BlomDESKTOP Viewer™ User Guide Version 3.6

Audience: **Blom partners, clients and developers**

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Revision History

Document Number	Issue Date	Reason for Change
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BD_UG_2110	Sept, 29th, 2011	Included section 2.5.1 detailing manual Proxy configuration New chapter 13 with description of the BlomDESKTOP Viewer Remote Invocation
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		- New chapter (9) dedicated to describe BlomSTREET™ data into BlomDESKTOP. - Section 13.4 modified with new exportation formats and new projection dialog - New chapter (12) dedicated to describe LiDAR datasets into BlomDESKTOP. - Chapter 14 modified to describe the new Preferences dialog
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BD_UG_3512	Nov 2th, 2012	- Added Master Workspaces

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SECTION 1

BlomDESKTOP Viewer[TM] **Overview**

1   What is BlomDESKTOP Viewer^{TM}?

BlomDESKTOP Viewer^{TM} is a windows desktop application that allows its users to manage, visualize and work with Blom image libraries and local data sources.

BlomDESKTOP Viewer^{TM} offers advanced visualisation, geocoding and measurement capabilities and also allowing connection to the BlomURBEX^{TM} and the BlomURBEX 3D^{TM} geoservers. BlomURBEX^{TM} and BlomURBEX 3D^{TM} are two online services provided by *Blom* from several computing centres worldwide, offering a revolutionary collection of geographical datasets showing urban environments in high-definition imagery and 3D textured models, extracted from at least five different views and accurately geo-referenced to fulfill both end consumer expectations and professional/engineering requirements.

BlomDESKTOP Viewer^{TM} provides a full integration of online and offline (local or intranet-based) data sources, making it possible for its users to add new data sources to their image libraries in a quick, convenient way. BlomDESKTOP Viewer^{TM} is an end-user application and as such, is located on top of the Blom Product Value Chain.
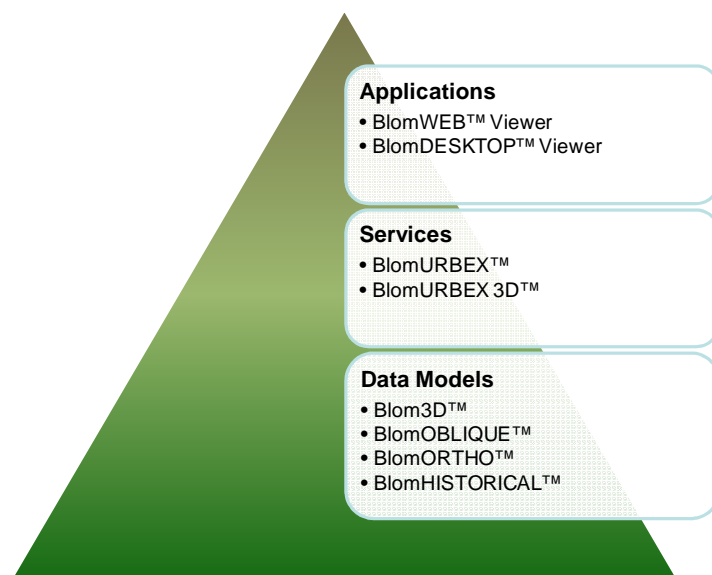
Figure 1: Blom Products Value Chain

Future versions of BlomDESKTOP Viewer^{TM} will include additional tools and functionalities and will allow for greater interface customisation capabilities.

1.1 What is in this document?

This document is a user guide for BlomDESKTOP Viewer™. It provides a simple but detailed user manual covering the installation and licensing of the application, the installation of new data libraries, and a description of all of its features.

1.2 Supported Platforms (system requirements)

BlomDESKTOP Viewer™ is supported by the following operating systems:

- Windows Server 2003 and 2008, windows XP, windows Vista and windows 7.

The software requires Microsoft .NET Framework 3.5. This package is included in the installer so there is no need to install it before BlomDESKTOP Viewer™.

Hardware requirements:

Minimum requirements for 32-bit windows versions:
- Intel® Pentium® IV or AMD Athlon® XP or higher processor
- 512 MB RAM (1 GB recommended)
- 500 MB swap space (2 GB recommended)
- Hardware-accelerated OpenGL® and Direct3D supported graphics device
- Microsoft windows-compliant pointing device (optimized for Microsoft IntelliMouse®)

Minimum requirements for 64-bit windows versions:
- Intel® EM64T, AMD Athlon® 64 or higher, AMD Opteron® processor
- 1 GB RAM (4 GB recommended)
- 500 MB swap space (2 GB recommended)
- Hardware-accelerated OpenGL® and Direct3D supported graphics device.
- Microsoft windows-compliant pointing device (optimized for Microsoft IntelliMouse)

1.3 Document Organisation

This document is divided in two sections.

- Section 1 is this introduction, covering an overview of BlomDESKTOP Viewer™, its role, and its installation procedure.
- Section 2 is the BlomDESKTOP Viewer™ User Guide, detailing all of its features and tools.

1.4   Naming conventions

Throughout this manual you will find several references to menu options. Menu options are usually organized as drop-down menus. To specify a given menu option, it will be shown in **bold text**, starting with the first menu option and going down to the final one, separating each option by an "arrow" (->) symbol.

For instance, the **Quit** option to exit the application, located under the **File** menu, will be referred to as:

File -> Quit

Common mouse actions are referenced in a simplified way.

When you need to press the right mouse button on a given point to do something, this action will be described as **Right-click** the point.

In the same way, when you need to press the left mouse button on a given point to do something, this action will be described as **Left-click** the point.

1.5   Keyboard shortcuts

The following keyboard shortcuts are defined in the application:

- [CTRL + F]   Toggle Fullscreen On/Off
- [F11]   Toggle Fullscreen On/Off
- [CTRL + S]   Save current workspace
- [F2]   Save current workspace
- [CTRL + Q]   Quit application

1.6   For more information

The **Product Roadmap** for BlomDESKTOP Viewer^{TM} detailing the content of future releases of the product is available separately by request, as well as the **Product Factsheet**. Contact your local Blom representative for access to these documents.

2 Installation of BlomDESKTOP Viewer^{TM}

2.1 Installation procedure

BlomDESKTOP Viewer^{TM} is a windows desktop client application that is installed on individual desktop/laptop computers.

The installation information and the application files are contained within an installation package commonly known as "MSI file", from their default file extension. There are two ways to access the BlomDESKTOP Viewer^{TM} MSI:

     a) Provided to you by a Blom representative on an installation CD
     b) Via a download URL.

To install BlomDESKTOP Viewer^{TM} simply double-click on the MSI file to start the installation process.

Please note that **you will require administration privileges in order to install the application**, otherwise an error message will appear as shown below. Contact your local IT manager if the error message shown below appears.
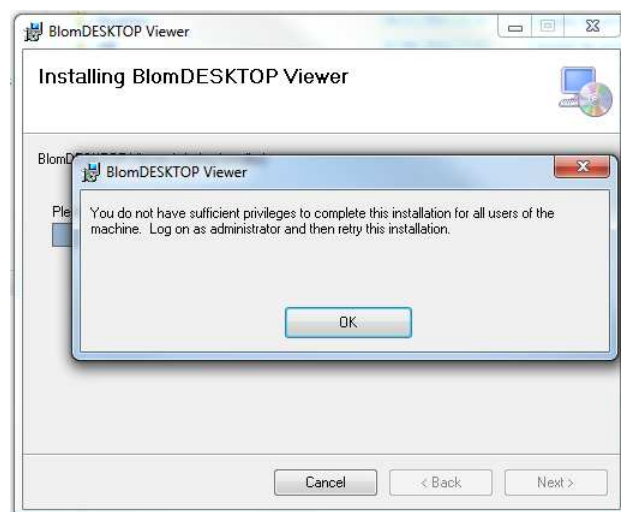
Figure 2: Admin rights are needed for installation

The installation process will require that you read and accept the BlomDESKTOP Viewer™ License Agreement. Use the scroll bar to read the license terms, and click on the I Agree button to accept them. The installation process will not resume unless the license agreement is accepted.
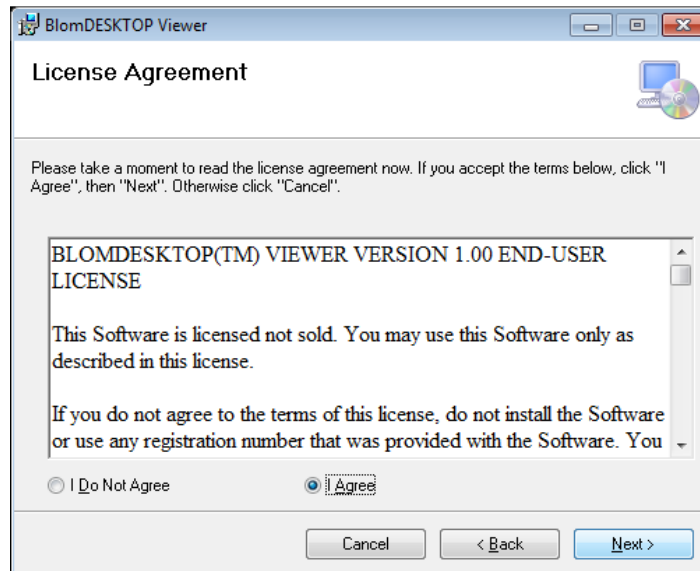
Figure 3: BlomDESKTOP License Agreement

The application will be installed at:

`%ProgramFiles%/BLOM/BlomDESKTOP Viewer`

2.2   Running the application

To run the application, just double-click on the icon located at:

a)   Your computer desktop screen
b)   The windows™ Start menu, inside the **Blom** programs group.

Figure 4: Application Icons

2.3   Licensing the application

In order to be able to use the BlomDESKTOP Viewer^{TM} you will need a valid license file for your computer and associated libraries. Licensing the application can be done in two simple steps:

- Obtain your application code
- Install the license file

2.3.1 Obtain the application code

The first step to license your copy of BlomDESKTOP Viewer^{TM} is to obtain your application code. Open the application and go to the **Help -> About BlomDESKTOP Viewer…** option. The following dialog box will show:
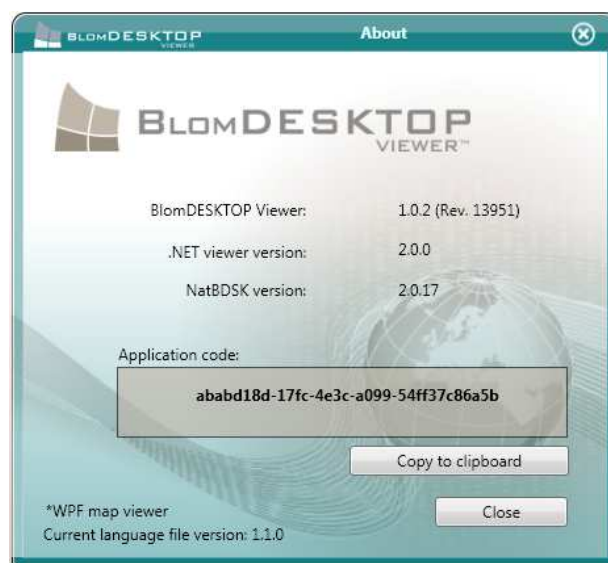
Figure 5: About… Dialog box

Your application code is shown in the grey box. You can use the Copy to clipboard button to copy this application code so you can paste it into an e-mail (or other document). Send this e-mail or document to your local Blom sales representative including the following information:

- Your name and company, along with e-mail and contact details.
- Your application code
- The Blom data libraries that you want to license (name and year of the library)

Your license file will be generated and send back to you via e-mail.

2.3.2 License the application

Once you have received your license file, save it on your computer in a safe location.

Then, open your copy of BlomDESKTOP Viewer^{TM} and go to the **Settings –> License Manager…** option. A dialog box will open showing all available license files on your machine.

Figure 6: License Manager

If your name does not appear on the list, click on the **Add new license…** button and browse your computer to find the location of your licence file. Remember that license files have the .bfslic extension. Once found, select it and click the **Open** button.

Your license will now be displayed and you can close the License manager dialog box. Your copy of BlomDESKTOP Viewer™ is now ready to be used with your set of data libraries.

Note: License servers will be available on future versions of BlomDESKTOP Viewer™.

2.4   Updating BlomDESKTOP Viewer™

Blom is continuously updating its products, adding new features or improving functionality. Whenever a new version of BlomDESKTOP Viewer™ is released, there are three possible methods to update your current version.

   a) Automatic update via public URL
   b) Automatic update via your local Intranet
   c) Manual update via installation file

2.4.1 Automatic update via public URL

BlomDESKTOP Viewer™ connects to a BlomURBEX™ service on start (if an internet connection is available), to search for possible updates. If your company security policy allows for external update of applications, then this service will point to a Blom public URL where the new MSI files are located. Depending on the kind of update, these can be optional or mandatory.

If a new version is found, BlomDESKTOP Viewer^{TM} will ask you if you want to update your current one.

Figure 7: Autoupdate on start

If you want to update your current version, click on **Install new version**. The new MSI will be automatically downloaded and installed. Otherwise click **Continue…** to update your application later.

If you want to avoid the automatic update process, you can check the Check for updates at startup option. You can later search manually for updates using the help menu (see chapter 17).

2.4.2 Automatic update via local Intranet

If your company policy does not allow the installation of software from the Internet, the possibility of automatic updates still exists, but the location of the MSI files can be a shared folder on your local intranet or a simple web service. This must be configured by your IT administrator.

In order for the individual BlomDESKTOP Viewer^{TM} licenses to connect to the local update server, your local IT team will need to configure a private windows registry entry so the software can connect to the internal update server. For more information on this, please contact your local Blom representative.

Once this is done, the update procedure is exactly the same as the described on section 2.4.1.

2.4.3 Manual update

The final option for updating your version of BlomDESKTOP Viewer^{TM} is to get a copy of the installation files. Your local Blom representative will inform you of the release of newer version and will either send you the installation files, or provide you a URL to download.

Once the new version files are received, uninstall the previous version using the uninstall version on the windows application menu. After that, double-click on the new MSI file to install the new version as described in section 2.1.

2.5   Connection via Proxy

BlomDESKTOP Viewer^{TM} requires a connection to the Internet for the following functions:

a)   When trying to access the BlomURBEX™ geoserver
b)   When trying to auto update the application from a public URL

If your connection to the Internet is through a Proxy server that requires authentication, BlomDESKTOP Viewer^{TM} will detect it and it will show the following dialog box:

Figure 8: Proxy Configuration

The IP address of your proxy is shown; whereas the username and password need to be manually configured. Contact your local IT department for details on these credentials.

2.5.1 Manual proxy configuration

If your proxy is configured using automatic configuration scripts, the proxy will not be detected and must be configured manually or you can use the PAC file (Proxy auto-config file). To do so, open the **Settings->Preferences…** dialog box and check the **Configure manually** option at the bottom of the dialog box.
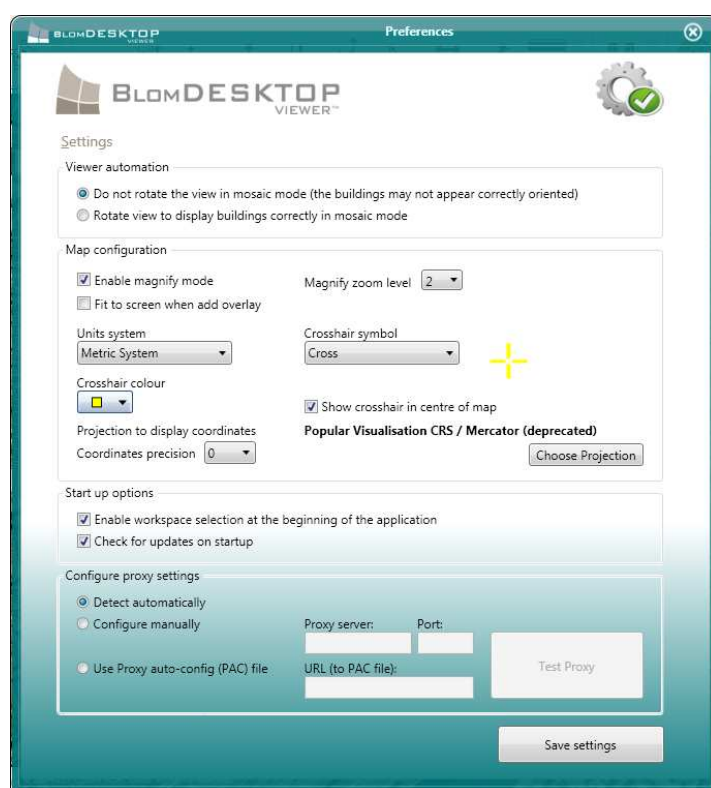
Figure 9: Manual Proxy Configuration

Then type the IP address of your proxy server and the port used. You can use the **Test Proxy** button to check if the proxy server can be accessed from the application.

If you are executing BlomDESKTOP Viewer™ without local administrator rights, the application will not be able to obtain the proxy parameters so you will need to configure it manually as explained here.

2.5.2   Proxy auto config with PAC file:

A proxy auto-config (PAC) file defines how web browsers and other user agents can automatically choose the appropriate proxy server (access method) for fetching a given URL.

A PAC file contains a JavaScript function "**FindProxyForURL(url, host)**". This function returns a string with one or more access method specifications. These specifications cause the user agent to use a particular proxy server or to connect directly.

The Proxy auto-config file format was originally designed by Netscape in 1996 for the Netscape Navigator 2.0 and is a text file that defines at least one JavaScript function, FindProxyForURL(url, host), with two arguments: url is the URL of the object and host is the hostname derived from that URL. By convention, the PAC file is normally named proxy.pac. The WPAD standard uses wpad.dat.

