/> webpage for more information.

For example, if support for the Microsoft Live Maps projection is needed, add the next two lines to the file (the second line looks longer but is only one):

```
# World Mercator
```

```
<54004> +proj=merc +lat_ts=0 +lon_0=0 +k=1.000000 +x_0=0 +y_0=0  
+ellps=WGS84 +datum=WGS84 +units=m no_defs <>
```

Or support for Google Maps projection:

```
#Google
```

```
<900913> +proj=merc +a=6378137 +b=6378137 +lat_ts=0.0 +lon_0=0.0  
+x_0=0.0 +y_0=0 +k=1.0 +units=m +nadgrids=@null +wktext +no_defs <>
```

For optimize the Select projection dialog, delete from the "epsg" file any projection not needed. Remember that each projection in the file uses two lines, so do not break the format of this file or BlomURBEX Viewer could not work correctly.

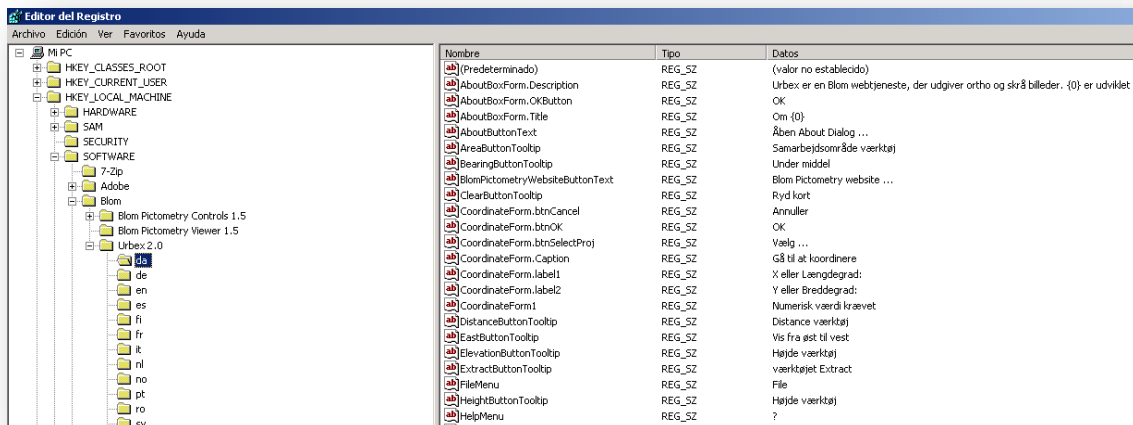
Once the "epsg" file is modified, open again the Settings dialog in BlomURBEX Viewer and reselect again the projection to refresh internal BlomURBEX settings.

19 Appendix B: how to improve interface translation

BlomURBEX Viewer interface supports twelve languages. The strings for each language are stored in the registry, in the path HKEY_CURRENT_USER / SOFTWARE / Blom / URBEX 2.0. Each language has a section: english (en), español (es), deutsch (de), français (fr), italiano (it), nederlands (nl), portuguese (pt), dansk (da), norsk (no), svenska (sv), suomi (fi), româna (ro).

Each string uses a pair name-value. The name is an easy-to-understand name. For example, "AboutBoxForm.Description" is the description for BlomURBEX Viewer that appears in the About dialog. Change these values at your convenience using the registry editor. Next time you open BlomURBEX Viewer will reflect your changes. If any value is missing, the default value used is the English string.

To return to original translation values, just delete the registry folder (da, de, en, and so on) of the language entries you want to reset. Next time that language is selected inside the plugin, the original entries will be restored in registry for that language.