To use it, a PAC file is published to a web server, and client user agents are instructed to use it, either by entering the URL in the proxy connection settings of the browser or through the use of the WPAD protocol.

Even though most clients will process the script regardless of the MIME type returned in the HTTP request, for the sake of completeness and to maximize compatibility, the web server should be configured to declare the MIME type of this file to be either application/x-ns-proxy-autoconfig or application/x-javascript-config.

There is little evidence to favor the use of one MIME type over the other. It would be, however, reasonable to assume that application/x-ns-proxy-autoconfig will be supported in more clients than application/x-javascript-config as it was defined in the original Netscape specification, the latter type coming into use more recently.

A very simple example of a PAC file is:

```
function FindProxyForURL(url, host)
{     return "PROXY proxy.example.com:8080; DIRECT";
}
```

SECTION 2

BlomDESKTOP Viewer^{TM} User Guide

3   BlomDESKTOP Viewer^{TM} Overview

3.1   BlomDESKTOP Viewer^{TM} Features

BlomDESKTOP Viewer^{TM} is a windows desktop application that allows its users to work with Blom image libraries and also to connect to BlomURBEX^{TM}, making it possible to access more than 4000 hi-resolution cities in Europe and vector map data for all of Europe.

BlomDESKTOP Viewer^{TM} features are:

- **Multiple data sources management:** BlomDESKTOP Viewer^{TM} allows users to work simultaneously with different data sources.
  - Blom image libraries
  - BlomURBEX^{TM} online geoserver
  - Raster files (georreferenced JPG, TIF, GIF and PNG, supported)
  - Vector files (SHP, KML and GML files, supported)
  - Connection to External WMS Servers
  - 3D capabilities via BlomURBEX 3D™ (online connection)
  - LiDAR capabilities (via LAS files and online via BlomURBEX™ connection)
  - BlomSTREET™ spherical imagery

- **Navigation capabilities:** BlomDESKTOP Viewer^{TM} allows users to search information and navigate through it in several ways.
  - Geocoding tool
  - Coordinates search
  - Zoom and pan
  - Display of ortho and oblique imagery as well as vector map data.
  - Dual View and Multi View
  - Street map overlay on Ortho and Oblique imagery (via BlomURBEX^{TM})
  - Multiple Oblique views for every point, easy to select
  - Annotation capabilities (points, lines and areas)
  - Magnifying Glass tool

- **Measurement toolkit:** BlomDESKTOP Viewer^{TM} provides a powerful set of measurement tools that allow users to perform calculations directly on the images without the need of coding or use of external GIS Tools.
  - Length tool
  - Area tool
  - Height tool
  - Bearing tool
  - Elevation tool

- **Export and Print capabilities:** BlomDESKTOP Viewer^{TM} lets you export the imagery to different formats as well as directly to a printer.

Future versions of BlomDESKTOP Viewer^{TM} will include additional features. Refer to the **BlomDESKTOP Viewer^{TM} Product Roadmap** and the **What's New** file for additional information.

The following sections detail all of these features.

3.2   How to start working with BlomDESKTOP Viewer^{TM}

This section details how to start your first session with BlomDESKTOP Viewer^{TM} in three easy steps:

    a. Run the application and select a Workspace
    b. Add some data sources
    c. Start working!

This section assumes that BlomDESKTOP Viewer^{TM} is already installed on your system. Refer to section 2.1 for additional information.

3.2.1   Run the application

To run BlomDESKTOP Viewer^{TM}, double-click on the desktop icon or select it via the windows **Start** menu.

Figure 10: BlomDESKTOP Viewer™ icon in the windows start menu

Once the application starts, it gives the option to open an existing Workspace, or to create a new one. If this is your first session with BlomDESKTOP Viewer^{TM} just click on the **Create new Workspace…** button; otherwise select an existing Workspace from the list or click the **Browse for Workspace…** button to search for a previously saved Workspace elsewhere. For a detailed explanation on Workspaces refer to section 4.

Once the Workspace is selected or created, the BlomDESKTOP Viewer^{TM} main screen will be displayed.
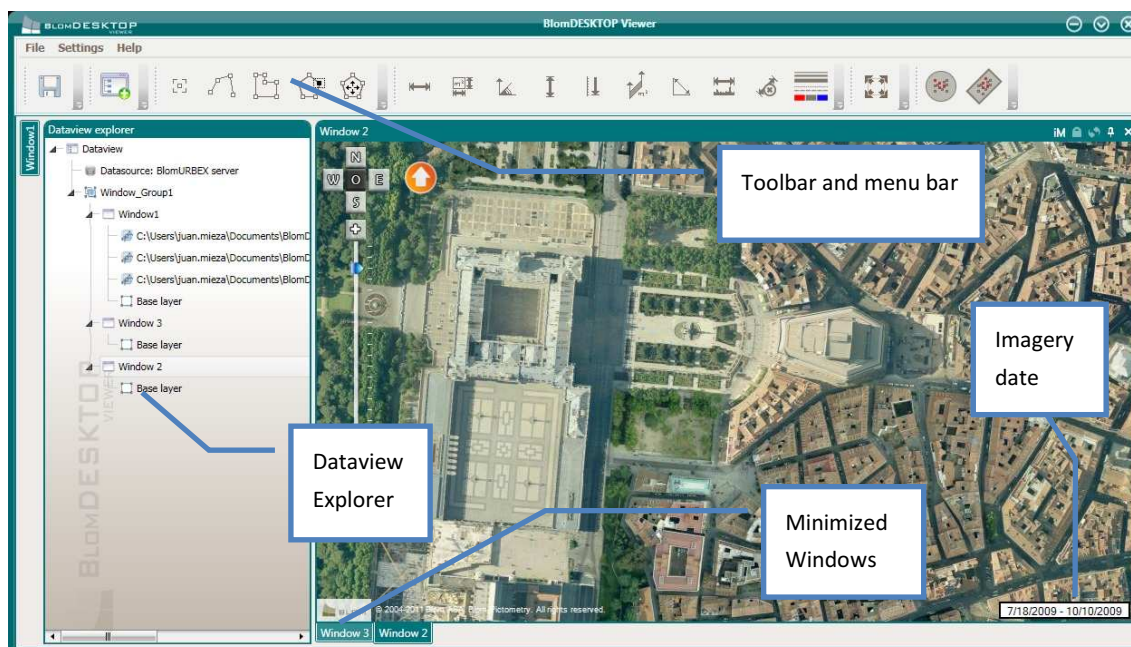
Figure 11: BlomDESKTOP Viewer™ Main Screen

On the left part of the screen (by default) the Dataview explorer is located. This window contains all dataviews, data sources, windows and windows groups that you will be dealing with in your Workspace. These items are explained in more detail in Chapter 4.

Note: this quick tutorial assumes that you already have a license for your copy of BlomDESKTOP Viewer^{TM}. Refer to section 2.3 for details on how to obtain and install your license.

3.2.2 Add data sources

Unless you are opening a previously created Workspace, you will need to define some data sources to work with.

The current version of BlomDESKTOP Viewer^{TM} works with two possible data sources:

- Blom Libraries
- The BlomURBEX^{TM} server

To add a data source, simply right-click on the Dataview element in the Dataview explorer. A pop-up menu will appear.
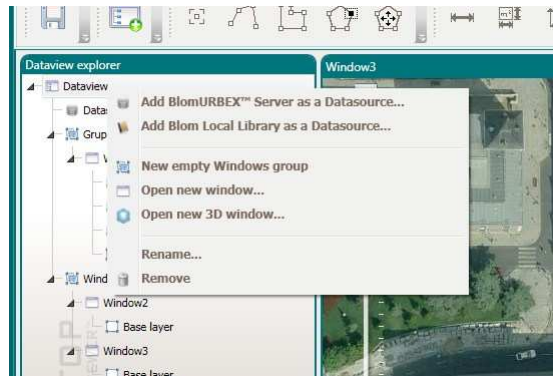
Figure 12: Adding Datasources

If you want to add BlomURBEX^{TM} as a data source, select the **Add BlomURBEX as a Datasource…** option.

If you want to add a Blom library, select the **Add local Blom library as a Datasource…** option.

See chapter 6 for a detailed description of valid data sources in BlomDESKTOP Viewer^{TM}.

3.2.2.1 *BlomURBEX^{TM} as data source*

If you have valid credentials to access the BlomURBEX^{TM} geoserver, and you have an internet connection, you can add BlomURBEX^{TM} as a data source to use in BlomDESKTOP Viewer^{TM}.

To use BlomURBEX^{TM} as a valid data source you need to first configure the connection in the **Settings -> BlomURBEX server connection…** menu option. If you have not already done this, BlomDESKTOP Viewer^{TM} will ask you if you want to configure the connection.

The following dialog box will appear:
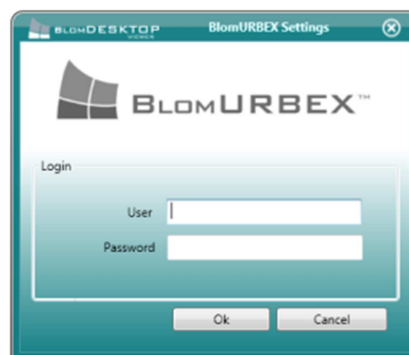
Figure 13: Introducing BlomURBEX™ credentials

Enter your username and password to access BlomURBEX^{TM} and press **ENTER** or click the **OK** Button.

If you entered this information when adding BlomURBEX^{TM} as data source, a new window group and view window will be created (if there was not one previously), and the BlomURBEX^{TM} imagery will be displayed from your starting login coordinates.

To enter this information from the **Settings -> BlomURBEX server connection…** menu option, you will need to go to the Dataview explorer, right-click on the Dataview element and select the **Add BlomURBEX as a Datasource…** option. A new window group and view window will be created (if there was not one previously), and the BlomURBEX^{TM} imagery will be displayed from your starting login coordinates.

Note: If the current Workspace already has another datasource loaded and a view window, any additional data sources that you define will be opened on the same window. In this case, the new data source may not appear directly on screen depending on the current screen coordinates.

3.2.2.2   *Local Blom libraries as data sources*

To add a Blom local library, select the **Add local Blom library as a Datasource…** option on the pop-up menu in the Dataview explorer. A browse window will open.
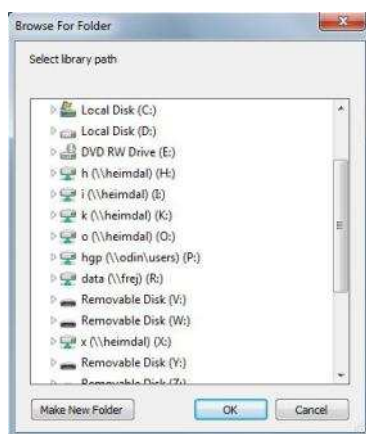
Figure 14: Browse library

Select the location of your Blom Library and click the **OK** button. A new window group and view window will be created (if there was not one previously), and the library data will be displayed from your starting coordinates.

Note: If the current workspace already has another datasource loaded and a view window, any additional data sources that you define will be opened on the same window. In this case, the new data source may not appear directly on screen depending on the current screen coordinates.

Important: In order to be able to view and work with a given Blom library, you must have a valid license for that library, otherwise, the library will not open on BlomDESKTOP Viewer^{TM}. Contact your local Blom representative for obtaining a valid license for your library.

3.2.3 Start working!

That's it, now your data sources are configured and you can start adding other data sources, navigating the imagery and using the different tools in BlomDESKTOP Viewer^{TM}.

The following sections in this user manual will guide you on how to use the different available tools and options.

4   Workspaces

This chapter describes the elements and features of Workspaces in BlomDESKTOP Viewer^{TM}.

As described in section 3.2.1, BlomDESKTOP Viewer^{TM} is based around using Workspaces. A Workspace can be seen as a 'Project' where the user can define which data models and libraries to use, define specific views and their function, add data files, etc… This Workspace can then be saved so all the configuration can be easily retrieved later on. Several Workspaces can be created, so users can manage and work with different projects on different data libraries or geographic areas.

Workspaces are files with the .wksx extension. By default they are saved into the .\Workspaces folder in the BlomDESKTOP Viewer^{TM} installation folder.

4.1   Creating or opening Workspaces

4.1.1   On start up

When you run BlomDESKTOP Viewer^{TM} a dialog box will open, allowing you to select or create a Workspace.
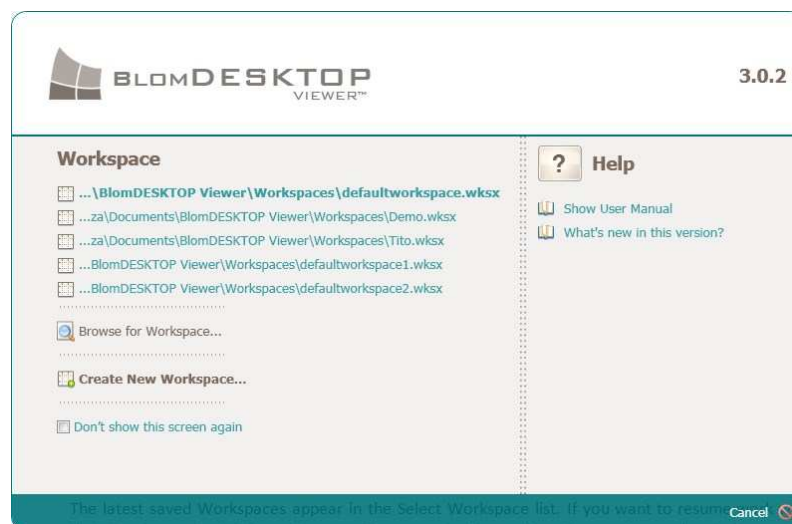
Figure 15: Initial Workspace selection

4.1.1.1   *Opening a saved Workspace*

The latest saved Workspaces appear in the Select Workspace list. If you want to resume work with that Workspace, just click on its name. You can also Browse for other workspaces by clicking on the **Browse for Workspace…** option to open the File search dialog box.

You can also double click on a workspace file (*.wskx) in Windows Explorer to directly open BlomDESKTOP Viewer™ and make it load that workspace.

4.1.1.2 *Creating a new Workspace*

If you want to create a new Workspace simply click on the **Create new workspace…** option. The **Save as…** dialog box will allow you to enter the name of the new Workspace and where you want to save it.
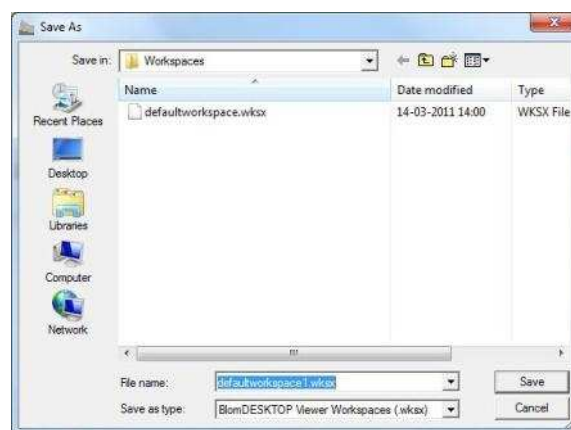
Figure 16: Create new workspace

Once saved, the Workspace will be created and BlomDESKTOP Viewer™ will open with an empty view.
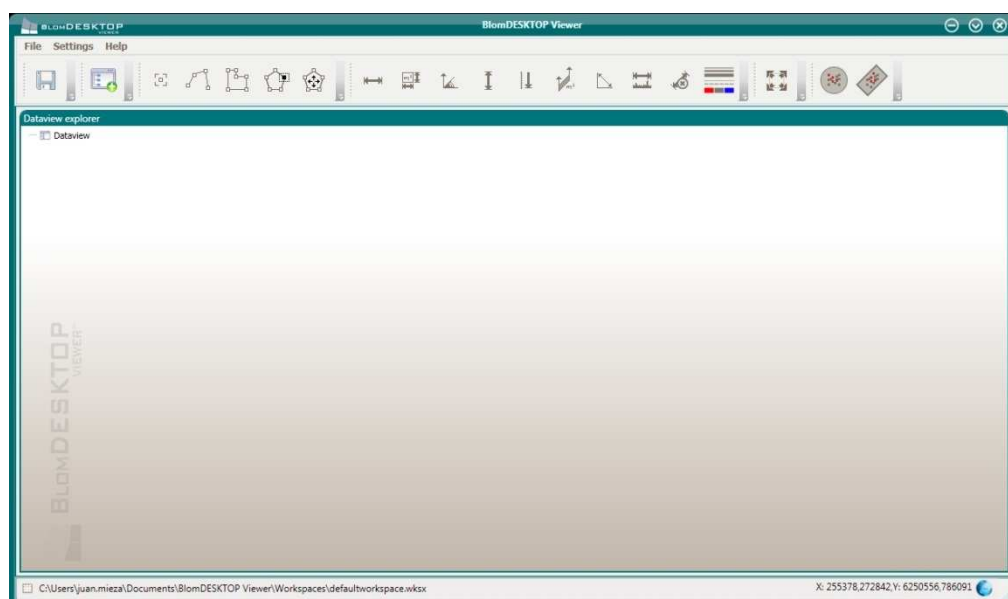
Figure 17: Empty BlomDESKTOP Viewer™ screen

Pressing **Cancel** will abort opening the BlomDESKTOP Viewer™.

4.1.2 Disabling the initial splash screen

If you don't want that the initial workspace selection window appears on start-up, click on the Don't show this screen again checkbox.

To activate this option again, go to the **Settings->Preferences…** option (Refer to Chapter 15)

4.2 Saving your work

You can save your Workspace configuration at any moment using the following **File** menu options:

- **Save Workspace:** this option saves your current Workspace with the same name and path
- **Save Workspace as…:** this option opens the **Save as…** dialog box letting saving your Workspace with another name or location.
- **Save as master Worspace…:** this option opens the **Save as…** dialog box letting saving your Workspace as master workspace with another name or location.

Note: If the current Workspace has changed and you exit the application, BlomDESKTOP Viewer^{TM} will ask you if you want to save your changes.

See 4.3.1 Section Master workspace.

4.3 Opening an existing Workspace

Version 3.0 of BlomDESKTOP Viewer™ allows you to change workspaces from the main application window. To do this simply click on **File -> Open Workspace** to open a submenu with the most recently opened workspace files. Alternatively you can **Browse…** to another location.
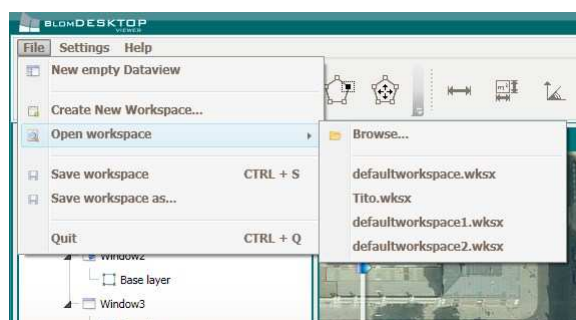
Figure 18: Opening a Workspace from the main window

4.3.1 Master Workspace

Version 3.6.8 of BlomDESKTOP Viewer™ allows you to save your workspace as Master Workspace. It allows the creator to share with more users. Even share the BlomURBEX credentials. Only the owner of the master workspace can save or modify it. A master Workspace displays M icon in the bottom left of the application.
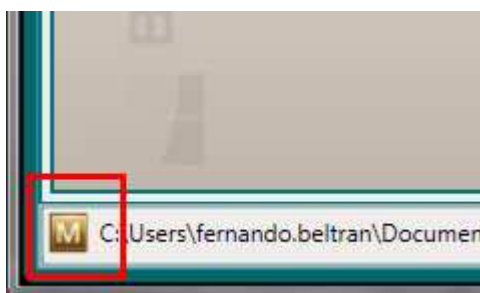
This icon is displayed when you open a master workspace and not owner. You can open the workspace and modify it but, can't save the changes..

4.4 Elements of a Workspace

A Workspace is comprised of one or many **Dataviews**. A Dataview is the basic information unit in BlomDESKTOP Viewer™ and is as a set of data, configurations and windows that display data.

BlomDESKTOP Viewer™ can include several Dataviews in a given Workspace to allow users to work with libraries from different years, or manage BlomURBEX™ and Local Library data separately.

Dataviews contain:

- Data sources
- windows
- window Groups

4.4.1 Data sources

A Data Source is a repository of complex cartographic data that can be managed by BlomDESKTOP Viewer™. In order to work with a Data Source it must be assigned to a Dataview in the Dataview Explorer (see section 4.5)

Current version of BlomDESKTOP Viewer^{TM} supports two different Data Sources:

- Blom Libraries
- BlomURBEX^{TM} online services

The Data Sources are explained in detail in Chapter 6.

Dataviews treat any collection of data sources as a single entity. This means you can add any number of Blom Libraries to a given Dataview, and BlomDESKTOP Viewer^{TM} will navigate them all as if through a single data source.

4.4.2 Windows

A window is required to display data from a Dataview. Each view will have its own window.

Whenever you add a Data Source to an empty Dataview, a window (and its associated window Group, see below) is created in order to display the selected data.

Additional Data Sources can be added to the Dataview. These will be displayed in the default window. Users can create as many windows as they need to display their data in any way they need.

Windows also allow users to add data sources, raster or vector overlays to the current view. Refer to Chapter 6 for additional information.

4.4.3 Window Groups

Window Groups are auxiliary elements used to group related window views together. You can add any number of windows to a window Group and then configure the view of the associated Data Source.

Using window Groups it is possible to show different views of a given area. Windows in a given window Group can be synchronized, so scrolling or zooming in one will make all other windows in the group move to the same position. You can also choose to exclude some windows from synchronization, so they remain in a fixed position.

Window groups also provide a quick way to close several windows at the same time.

When you select Dual or Multi View modes a new window Group is automatically created to leave your current window deployment unchanged. See Section 4.5.4 for details on Dual and Multi Views.

4.5   Managing elements in a Workspace

4.5.1 Dataviews

Whenever a new Workspace is created, it contains only a single, empty Dataview.

4.5.1.1 ***Adding contents to a Dataview***

To add contents to any Dataview, just select it on the Dataview Explorer by right-clicking on it to show the pop-up menu. You can add Data sources, windows and window Groups to any Dataview.

Available options in the Dataview menu are:

- **Add BlomURBEX server as a datasource…**: this option allows you to define BlomURBEX^{TM} as valid data source for this Dataview. See section 3.2.2 for a quick description on this, and refer to chapter 6 for a detailed description on data sources.

- **Add local Blom Library as a datasource…:** this option allows you to select individual Blom Libraries as valid data sources for this Dataview. See section 3.2.2 for a quick description on this, and refer to chapter 6 for a detailed description on data sources.

- **New empty windows Group:** This will create a new empty windows Group in the Dataview. Nb - that whenever you add a Data Source to the Dataview, the appropriate window and windows Group are created automatically to view the added Data Sources.

- **Open New window:** This will create a new window and its associated window Group. If no data sources are defined, the window will appear black. If Data Sources are added later, they will be directed to that window so no additional windows will be created.

4.5.1.2 ***Creating additional Dataviews***

You can add additional Dataviews to your Workspace. This will allow you to work separately in the same project with different Data Sources or with Data Sources with different years of capture.

To add an additional DataView:

- Go to **File -> New Empty Dataview**. The new Dataview will appear on the Dataview Explorer.

- Press the **Create Empty Dataview** icon on the icon toolbar.

4.5.1.3 ***Removing elements from a Dataview***

You can remove any element from a given Dataview by right-clicking it and select **Remove**. You can delete Data Sources, windows and window Groups.

To delete a Dataview, follow the same procedure, right-clicking on the Dataview and selecting the **Remove** option.

When deleting an element inside the Dataview, all objects located on its tree will be deleted too. This means that deleting a window Group will also delete all windows located in it, and deleting a Dataview will also delete all Data Source, windows and window Groups located in it.

4.5.1.4 *Renaming elements in a Dataview*

Default names are given by BlomDESKTOP Viewer™ to all elements added to a Dataview. These names can be edited for Windows, Window Groups and Annotations (see section 8).

To edit the name of a Dataview element, right click on it and select the Rename… option. The text string in the Dataview will change to Edit mode. Type the new desired name and press ENTER to finish.

4.5.2 Data sources

Valid Data Sources in BlomDESKTOP Viewer^{TM} are Blom Libraries and the BlomURBEX^{TM} geoserver connection.

BlomDESKTOP Viewer^{TM} also allows you to include additional data, such as georeferenced raster files or vector files. These however are not considered Data Sources and are managed at window level (see section 0 for details).

Once a data source is added to a Dataview you can right-click on them on the Dataview Explorer to perform different actions according to the kind of Data Source. These actions are described below:

- **Configure BlomURBEX^{TM} Server connection…**: only appears on BlomURBEX^{TM} Data Sources. This option lets you enter your BlomURBEX^{TM} credentials for accessing the BlomURBEX^{TM} data services inside BlomDESKTOP Viewer^{TM}.
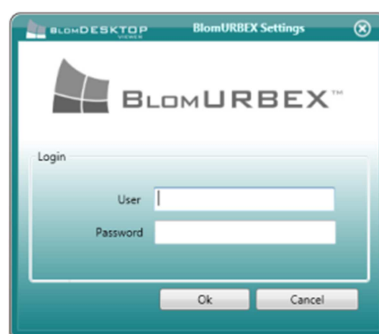
Figure 19: BlomURBEX™ credentials

- **Add another Blom Library…:** only appears on Blom Libraries Data Sources. This option lets you add additional Libraries to the Dataview.

- **Remove:** selecting this option will remove the selected Data Source from the Dataview.

4.5.3 Window Groups

Window Groups are auxiliary elements used to help group related window views together.

A new window Group is created automatically when you add a Data Source to an empty Dataview.

You can add any number of window Groups to a Dataview by right-clicking on the Dataview in the Dataview Explorer and selecting the **New Empty windows Group** option.

In addition you can perform the following actions on a window Group if you right-click on the window Group in the Dataview Explorer to show the menu:

- **Open New window…:** this option will create a new window in the selected window Group.

- **Synchronized:** windows in a window Group can be synchronized, so actions performed in a given window such as zooming or scrolling affect all other synchronized windows. If you select the Synchronized option in the window Group menu, you will synchronize all windows that are previously synchronized with all windows Groups marked as synchronized.

  See section 4.5.4.3 for details on synchronization of windows.

  Example: *We have three window Groups: A, B and C. Every window Group has three windows numbered 1 to 3. If windows A1 and A2 are synchronized and windows B1 and B2 are also synchronized, and if windows Groups are marked as Synchronized, then windows A1, A2, B1 and B2 will be* ***Synchronized*** *one to each other. All other windows in the example will remain unsynchronized.*

- **Remove:** this option will delete the window Group and all related windows from the Dataview.

4.5.4 Windows

Windows are the elements used in BlomDESKTOP Viewer^{TM} to display data. Windows are always associated to a window Group even if they are isolated with no sibling windows.

There are many possible options available for windows in BlomDESKTOP Viewer^{TM}. Right-click on any window in the Dataview Explorer to open the **windows** pop-up menu.

4.5.4.1 *Moving windows*

Windows in BlomDESKTOP Viewer^{TM} are not fixed. You can click on the name area of a window to move it around the user interface, or even position them away from the application main window. Windows are fixed or docked by default. Use the "pin" icon to minimize them if needed. Minimized windows names appear near the Dataview Explorer. Click on a window name to restore its view.

Window is docked. Click the pin icon to "unlock" it

Then click and drag to move the Window
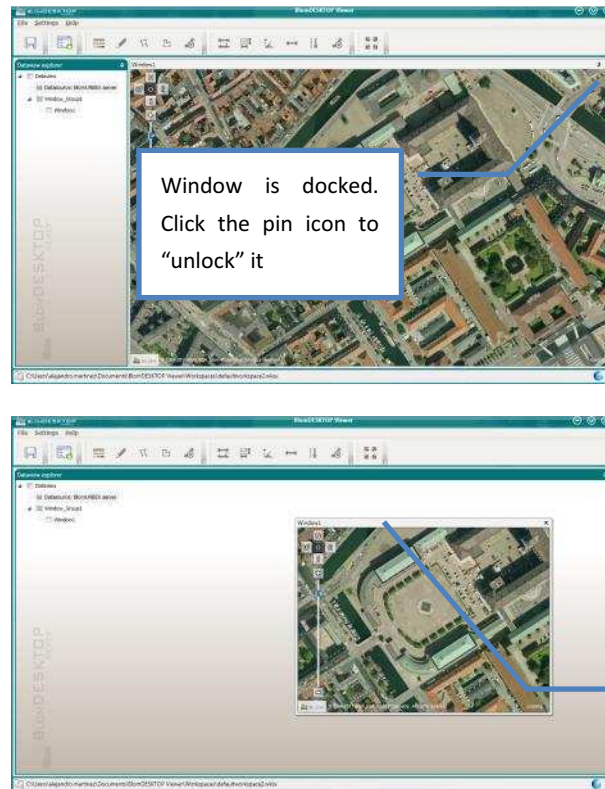
Figure 20: Moving windows

Windows can be docked to fixed positions in the BlomDESKTOP Viewer™ main window. When dragging around to move the window you will notice that some arrows appear on the BlomDESKTOP Viewer™ main window.
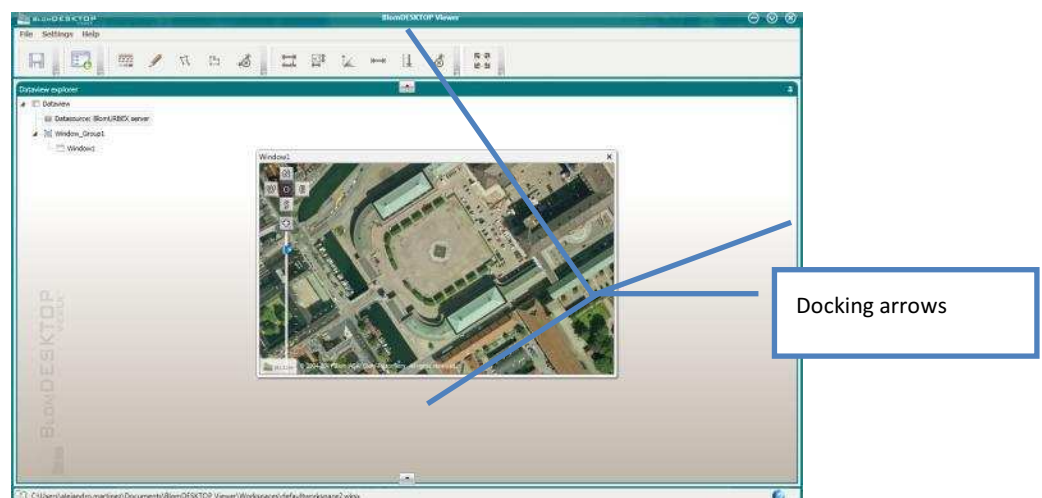
Docking arrows

Figure 21: Docking arrows appear when moving a window

Move the mouse cursor to the desired arrow. A blue area will appear showing the position and size that the window will adopt when you release the mouse button.
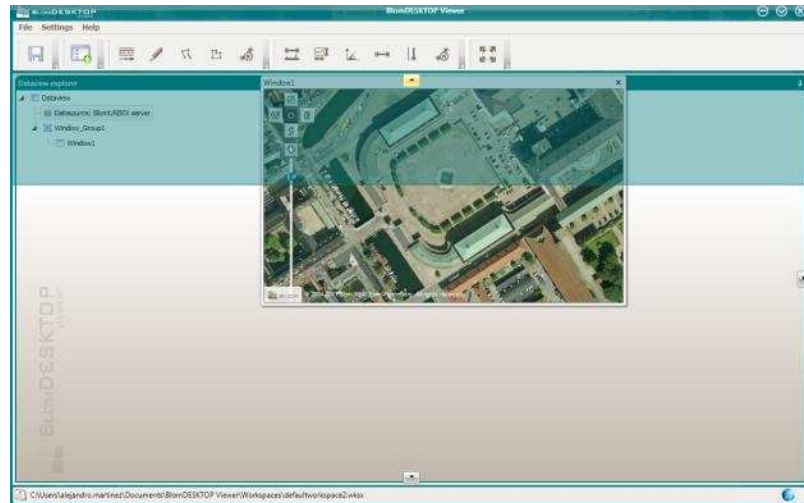
Figure 22: Docking area appears when the mouse moves over a docking arrow

Windows docked in this way can be resized later using the mouse cursor on the sides of the window.