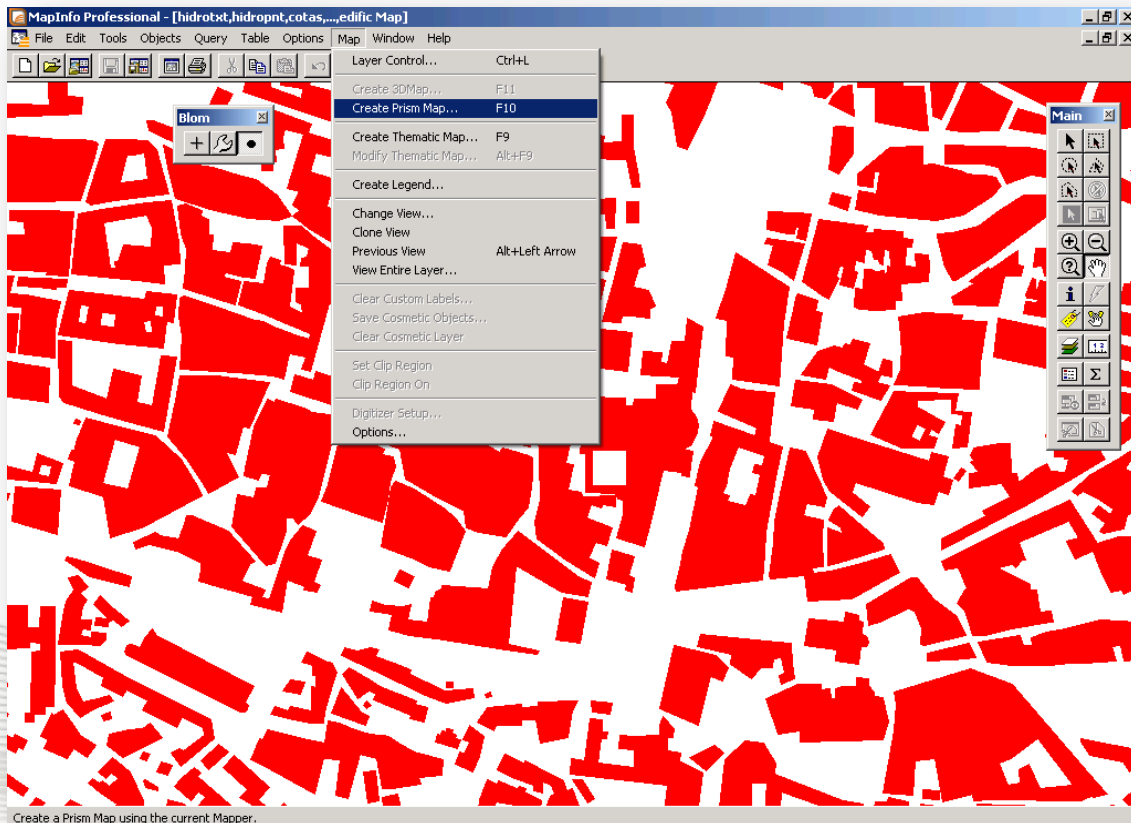


20 Appendix C: how to view 3D cities with BlomURBEX Plug-in

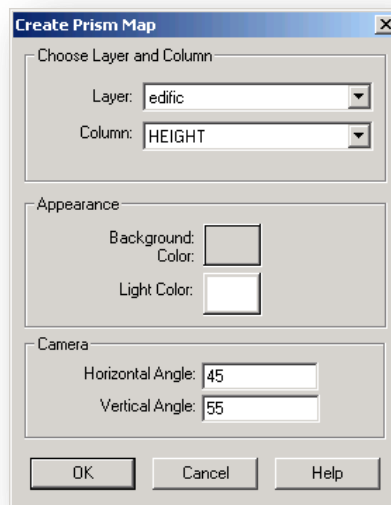
MapInfo supports the render of 3D objects through the use of a new window called Prism Map. In this appendix we will show how use the measurement saving capability of BlomURBEX Plug-in to render 3D cities.

To view 3D cities follow these steps:

1. Open a map in MapInfo and load a table with polygons representing buildings.
2. Create a float field where store heights in the buildings table.
3. Using the BlomURBEX Plug-in, store heights selecting buildings and measuring heights in BlomURBEX Viewer.
4. In MapInfo select menu Map > Create Prism Map. If a warning appears requesting a editable layer, activate the buildings layers as editable in the Layer Control.



5. In the Create Prism Map, select an appropriate color for background and light, and click OK.



6. In order to see the Prism Map correctly, you will need to change the zoom and location, using the Zoom & Pan tools, or using the 3DWindow > Viewpoint Control menu. To scale correctly the buildings, use the 3DWindow > Properties menu.