If you move a window over another open window, additional icons will appear to let you drop the window in a position relative to the other window.
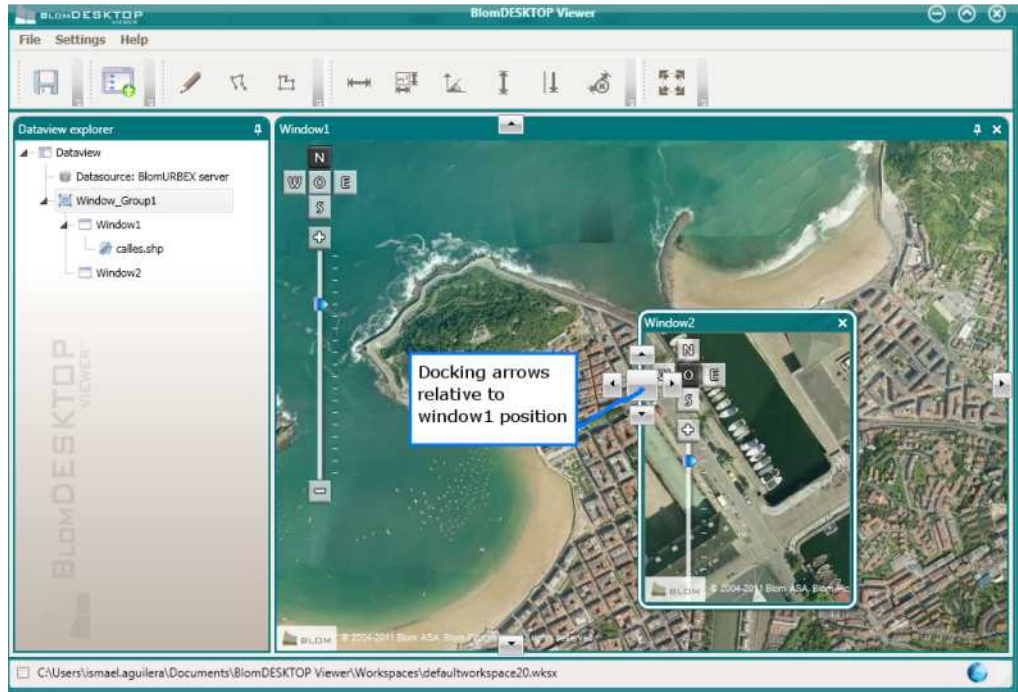
Figure 23: Moving a window over another window
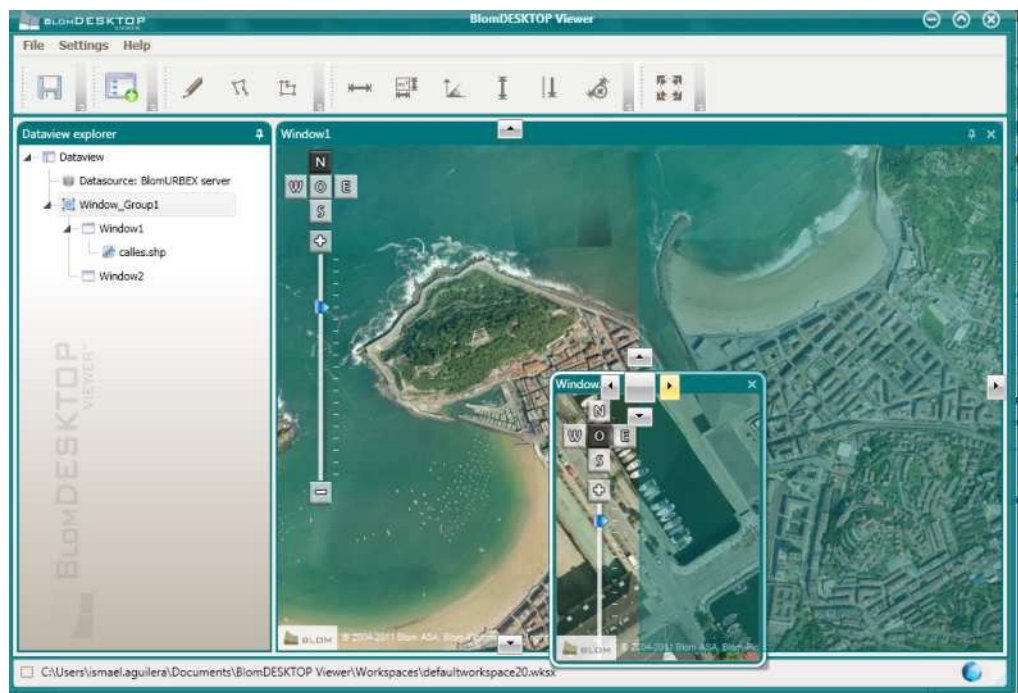
Figure 24: window will dock to the right of window 1

Finally, as in any other MS Windows ™ application, use the '**X**' icon to close the window.

4.5.4.2 *Managing multiple windows*

If you are using multiple windows, sometimes they can become hidden by the other windows in the Group.

To bring a hidden window to the front of the screen, right-click on its name on the Dataview Explorer and select the **Bring to Front** menu option.
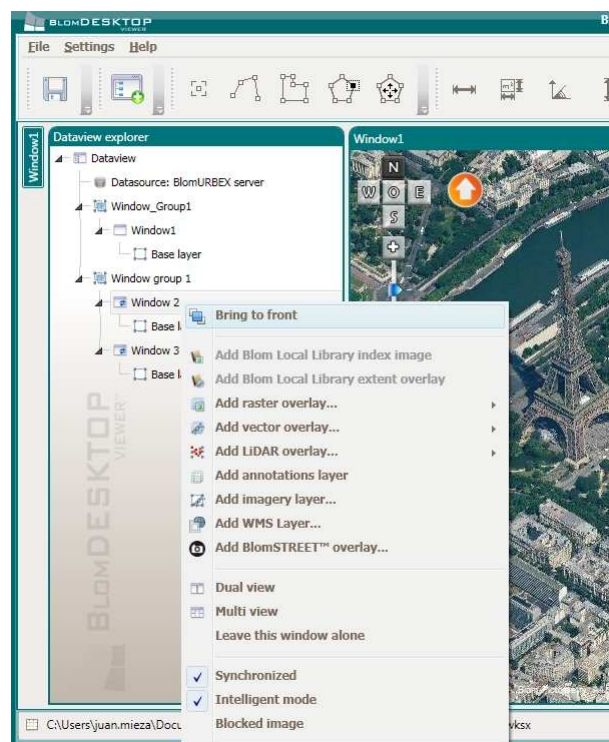
Figure 25: Bring window to Front

Additionally, if you have many opened windows on screen, you can minimize all undesired windows by right-clicking on the window or window name in the Dataview Explorer and select the **Leave this window** alone option.

4.5.4.3 *Synchronising windows*

As the image information in Blom Libraries and BlomURBEX™ can contain several different views of a given point, it is useful to have different windows open in a group to show these different views of the point.

One of the options available is to have different views linked to each other, so when a zoom or scroll action is performed on one window, all other modify their view accordingly.

In order to do this, simply decide the windows in a group that you want to synchronize and right-click on them or on their name on the Dataview explorer and select the **Synchronized** option in the

menu. All windows in a window Group marked as Synchronized will change their view according to any user interaction done on any one of the synchronized windows.

You can also synchronize windows in different window groups using the **Synchronized** option in the window group menu as described in section 4.5.3.

Note: In version 3.0 onwards of BlomDESKTOP Viewer, the **Synchronized** status of any Window is graphically shown by an Icon on the upper right corner of every window

"Synchronized" icon

Clicking on the "Synchronized" icon will change the **Synchronized** status of the Window on or off.

4.5.4.4   *Dual and Multi View*

A quick way to create multiple, synchronized views of data is to use the Dual and Multi View menu options.

A **Dual View** is a set of two synchronized windows, one set to Ortho (Vertical) view, and the other in Oblique view.

A **Multi View** is a set of five synchronized windows, showing the five possible orientations (Ortho, North, East, South and West).

To create a quick Dual or Multi View:

- Right-Click on a window name on the Dataview Explorer and select the **Dual view** or **Multi View** menu option. A new window Group with the Dual or Multi view will be created in the associated Dataview. The Dual or Multi view will display the approximate centre of the latest selected window.

    If the selected window is in Ortho view, the additional window will appear in North view, otherwise, right window will appear in Ortho view.
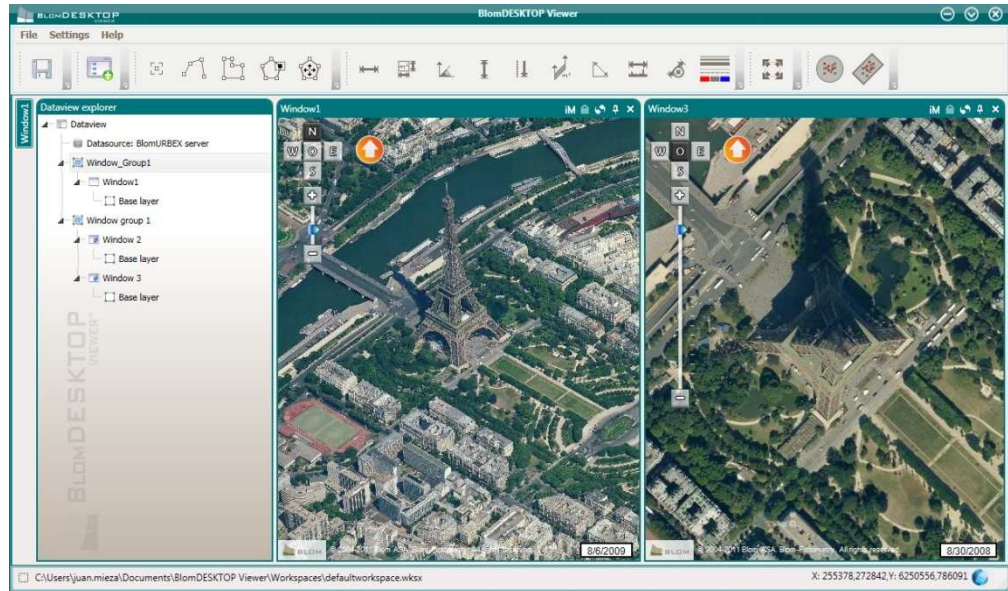
Figure 26: Dual view screen

- Select a window and right-click on any point on the screen to open the pop-up menu; then select the **Dual view** or **Multi view** menu option. A new window group with the Dual or Multi view will be created in the associated Dataview. The Dual or Multi view will display using the selected point as the centre for the new view.

4.5.4.5 *Blocking Images*

Images in Blom Libraries and in the BlomURBEX^{TM} server can be discrete or continuous (mosaic) images. See chapter 6 for detailed information on this topic.

When working with discrete images, whenever a zoom or scroll action takes more than 50% of the view out of the image boundaries, BlomDESKTOP Viewer^{TM} will load another appropriate image from the database (Library or Server) in order to keep the data visualization continuous.

There are occasions however, when it is needed to examine a given discrete image. To avoid the automatic loading of the next image, right-Click on a window, or a window name on the Dataview Explorer and select the **Blocked Image** menu option.
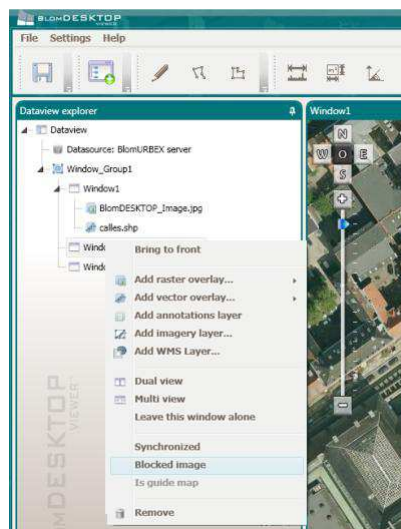
Figure 27: Blocking a window

Now, the selected view is 'blocked', so you can scroll the view without loading a different discrete image, or zoom up and down without loading a different zoom level image.

Note: In version 3.0 onwards of BlomDESKTOP Viewer, the **Blocked** status of any Window is shown by an Icon on the upper right corner of every window

"Blocked" icon

Clicking on the "Blocked" icon will change the **Blocked** status of the Window on or off.

Note: when searching for addresses or coordinates using the **Go To…** option (see chapter 5), blocked windows are automatically un-blocked to be able to appropriately show the results of the search function.

4.5.4.6 *Adding overlays to a window view*

BlomDESKTOP Viewer^TM allows users to work with their own geographic data, such as vector files or raster images. These external elements are not classed as Data Sources so they must be added to a given view at window level.

- To add a raster overlay on a window click on a window, or a window name on the Dataview Explorer and select the **Add Raster Overlay…** menu option.

- To add a vector overlay on a window click on a window, or a window name on the Dataview Explorer and select the **Add Vector Overlay…** menu option.

- To add a LiDAR overlay on a window click on a window or a window name on the Dataview Explorer and select the **Add LiDAR Overlay…** menu option.

- To add a BlomSTREET™ overlay on a window click on a window, or a window name on the Dataview Explorer and select the **Add BlomSTREET Overlay…** menu option

The **Open File** dialog box will open to allow you to search the required file in your local drive or network directory. Once selected, the data will be displayed as an overlay on top of the selected imagery in the window.

Refer to Chapter 6 for a detailed description on overlays. Special overlays such as BlomSTREET™ and LiDAR are covered on Chapter 10 and 13, respectively.

4.5.5 Coordinates visualisation

The lower right corner of the BlomDESKTOP Viewer™ screen will show the coordinates of the last point clicked on the active window. Default projection system is Latitude-Longitude (EPSG:4326). This can be changed in the preferences dialog (see chapter 15).

Note: You can click on the shown coordinates to quickly copy them to the clipboard.

5   Navigating through the Map Interface

The main feature of the BlomDESKTOP Viewer^{TM} is located in its map windows. These windows allow the user to navigate through the geographical content provided by the BlomURBEX^{TM} geoserver or local libraries, as well as zooming and panning the imagery, adding overlays, performing measurements, and searching for elements and addresses.

This section covers the basic controls for navigating the map control. Here you will learn to:

- Move (pan) the maps on the window view
- Zoom in and out in the current view
- Switch views in a window
- Resize the screen/window
- Search by address
- Search by coordinates
- Using the Magnyfing Glass tool

5.1   Panning the map

To move the image displayed simply left-click and hold to pan around the area. The cursor will change to a hand shape and then you can drag the image to the desired location. New map areas will be retrieved from the libraries or the BlomURBEX^{TM} server and shown on screen automatically

5.2   Zooming in and out

Blom geographic contents are organized in different zoom levels according to the resolution of the imagery. For example standard 10cm urban areas are located at zoom level 20. There can be additional levels for higher resolution areas.

To change the zoom level of the images displayed you can:

a) **Use the mouse wheel**. Move it upwards to zoom in, and downwards to zoom out.
b) **Use the zoom control** on the left side of the map. You can click on the **+** or **-** controls to zoom by one level at a time, or move the slider for quicker zooming.

The mouse wheel will produce direct zoom level changes. If you want to zoom smoothly using digital zoom, keep the **SHIFT** key pressed while moving the mouse wheel.
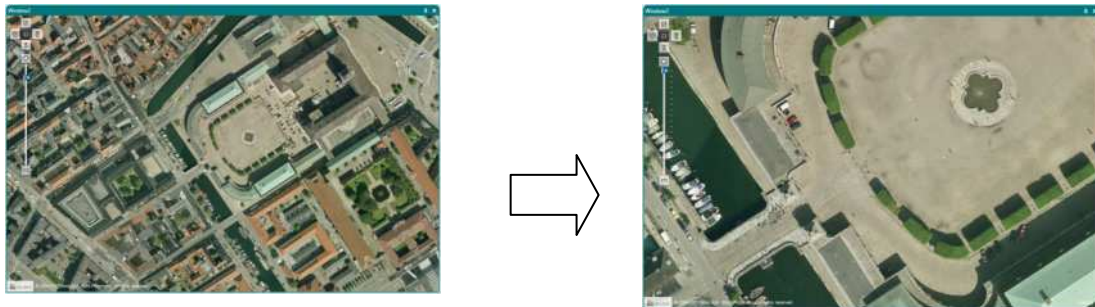
Figure 28: Zoom in action

c) Press and hold the shift-key and left-click and hold the mouse to draw a rectangle on screen. The map will zoom to the area selected in the rectangle.

Figure 29: windowed zoom

5.3   Switching views (ortho – oblique)

Blom has the capability to produce oblique georeferenced imagery for the entire territory of Europe. Images generated this way are a discontinuous set of images without re-projection that cover all points of the terrain from four orientations (North, South, East, West) with a resolution **between 5 and 18 cm. per pixel** depending on camera resolution. Because of the multiple passes required by the aircraft to capture Oblique imagery, this guarantees that for each point of the terrain, there may be up to 18 different images as a single point may appear in different oblique images. BlomDESKTOP Viewer™ manages this set of images, isolating the user from the difficulties inherent in working with them. It also provides tools to perform measurements on the images, so

that users can for example, calculate the height of buildings on the images themselves, and extract detailed information.

In order to switch to a different view, use the view control located on the upper left side of the map window.

In this control, 'O' stands for Ortho (vertical) image and 'N', 'S', 'E', 'W' are the four cardinal orientations for the existing oblique images.

In the following example there is a vertical image of a city square. Note the 'O' is highlighted in the View Control.

Figure 30: Ortho View to be changed to North View

Clicking on the 'N' for North View on the View Control will directly switch to Natural Oblique North View, as seen below. Note that the 'N' control is highlighted after clicking on it to provide visual feedback of the current view. The arrow control on the right provides the location of North according to the current view.

Figure 31: North View

Clicking on other views will change the image accordingly. Below you can see South View for the same area. Note that the 'S' control is now highlighted.
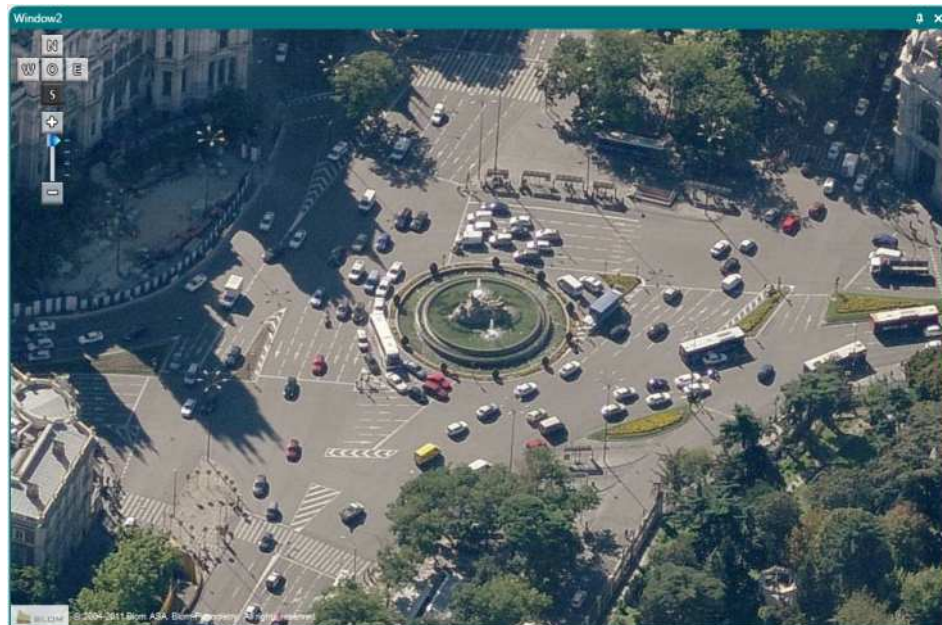
Figure 32: South View

5.3.1 A note on Oblique Images

BlomDESKTOP Viewer^{TM} manages two kinds of oblique images: Natural Obliques and Orthorrectified Obliques.

Natural Obliques are the unmodified oblique images obtained during the capture process. These are discontinuous images (non mosaiced imagery) and because of this, when you pan around the map viewer you will notice black/null areas. This is simply the limit of where the oblique image ends. BlomDESKTOP Viewer^{TM} automatically detects if there is another oblique image in the BlomURBEX^{TM} database or the local Blom Library that better covers the current centre of the screen and if there is a better image, it will display it automatically. When panning oblique images you can sometimes experience a displacement in the image and this is due to a new oblique image downloaded to replace the previous one.
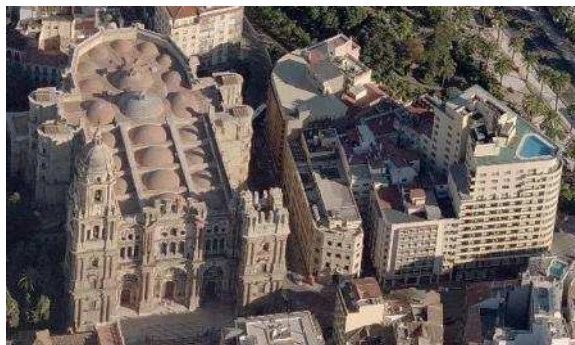
Figure 33: Natural Oblique Image

Orthorrectified Obliques are a continuous projected mosaic of oblique views. This mosaic provides a continuous oblique view from 4 angles (North, South, East, and West) with the oblique images projected, transformed, and orthorectified to correct elevation distortion. The resulting images show a certain degree of distortion that is noticeable at close-up zoom levels. These have the advantage that they are ortho images, so they can be easily superimposed on other maps and processed continuously, making them ideal for **use in mobile devices and navigators**.

Figure 34: Orthorrectified Oblique

Another very important difference between these two sets of oblique images is that Natural Obliques allow for measurements (see section 6.7) and this is not possible on Orthorectified Obliques.

Intelligent Mode option

BlomDESKTOP Viewer^{TM} restricts the view of orthorrectified obliques to zoom level 16 or lower. Because of the nature of these images, there can be visible distortion at closer zoom levels and you can choose whether you want these to be displayed or not. This can be controlled by activating/deactivating the Intelligent Mode option. To do this, simply right-click on the window name and select the **Intelligent Mode** option.
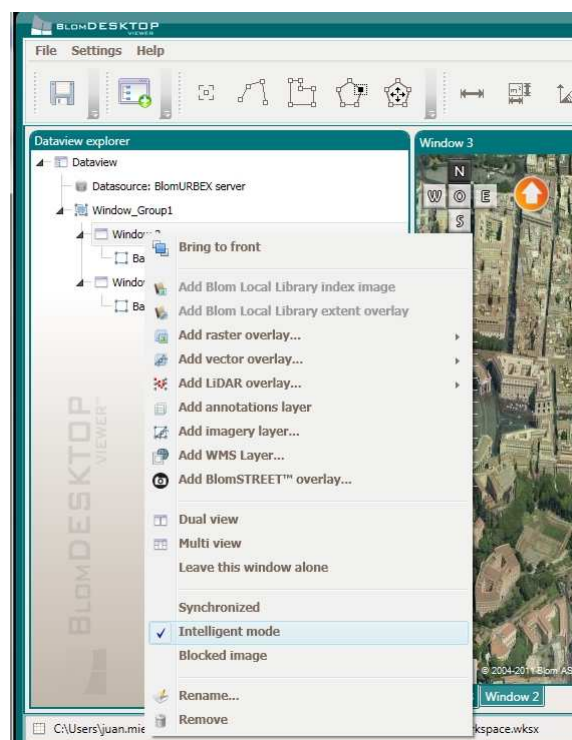
Figure 35: Selection of Intelligent Mode for Obliques

Intelligent Mode is enabled by default. Deselecting it will allow to manually change from Natural Obliques to Orthorectified Obliques using the icon(s) shown below:

Figure 36: Natural Oblique Mode

Natural Oblique is selected
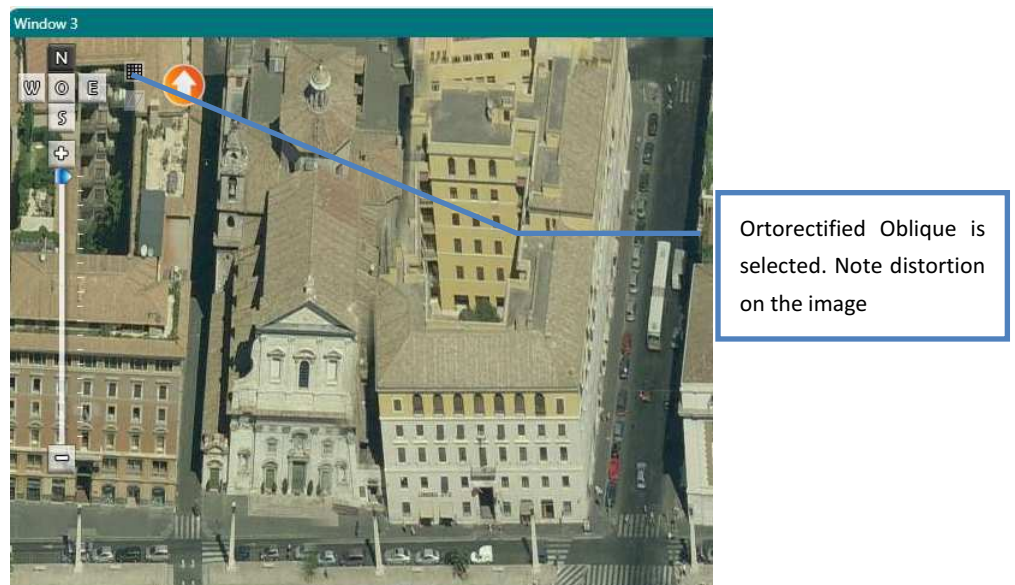
Figure 37: Ortorectified oblique mode

Ortorectified Oblique is selected. Note distortion on the image

Note: the **Intelligent Mode** status of any Window is represented by a small icon in the upper right corner of every window

"Intelligent Mode" icon

Clicking on the "Synchronized" icon will change the **Synchronized** status of the Window on or off.

5.4 Resizing the screen

The BlomDESKTOP Viewer^{TM} window(s) can be resized according to your requirements similarly to any windows-based application by using the mouse.

In addition, the BlomDESKTOP Viewer^{TM} screen can switch to full screen mode. This is very useful for projector-based presentations or demos, where maximizing the image area is required.

To select the BlomDESKTOP Viewer^{TM} full screen mode, simply:

- Select the **Settings -> Toggle fullscreen mode** menu option.
- Click on the ⛶ icon located in the icons toolbar
- Press the **F11** key
- Press the **Ctrl + F** keys

To switch back to normal screen mode press **ESC**.

5.5 Magnifying Glass

BlomDESKTOP Viewer^{TM} includes a feature for when the user requires a high level of detail on the image in order to accurately select points and features to measure or draw lines. Manually zooming on the image is not always the best option as the user may wish to keep a certain area visible on screen for performing the measurement(s). To solve these situations you can use the integrated Magnifying Glass option.

Regardless of the action you are currently performing on a window (zooming, panning, drawing, etc.), if you click and hold the left mouse button for a couple of seconds, a red rectangle will appear surrounding the mouse cursor, and a small magnifying window will appear on the upper left corner of the window.
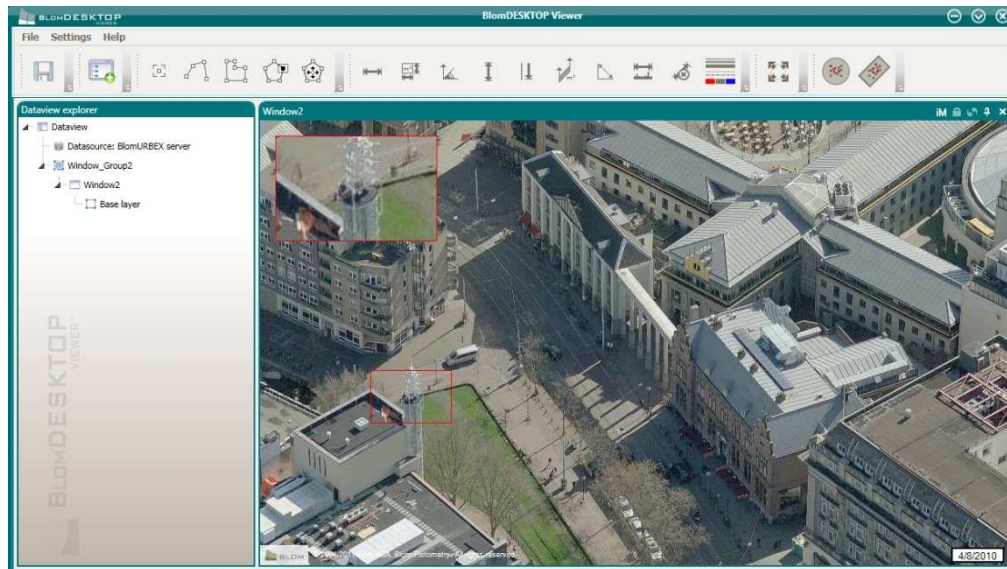
Figure 38: The Magnifying Glass tool

Moving the mouse over the image without releasing the left button will move the red box and the image in the magnifying window will vary accordingly.

Releasing the left mouse button will close the magnifying tool.

The magnifying tool default options can be modified using the **Settings…** menu option. Refer to chapter 15 for details.

6   Data Sources

The current version of BlomDESKTOP Viewer[TM] manages different types of geographic data. These data sources are described here to provide BlomDESKTOP Viewer[TM] users with a data reference guide and glossary of terms.

Supported data sources are:

- Blom image libraries
- BlomURBEX[TM] online geodata services

In addition, external geodata files can be visualised in BlomDESKTOP Viewer[TM] as overlays on top of the data sources.

- Raster Overlays
- Vector Overlays

6.1   Blom libraries

A Blom Library is a catalogue of imagery collected by aerial flight (or other capture means) and packaged in a convenient file format. The Blom Library is composed of a set of Blom File System packages stored into a directory tree, which are packed and encrypted.

Every Blom Library may contain one or several of the following data elements:

- **Discrete imagery:** All images captured when flying a given area. These images can be oblique images, vertical images or nadir images.

- **Mosaics imagery:** Continuous geo-referenced imagery cut into tiles conforming to a Grid at different zoom levels. These mosaics can be: ortho imagery mosaics or ortho-rectified oblique (North, South, East and West) mosaics.

- **Digital Terrain Models (DTMs or DSMs)**

- **Metadata**

6.1.1 Discrete Imagery

Discrete images are individual images captured from the flight (or appropriate device) cameras. They can overlap into one another and they do not form a continuous georeferenced image as mosaic imagery does.

Navigation through these types of images, by their nature, will not be continuous. Users will be forced to 'jump' from one image to another.

There are 2 types of discrete imagery a library can contain:

- **Baselayer imagery:** Images to be shown as background imagery. Usually terrain pictures encoded as JPEG or other formats.

- **Overlay imagery:** Imagery with transparency to be shown on top of the baselayer imagery. Usually, vector images encoded in PNG format.

Depending on the processing the images receive after capture, two additional sets of discrete imagery sets can be defined:

- **Nadir and Oblique Images:** Nadir and Oblique images are images just as captured from a camera in an airplane, with no additional processing. Nadir images are orthogonal pictures, while oblique images are taken at a set angle (usually between 40 and 50 degrees). These have four orientations (North, South, East or West). Nadir images will also have a sub-orientation depending on the cardinal point the plane was heading towards when the picture was taken (North, South, East or West). Depending on the plane's direction, the top of the image will point to a different cardinal direction.

- **Vertical images:** Vertical images are georeferenced Nadir images. The georeferencing process is performed by using a DTM (Digital Terrain Model), in order to identify the exact world coordinates for every pixel in the image. The georeferencing process can create a very slight distortion on the images.

6.1.2 Mosaic Imagery

Mosaic images are continuous, georeferenced images. These are usually tiled into 256x256 pixel images for every zoom level. Blom libraries use the Spherical Mercator projection (EPSG:3785).

As these images are continuous and have no edges, so too is the navigation through them. The user will experience no jumps or overlapping between tiles.

As in discrete imagery, two different kinds of mosaic images can be found:

- Baselayer mosaics

- Overlay mosaics.

6.1.3 Terrain Models

DTM (digital terrain models) or DSM (Digital Surface Models) may be also available on Blom Libraries.

A DTM is composed of a point matrix where every point contains the height above the sea level value for a given coordinate (excludes buildings, trees and other land objects). A DSM provides similar information, but includes the data for buildings, trees and other elements into the provided height values.

6.1.4 Library Metadata

Every library will have some metadata files attached containing relevant information about the library and its content. Some of the information included is mandatory and will always be present, while other is optional.

Some of the mandatory information included in the metadata section of a Blom Library includes copyright info, dates of capture of the information and image resolution.

6.1.5 Accessing a Blom Library from BlomDESKTOP Viewer^{TM}

Blom libraries can be purchased via your local Blom representative.

They are distributed by physical means (external drives or removable media) and they must be copied onto your computer or on a shared folder on your local network.

In order to be able to view and work with a Blom Library, your BlomDESKTOP Viewer^{TM} needs a valid license. This is provided to you by Blom when you purchase a new Blom library. Additional libraries are added to your license file so you only need one license file per computer.

To add a Blom library, simply select the **Add local Blom library as a Datasource…** option on the pop-up menu in the Dataview explorer. A browse window will open

Figure 39: Browse library folder

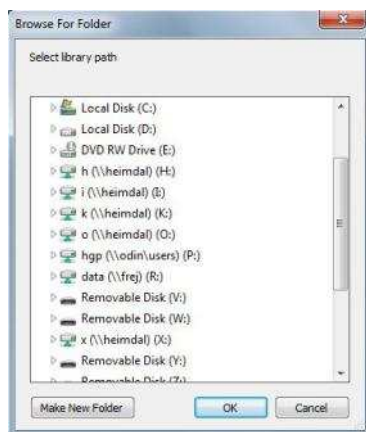Select the location of your Blom Library and click the **OK** button. A new window group and view window will be created (if there were none previously). The library data will be displayed from your starting login coordinates.

If there are no opened windows on BlomDESKTOP Viewer™ when a library is added, the new window that is created will open showing the guide image in the library as a layer.
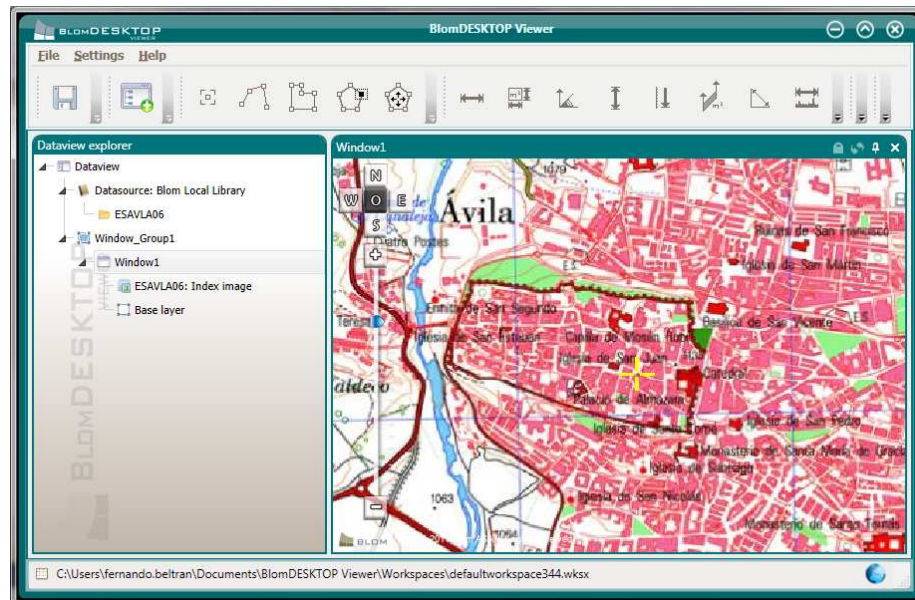
Figure 40: Guide map opened

6.2 BlomURBEX™

BlomURBEX™ is Blom's geographic information server (geoserver). Designed to offer fast, simple access to geospatial models through an extensive set of standardized interfaces on which multiple value-added services can be offered. BlomURBEX™ is fast and powerful enough to serve millions of users, and robust and stable to meet the demands that any ambitious enterprise may require.

At the moment BlomURBEX™ covers more than 1100 urban areas in Europe, which in turn translates into more than 4000 cities.

BlomDESKTOP Viewer™ allows you define BlomURBEX™ as a valid data source, so all of the content served by the online platform can be accessed from BlomDESKTOP Viewer™. You can use this data to fill in gaps in your existing libraries, to check the quality of other geographical areas prior to acquiring the associate libraries, or even to avoid using off-line libraries at all.

For additional information about BlomURBEX™ please refer to the **BlomURBEX™ Product Description** or contact your local Blom representative.

6.2.1 BlomURBEX™ Datasets

BlomURBEX™ datasets include:

- **Vertical (Ortho) images**: continuous projected mosaic of vertical views. High resolution (0,1 to 0,5m) aerial imagery establishing a seamless image view of an area.

- **Oblique images**: discontinuous set of pictures composed of single images covering all points from 5 different angles (North, South, East, West and Vertical). Resolution 5-18 cm, accuracy 1-4m.
- **Ortho-rectified oblique**: continuous projected mosaic of oblique views providing a seamless oblique view from 4 angles, North, South, East and West.
- **Rasterized vector data:** An overlay of rasterized vector data that can be displayed on top of ortho and oblique layers. By default, TeleAtlas street maps are offered as an option, but also custom vector maps can be imported. See section **¡Error! No se encuentra el origen de la referencia.** for details on how to view BlomURBEX™ on BlomDESKTOP Viewer™.
- **Third-party data:** BlomURBEX^{TM} can also host third-party datasets and also serve customer data with the same performance and privacy features as provided for Blom's own data.

The current version of BlomDESKTOP Viewer^{TM} allows connecting to the vertical and oblique image datasets. Future versions will let you select additional information layers from BlomURBEX^{TM} such as the rasterized vector overlay.

6.2.2 Adding BlomURBEX^{TM} as a Data Source

Access to BlomURBEX^{TM} is provided by a valid Username/Password combination or a *usertoken* string. These connection credentials will be provided to you upon request by your local Blom sales representative. These can be either as demonstration or paid-for customer keys.

The connection credentials to BlomURBEX^{TM} will include:

- The geographical area(s) you will have access to
- The different data layers available
- The different BlomURBEX^{TM} services available

To use BlomURBEX^{TM} as a valid data source you need first to configure the connection in the **Settings -> BlomURBEX server connection…** menu. If you have not already done this, BlomDESKTOP Viewer^{TM} will ask you if you want to configure the connection now.

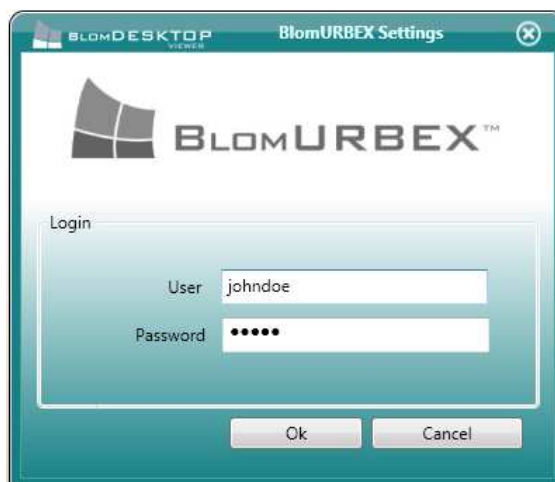The following dialog box will appear:

Figure 41: BlomURBEX™ connection settings

Enter your user and password for accessing BlomURBEX^{TM} and press **ENTER** or click **OK**.

If you entered this information when trying to add BlomURBEX^{TM} as data source, a new window group and view window will be created (if there were none previously), and the BlomURBEX^{TM} imagery will be displayed from your starting login coordinates.

To enter this information from the **Settings -> BlomURBEX server connection…** menu option, you will then need to go to the Dataview explorer, right-click on the Dataview element and select the **Add BlomURBEX as a Datasource…** option. A new window group and view window will be created (if there was not one previously), and the BlomURBEX^{TM} imagery will be displayed from your starting login coordinates.

6.2.3 Different credentials

You can change your BlomURBEX^{TM} connection settings at any point by simply:

- Selecting the **Settings -> BlomURBEX server connection…** menu option
- Right-clicking the BlomURBEX™ Data Source on the Dataview explorer and selecting the **Configure BlomURBEX server connection…** menu option.

This allows switching between different BlomURBEX^{TM} access configurations (if provided to you), without the need to create additional Dataviews or Workspaces.

6.2.4 Base Layer

Version 2.0 onwards includes a default layer called Base Layer. This represents the Data Source layer that you have defined for that window (either a Blom Library or a BlomURBEX™ connection). Having the base layer identified on the window provides you additional control options for the layer such as making it visible or not (see the Overlays section, below, for additional info).

You can also use the **Edit base layer…** option to access the Imagery layer configuration dialog box. This dialog box is intended mainly to work with overlays and is described in detail in section **¡Error! No se encuentra el origen de la referencia.**). For base layers, this dialog will allow to select the date range for the imagery.

By default all available dates options is selected. This shows the latest available year; but you can uncheck that option and select a specific range of years or a single year as seen below.
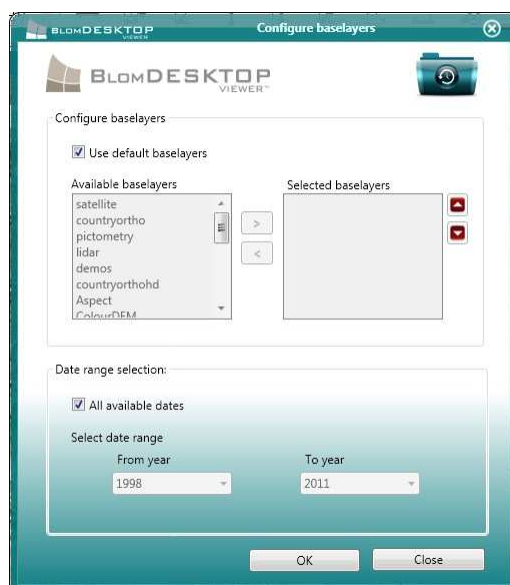
Figure 42: Base layer year range selection

6.3 Accessing libraries metadata

Version 3.0 of BlomDESKTOP Viewer™ allows users to retrieve metadata from Blom Libraries.

If a valid Blom Library is loaded, you can right-click on the Library Name on the DataView Explorer to access to a new menu: Show Library Metadata…

Figure 43: Accessing Library Metadata

This will open a window showing the available layers on the library.
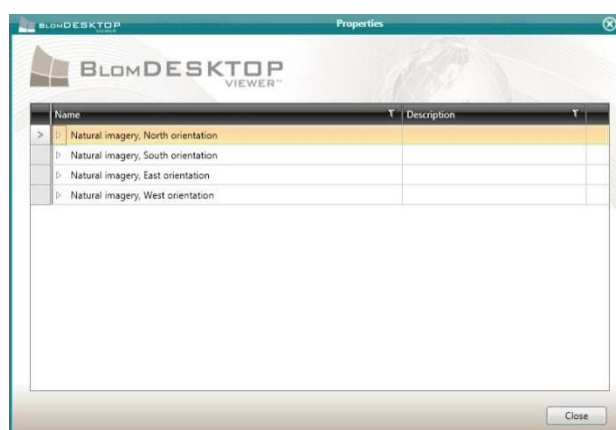
Figure 44: Available layers

Note: Whenever an arrow appears on the left of any row in this window, you can click on it to expand the metadata and additional information view as shown below:
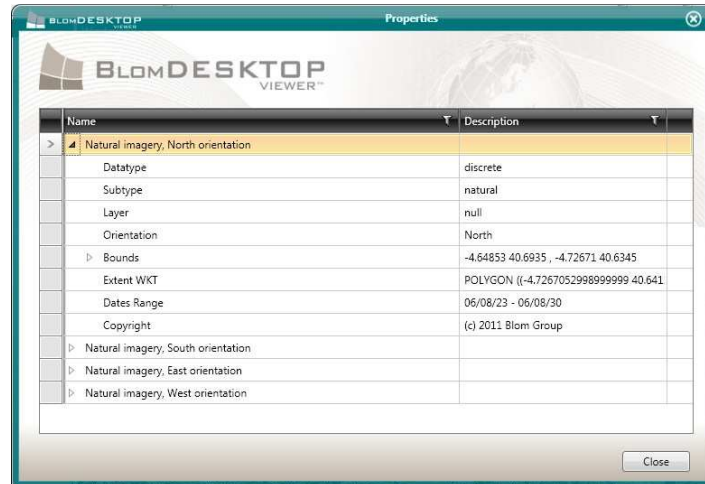
Figure 45: Library Metadata

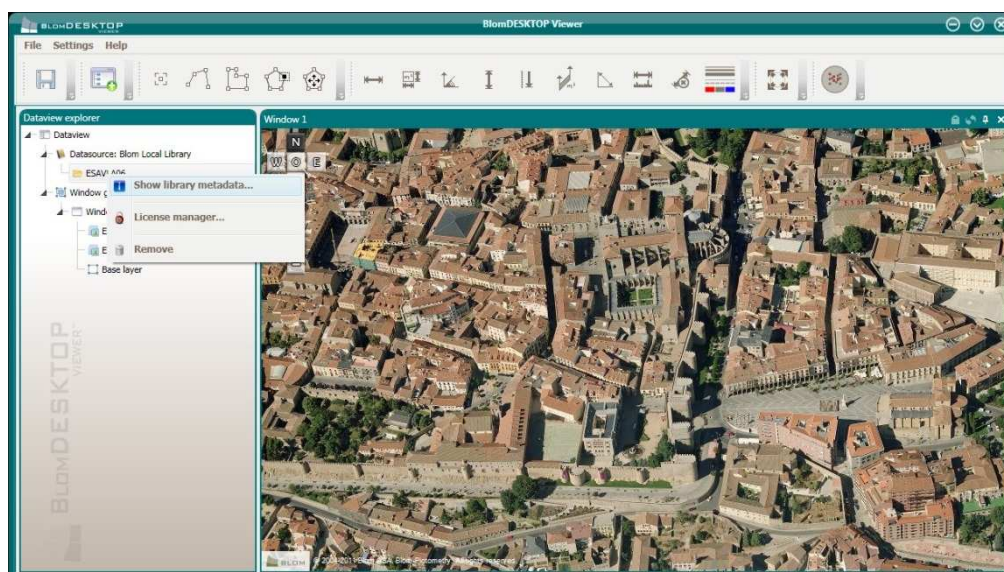## 6.4   Showing Library Extents

When a Blom Library is added to BlomDESKTOP Viewer™ you can visualise the extent of the different available layers on screen.

To do this, simply right-click on any window on the DataView Explorer that is currently showing data from that library and select the **Add Blom Local Library** extent overlay option. You will need to select then the layer which extent you want to show.

Figure 46: Selecting an extent to show

Once selected, a shape file with the extent of the selected layer will displayed. You may need to zoom up or select the **Fit to Screen** option to properly see the full library extent. The image below shows the extent of the Oblique North layer of a given library on top of the Index Image.
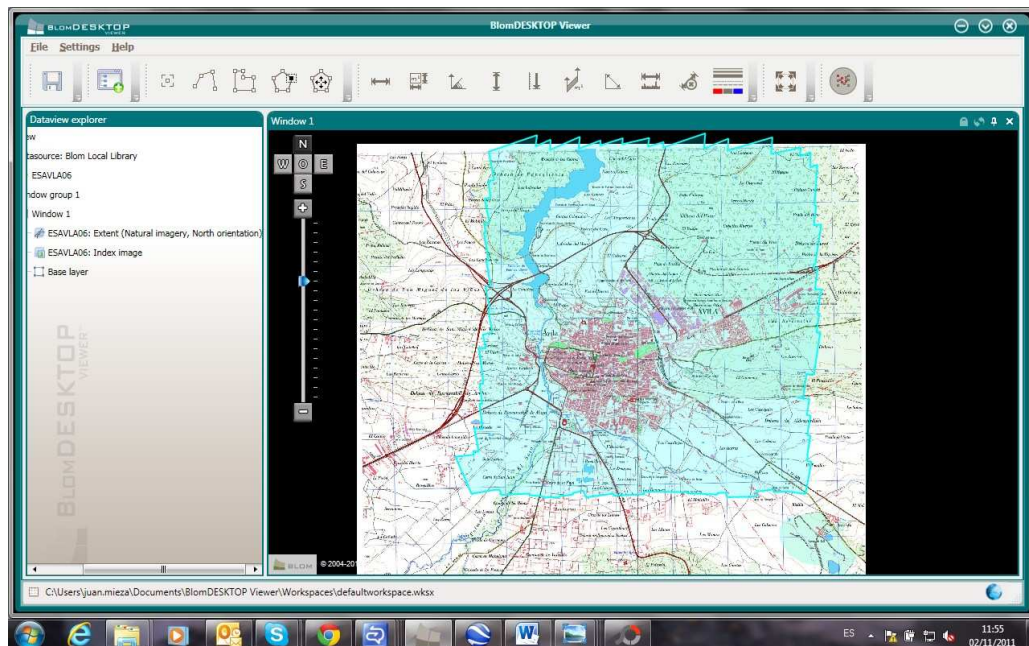
Figure 47: Extent displayed

6.5   Raster and Vector Overlays

BlomDESKTOP Viewer^{TM} will let you overlay external geo data files on top of the data sources.
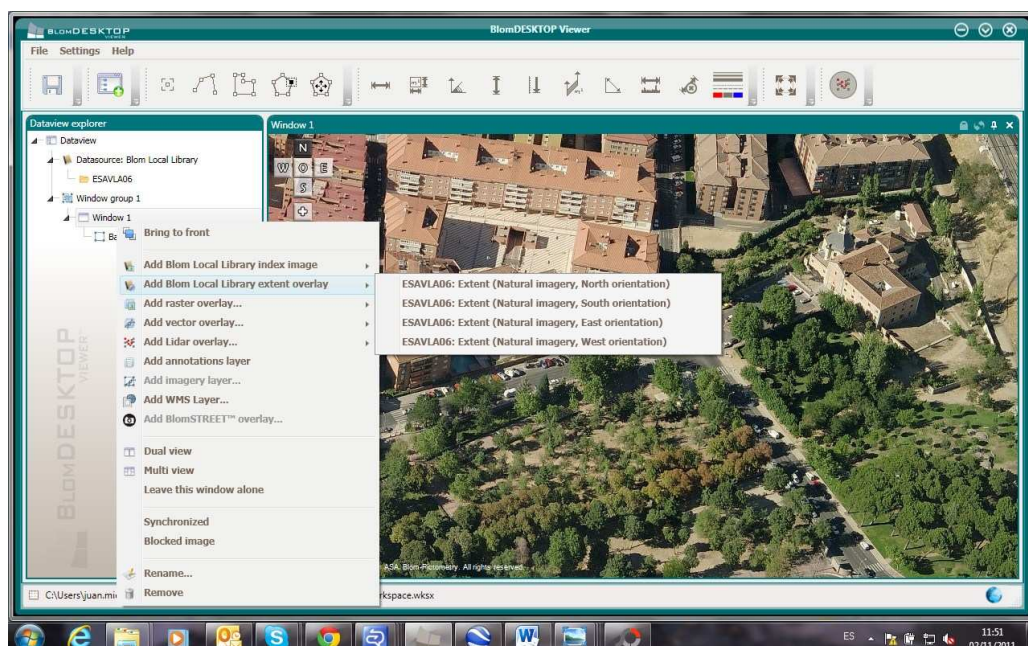
These external data files can be provided as:

- Raster files (geo-referenced JPG, TIF, GIF and PNG supported)
- Vector files (SHP, KML and GML files supported)

Raster and Vector files are not considered Data Sources as they can be provided by third parties so they remain out of the Blom Quality Control process and do not compromise the functionality of BlomDESKTOP Viewer^{TM} as more complex data sources such as Blom Libraries do. Because of this, Raster and Vector overlays are added at window level.

6.5.1 Supported formats

Current version of BlomDESKTOP Viewer^{TM} supports the following formats for external files:

6.5.1.1   *Raster Files*

The following formats are supported via the GDal library.

Format Name	Maximum file size[1]
Graphics Interchange Format (.gif)	2GB
TIFF / BigTIFF / GeoTIFF (.tif) [RBG, ARGB, GrayScale]	4GB for classical TIFF / No limits for BigTIFF
JPEG JFIF (.jpg)	4GB (max dimensions 65500x65500)
Portable Network Graphics (.png)	..

Maximum file size is not only determined by the file format itself, but operating system/file system capabilities as well. Raster files are internally tiled to help performance in visualisation.

6.5.1.2 Vector Files

The following formats are supported:

- GML 3.1.1: (http://www.ogcnetwork.net/gml-sf). Gml is not a definition-closed format so usage of GML Simple Features Profile is recommended. Tests have been done with GML files generated from ArcGis 9.3. Other versions and schemas are not supported in this version.

- KML vector data only. Character encoding iso-8859-1. Compressed format (KMZ) not supported yet.

- ESRI Shape file

- DXF, all versions supported by the GDAL library (http://www.gdal.org/ogr/drv_dxf.html)

6.5.2 A note on projections

Projections supported must comply the Proj4 specification (http://trac.osgeo.org/proj ,http://trac.osgeo.org/proj/wiki/GenParms). If a projection needs a special grid shift file for the conversion between datums, this grid shift file must be copied inside the installation folder. The grid shift table formats are ctable (the binary format produced by the PROJ.4 nad2bin program), NTv1 (the old Canadian format), and NTv2 (.gsb - the new Canadian and Australian format). The definition of the projection must be filled according the PROJ.4 specification: i.e. "+proj=latlong +ellps=clrk66 +nadgrids=./ntv1_can.dat".

EPSG Code: Coordinate systems (projected or geographic) can be selected based on their EPSG codes, for instance EPSG:27700 is the British National Grid using the OSTN02 grid transformation. A list of EPSG coordinate systems can be found in the GDAL data files gcs.csv and pcs.csv. (http://www.epsg.org/)

6.5.3 Adding an Overlay

Overlay data is added at window level. This means that you need to select a valid window in order to display your data.

Select a window and right-click on it, or in its name on the Dataview Explorer. Then select the **Add Raster Overlay…** menu option to add a raster file or the **Add Vector Overlay…** menu option to add a vector file. Then select the **Browse…** option.

Note: that a list of the 5 last opened overlays will appear below the Browse option for ease of use.

The **Open File** dialog box will open to let you search the desired file in your local drive or network directory.
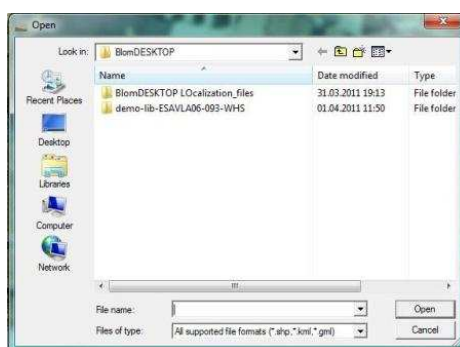

Figure 48: Add overlay data

Once a valid vector file is selected, BlomDESKTOP Viewer^{TM} will try to determine the Projection system used.
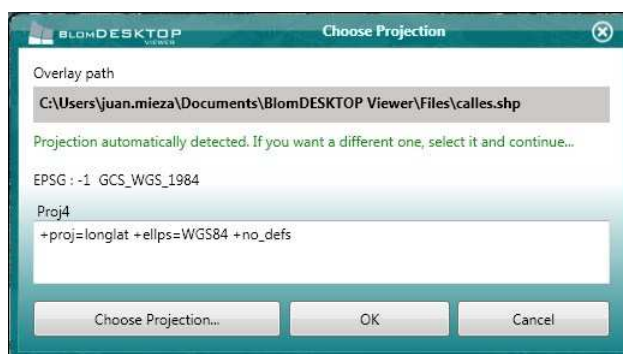

Figure 49: Selection of Projection System

If the projection found is correct, simply press the **Ok** button to continue. Otherwise you can press the **Choose Projection…** button to open the Projection Selection Dialog box.
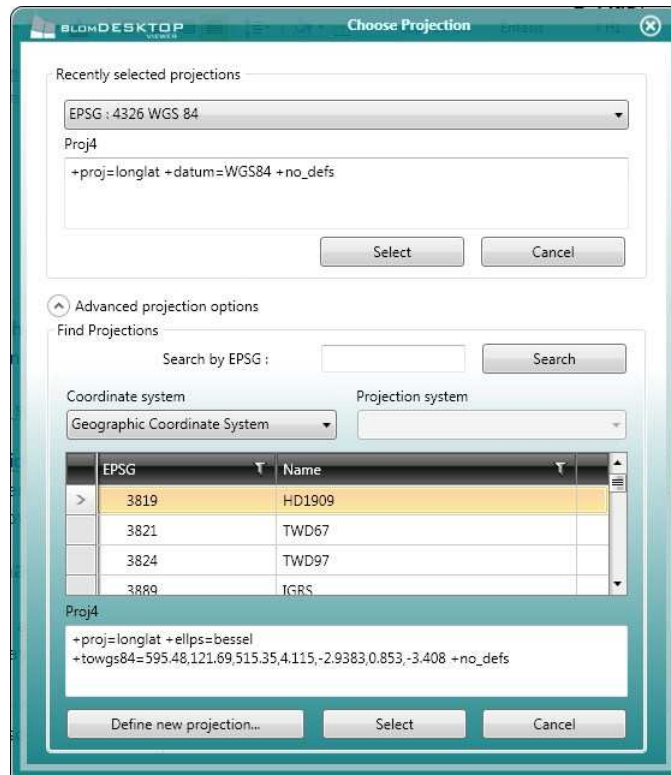
Figure 50: Projection Selection

Here you can select a projection from the list of recently used projection, or click on the **Advanced Projection options** button to show additional options that will allow you to search the list of available projection (including filters) and even define your own projection using Proj4 parameters.

Once selected, the data will be displayed in the selected viewer window.

Additionally vector and raster files can be added by **drag and dropping** them into a BlomDESKTOP Viewer icon (this action will open BlomDESKTOP Viewer™ with a new workspace and a default window), or directly over an existing window into the application.
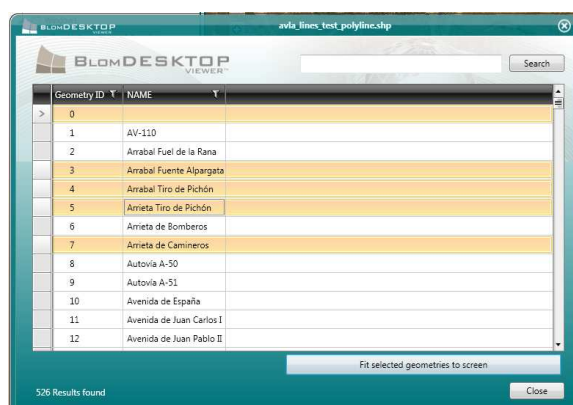
6.5.4 Managing overlays

Once an overlay is loaded into a window, several options become available by right-clicking on the overlay name on the Dataview explorer.

Some options will not be available depending on the type of overlay data and the existence of associated metadata.

These options are:

- **Visible:** this option is selected by default. Deselecting it will hide the overlay from the current view. The overlay will not be deleted but will remain assigned to the window in the Dataview.

- **Opacity:** selecting this option will show a slide bar that you can use to define the transparency level of each overlay layer.

- **Zoom level range:** see section 6.7

- **Fit to Screen:** selecting this option will modify the zoom level and the position of the screen, so that all of selected overlay data can be seen on screen at once.

- **Show metadata...:** this will open a new table-view displaying the associated metadata for the selected overlay. You can filter the table using the **Search** field on the top-right part of the view.

Figure 51: Metadata view from a vector file

You can **double-click** on any row of in the metadata table to see the location of the associated element in the window view.

From version 2.0 onwards of BlomDESKTOP Viewer™ it is possible to select several elements and display them on the screen. Use the **Ctrl** key to select/unselect row on the metadata table, and then click the **Fit selected geometries to screen** button.

Note: Double-clicking on any vector element on a vector overlay will open a table view to show the associated metadata to the selected element.
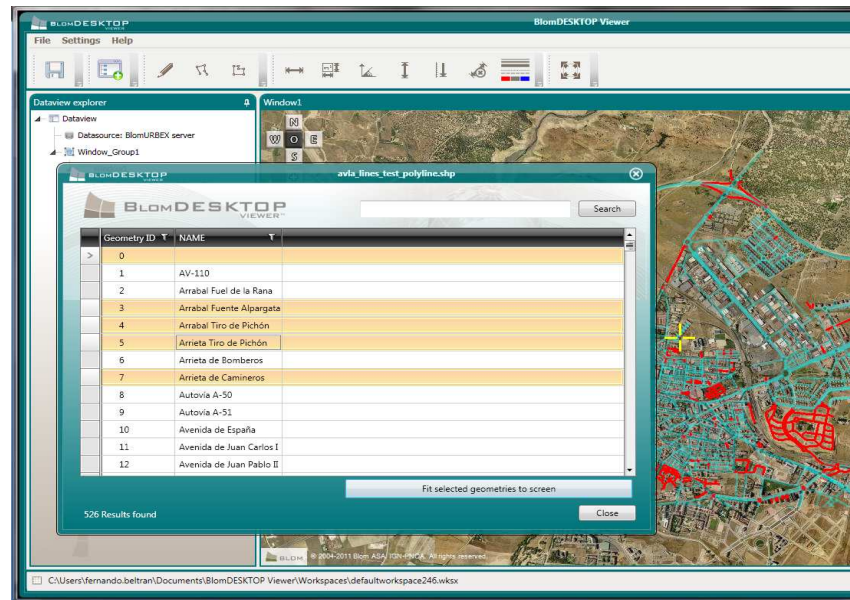

Figure 52: Several geometries are selected and shown on screen

- **Search metadata:** this option will allow the user to search the overlay metadata fields. Just type in a text or number and press **Enter**.
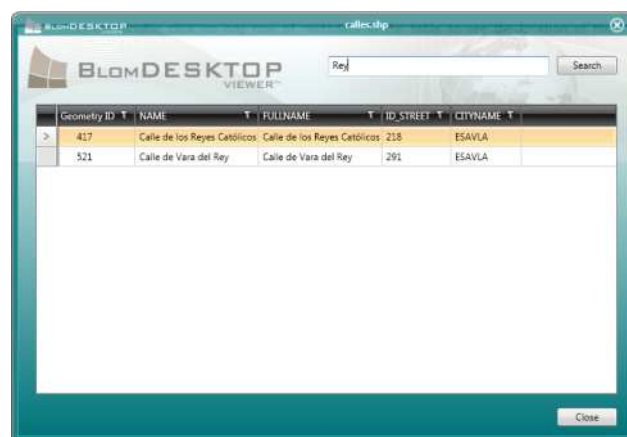
Figure 53: Filtering Metadata

Results will be shown in a table view. Clicking on any row will show the associated data on screen.

- **Symbology Editor…:** this option will open a dialog box that will allow the user to change the basic appearance for the selected overlay data. Using this dialog box you change thickness, colour, style and other attributes for points, lines and polygons. See section 9.4 for additional details.

- **Labelling and labelling editor:** see section 6.6.

- **Move/Copy overlay to…:** these two options will allow you to move or copy the selected overlay layer to a different window.

- **Bring overlay to front:** this option will bring the overlay to the front position in order of the display so it will be visualized on top of all other overlays in the window.

- **Bring overlay forward:** this option will move the overlay one position up in the order of visualization in the window.

- **Send overlay backwards:** this option will push the overlay back one position in the order of the display window.

- **Send overlay to back:** this option will push the overlay to the back position in order of the display so it will be at the bottom of the list of overlays in the window.

- **Change Projection…:** you can change the selected projection system for the overlay by choosing this option.

- **Remove:** select this option to remove the overlay from the window.

6.6 Labelling Overlays

For vector overlays with metadata, such as shape files, GML files or KML files, it is possible to select a field in the available metadata to label the elements on screen.

Providing the vector overlay has metadata, an option called **Labelling …** will appear by right-clicking on the overlay name. Select it and a list of fields will appear. Choose one to label the vectors using the contents of that field.
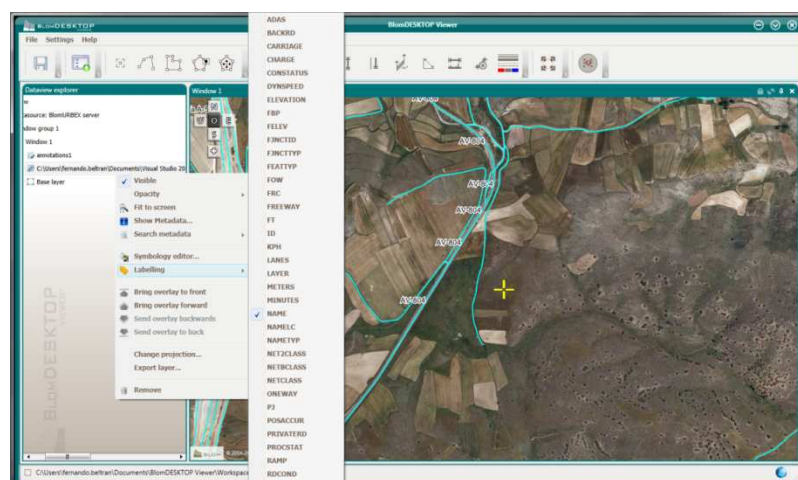

Figure 54: Labelling Vectors

6.6.1 Changing the label style

The font used for labelling data can be customized using the labelling editor. You can open it selecting the Labelling editor… option on the overlay menu.
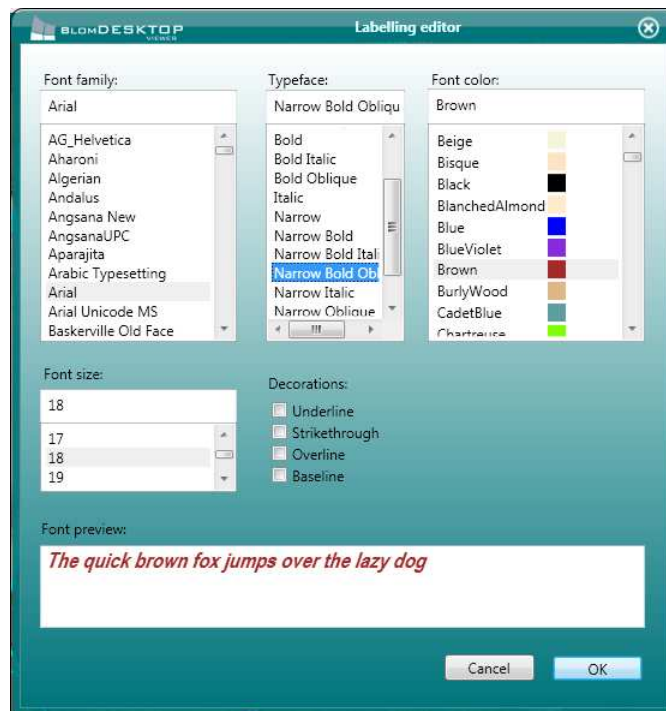

Figure 55: Labelling Editor

Here you can select the font family, typeface, color, size and special features for the labels. Note that this selection will apply to all labels for the selected overlay. You can select different options for different overlays.

6.7 Defining the zoom level for overlays

When managing overlays, it is possible that the display of the data (especially with very large sized vector files) make take some time to display.

To reduce the loading time, it is possible to select the valid zoom level for overlay datasets and define a range of zoom levels where BlomDESKTOP Viewer™ will display the data.

To define a valid range of zoom levels for a given overlay, right-click on the name in the DataView Explorer and select the **Zoom Level Range option**.
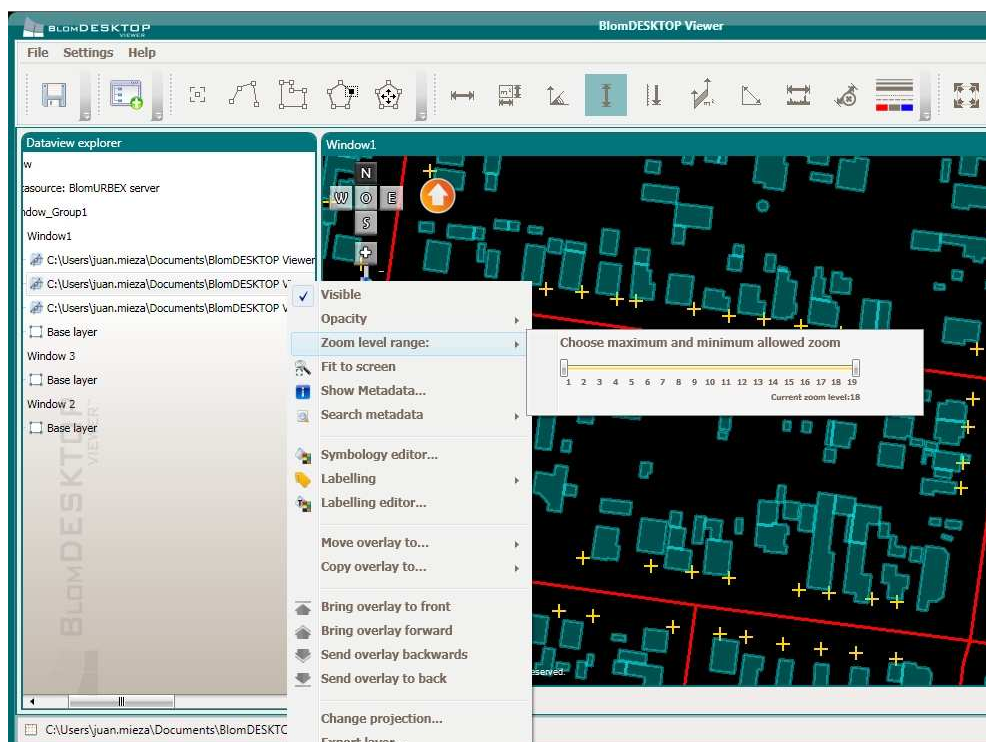
Figure 56: Selection of Range of Zoom Levels

On the slide bar you can select the minimum and maximum zoom levels required to display the selected overlay.

Note: This option does not apply to the BlomSTREET™ overlays, so the option will not appear. Baselayer zoom level cannot be limited either.

6.7.1 A note on zoom levels

BlomDESKTOP Viewer™ manages different zoom levels as images with different resolution, in fixed intervals, to speed up rendering time. The table below shows some of the bigger resolution zoom levels for Spherical Mercator data.

Note that:

- The resolution of this projection only matches real world resolution in the equator.

- It varies with the latitude.

Zoom Level	Mercator Resolution	Real World Resol. 35N	Real World Resol. 45N	Real World Resol. 60N	Real World Resol. 70N
20	0,1493 m/pix	0,1223m/pix	0,1056m/pix	0,0747m/pix	0,0511m/pix
19	0,2986	0,2446	0,2111	0,1493	0,1021
18	0,5972	0,4892	0,4223	0,2986	0,2043
17	1,1943	0,9783	0,8445	0,5972	0,4085
16	2,3887	1,9567	1,6891	1,1944	0,8170
15	4,7773	3,9133	3,3781	2,3887	1,6339
14	9,5546	7,8267	6,7561	4,7773	3,2679

Figure 57: Resolution per zoom level

6.8 Editing the base layer

In BlomDESKTOP Viewer™ it is possible to select layers from the available Data Sources. Version 2.0 supports overlays from BlomURBEX™ and future versions will integrate the possibility of adding overlays from Blom Libraries.

BlomURBEX[TM] imagery is composed of Baselayers and Overlays. Overlays have transparent areas, whereas Baselayers do not.

Different layers can be selected by the user if they are available. In order to display different layers in a window, right-click on the base layer name in a window on the Dataview Explorer and select the **Edit base layer…** option. The following dialog box will appear.
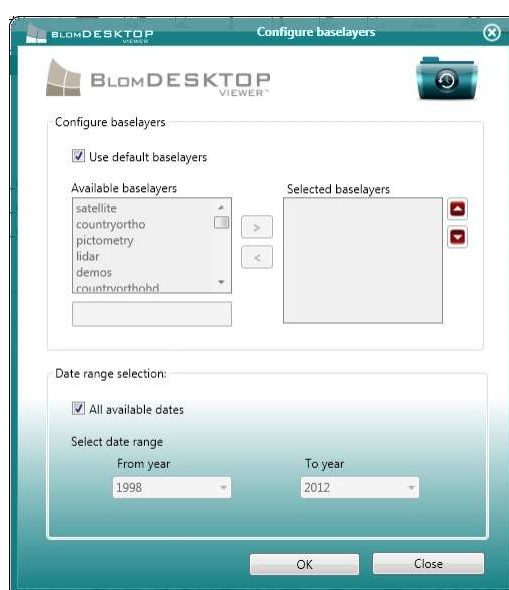

Figure 58: Add overlay from data source

The first area in the dialog box allows you to select a Layer from the available list, or by typing its name into the text box below. By default several layers are defined in your configuration. If you want the selected layers to show, you will need to un-check the **Use Default Baselayers** option. Then you can select layers in any desired order by clicking on their name and moving them to the *Selected baselayers* list using the arrow buttons.

It is also possible to select the **Date range** for the selected overlay. You can choose to select all available dates for the overlay, or select a range of years using the list boxes below.

Once you are happy with the settings, click **OK** and the new layer or overlay will appear on the selected window.
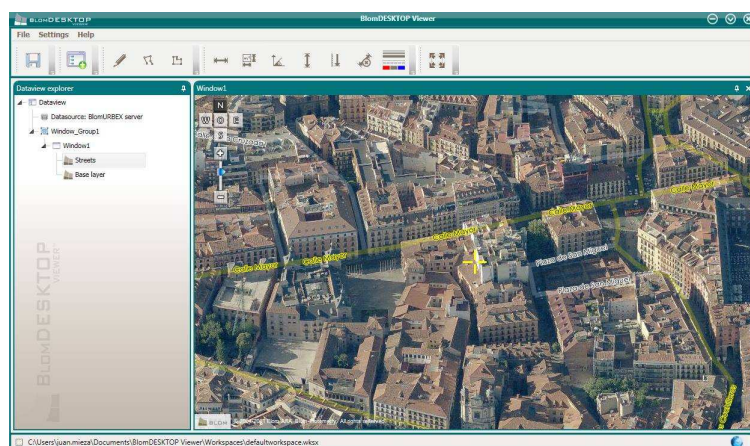

Figure 59: Overlay named "Streets" on top of imagery

6.9 LiDAR and BlomSTREET™ overlays

BlomDESKTOP Viewer™ version 3.0 onwards includes the possibility of working with two additional datasets:

- LiDAR data: either taken from the BlomURBEX™ server or directly from local LAS files.
- BlomSTREET™ data: spherical, georreferenced images, taken from the BlomURBEX™ server.

Due to the specific behavior of these overlays, they are described in separate chapters; BlomSTREET™ datasets are covered in chapter **10**. LiDAR datasets are covered in chapter **13**.

6.10 Associating file types to BlomDESKTOP Viewer™

All supported file formats in BlomDESKTOP Viewer™ can be associated to the application as the default viewer. This means that you can simply double-click on a given file to open it inside BlomDESKTOP Viewer™. For details on this operation, refer to your Windows™ help documentation.

7   Measurement Tools

BlomDESKTOP Viewer™ offers a powerful set of measurement tools that can be directly applied on Ortho and Oblique images, providing a great added value for users. All of these tools are described in this section.

The available measurement tools in BlomDESKTOP Viewer™ 1.0 are:

| Tool	Description
	Length/Distance tool
	Area tool
	Bearing tool
	Elevation tool
	Height tool
	Façade Area tool
	Diagonal (ladder) tool
	Erase button
	Change style of measurements

These tools are located in the icons bar in the upper part of the user interface.

To perform any measurement, just click on the desired tool. BlomDESKTOP Viewer™ will then enter into Measurement Mode (the mouse behaviour will depend on the tool selected). To exit Measurement Mode click again on the tool, or click on the **Erase Button**. Note that while a measurement tool is selected, you can perform multiple measurements on screen. Press the **Erase Button** to remove any current measurements on screen.

Note, the unit system used in measurements can be selected from the Settings->Preferences… menu. See section 15.1 for details.

7.1   Length measurement

This tool lets you perform length measurements on ortho or oblique images. The length tool provides "as the crow flies" measurements.

Select the desired length measurement tool by clicking on the appropriate icon in the toolbar and follow this procedure for length calculation.

1. Click on a point to start measuring. A blue point will appear on screen
2. Move the mouse to create a line, and click on another point to finish that line
3. Continue the above method to draw additional lines if needed, or double-click on the map to finish the measurement and retrieve the results
4. The cumulative length at every individual line will be displayed on screen (in meters).

Figure 60: Length Measurement

7.2   Area Measurement

This tool lets you perform area measurements on ortho images by drawing polygon shapes on the BlomDESKTOP Viewer^{TM} screen.

Select the tool by clicking on its icon in the toolbar and follow this procedure for area calculation.

1. Click on a point to begin measuring. A blue point will appear on screen
2. Move the mouse to create a line, and click on another point to finish that line. Note the polygon is created on the fly so there is no need to close it manually.
3. Continue the procedure to draw additional lines if required, or double-click on the map to finish the measurement and retrieve the results.
4. The area of the polygon created will be displayed on screen (in meters squared).

Figure 61: Area Measurement

7.3   Bearing Measurement

This tool lets you measure the bearing or azimuth (angle relative to true North) of a line.

Select the tool by clicking on its icon in the toolbar and then follow the procedure below for bearing calculation.

1.   Click on a point to start measuring. A blue point will appear on screen
2.   Move the mouse to create a line.
3.   Click again on the map to finish the measurement
4.   The bearing of the created line (in sexagesimal degrees), will be displayed on screen.

Figure 62: Bearing Calculation

7.4   Elevation Measurement

All images available in BlomURBEX[TM] or into Blom Libraries have been processed using a DTM. The elevation information of those DTMs is included in the server and can be obtained using the Elevation Tool.

Select the tool by clicking on its icon in the toolbar and follow this procedure for elevation calculation.

1. Click on a point to start measuring. A blue point will appear on screen
2. The Elevation of that point at sea level will be displayed on screen (in meters).

Figure 63: Elevation Measurement

7.5   Height Measurement

This tool lets you measure the vertical height from a point on the ground in oblique imagery only. This lets you measure the height of any given façade.

Select the tool by clicking on its icon in the toolbar and follow this procedure for height calculation.

1. Click on a point on the ground to start measuring. A blue point will appear on screen.
2. Move the mouse to create a vertical line. Note, that BlomDESKTOP Viewer[TM] will only let you move up the Z axis, so perform measurements from the bottom to top.

3. Click again on the map to finish the measurement
4. The height of the line will be displayed on screen (in meters).

Figure 64: Height Measurement

7.6   Façade Area Measurement

This tool allows to measure areas on façades in oblique images by drawing irregular polygons on the BlomWEB Viewer^{TM} screen. To perform area measurements on ortho images use the Area Tool (section 7.2).

To perform a measurement:

a. Click on a point on the ground as the first point for the baseline of the area to measure.
b. Click on a second point on the ground as the second point for the baseline of the area to measure. (**Figure 65**)
c. Continue the procedure clicking on additional points over the baseline to complete the polygon, or double-click on the map to finish the measurement. (**Figure 66**)
d. The area of the polygon will be displayed on screen. (**Figure 67**)

Figure 65: Measuring façade area: Define baseline first…

Figure 66: …Then continue defining the area

Figure 67: … Finally, double click to get the measurement

7.7   Diagonal (Ladder) Measurement

This tool calculates the length of the hypotenuse of the triangle formed by a point on the ground and two points in a façade. This can be used to have an estimation of the length of a Fire Truck ladder/hose needed to reach a certain window or height in a building.

Diagonal Measurement tool is only active in Oblique Image view.

To perform a measurement:

1.   Click on a point located on the ground. This will represent the location of the Fire Truck.
2.   Move the mouse and click on a point on the ground directly below the desired window (or height). This will be the corner of the triangle rectangle.
3.   Move the mouse up the façade and click on the desired height.
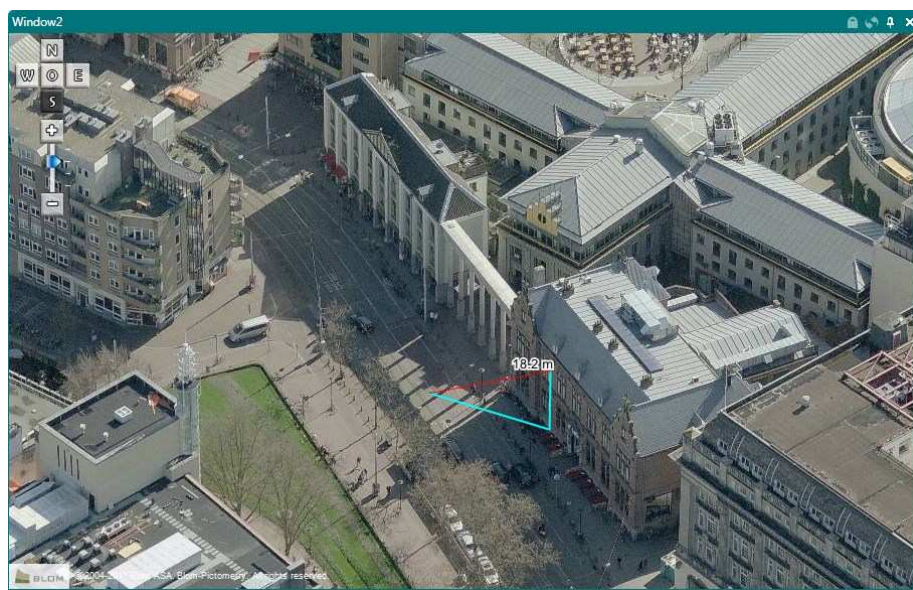4.   The hypotenuse (ladder) will then be drawn in red and its length will be displayed.

*Figure 68: Diagonal Measurement*

7.8   Erase Button

This button will remove all measurement data currently displayed on screen allowing you to start a new batch of measurements. This button will also exit from any Measurement Mode you may be in.

7.9   Changing the style of the measurements

BlomDESKTOP Viewer™ includes the possibility of changing the style of measurements since version 1.2.0 of the tool. This means that it is possible for users to select the colour, line thickness and line pattern of the graphic elements used for measuring data.

To define the style of measurements, just click on the button. This will open the symbology editor dialog box (see section 9.4).

Styles are saved in the workspace so if you change the default styles for measurements, they will be retained for the next time you open that workspace.

8   Geocoding

8.1   Searching for an address with OpenStreetMap

Searching for a specific location is one of the most common needs for a GIS tool. To this end, a Geocoding tool is integrated with the BlomDESKTOP Viewer^TM.

This tool uses an external provider (OpenStreetMap) so **Internet access is required** in order to use address searching.

Blom disclaims any responsibility derived from outages, poor performance or any other issue related to any service provided by third party organizations.

OpenStreetMap is licensed under the terms of the Creative Commons Attribution Sharealike 2.0 (http://creativecommons.org/licenses/by-sa/2.0/) and is a project to provide a free source of data and services at the worldwide level.

OSM-based geocoding follows a free text structure. In some countries, the postal addresses may not include numbers and have only street directions.

To search for an address in BlomDESKTOP Viewer^TM:

- Right-click on any part of the map screen to show a pop-up menu. Then select the **Go to…** option.
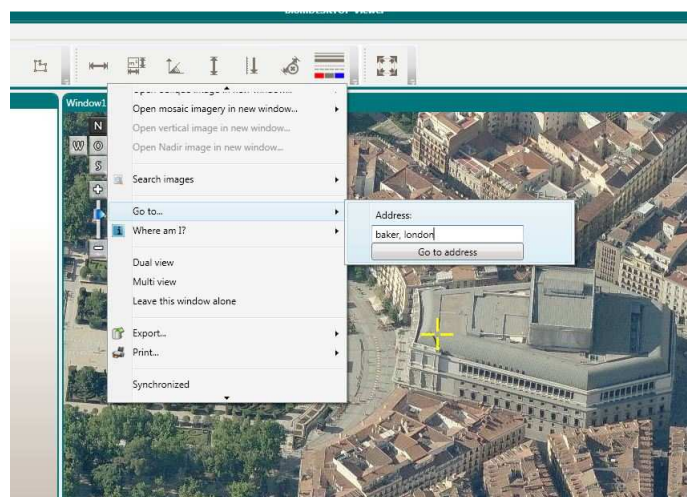

Figure 69: Geocoding tool

- Type in the required address in free text into the text box and then press **ENTER** or click on the **Go To Address** button. The search will be performed and the screen will centre on the selected location.

- If there are multiple results for the selected search string, a dialog box will appear to select the correct one or to further refine the search.
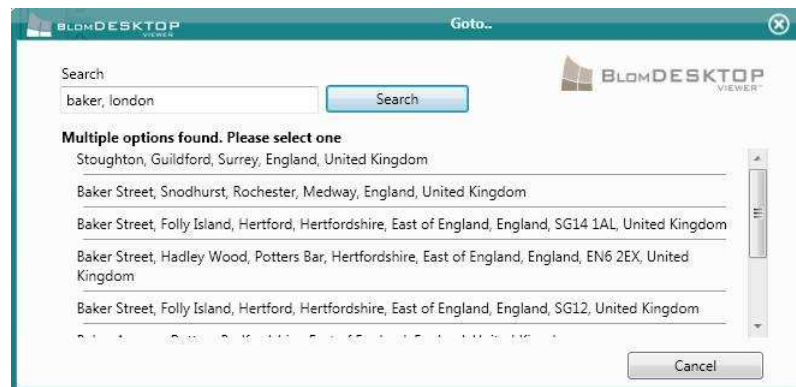

Figure 70: Geocoding results

8.1.1 *Where am I?* Option

BlomDESKTOP Viewer™ includes a quick option for reverse geocoding addresses. Simply click on any point on the window and then right-click again to select the **Where Am I?** option. The name of the selected street will be displayed and also the coordinates of the point you clicked. You can also select the **Copy coordinates to clipboard** option for using those coordinates afterwards.
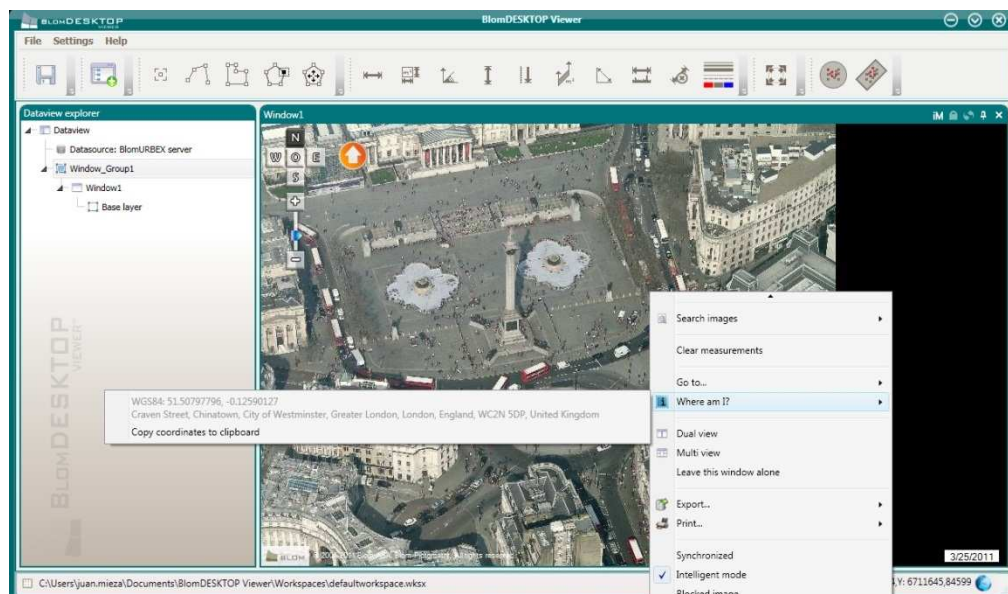

Figure 71: Where Am I?

8.2 Search by coordinates

BlomDESKTOP Viewer^{TM} also allows for a coordinate search using the same interface as described in the previous section for address search. This means that you can input coordinates instead of an address in the Search dialog box.

You can type the desired coordinates:

a) As (Latitude, Longitude) in decimal format. Example: 40.42, -3.69
b) As (X,Y), in Spherical Mercator or UTM projection. Example: 225485.2, 6250785.5

To search by Latitude, Longitude, type:

- `@ll <lat> <lon>`

Example: `@ll 40.42 -3.69`

To search in Spherical Mercator projection, type:

- `@sphm <y> <x>`

Example: `@sphm 6250785.5 225485.2`

To search in UTM projection, type:

- `@utm<zone><hemisphere> <y> <x>`

Example: `@utm18n 4312984.502 323894.392`

8.3   Searching for an address from SHP file information

Version 3.2 of BlomDESKTOP Viewer™ includes the facility to search addresses using the information in either a single, or multiple SHP vector files.

It is possible to create many profiles and change between them quickly and easily.

8.3.1 Create shapefile based geocoding

In the menu Settings there is an option to create shapefile based geocoding. (Settings->Create shapefile based geocoding).

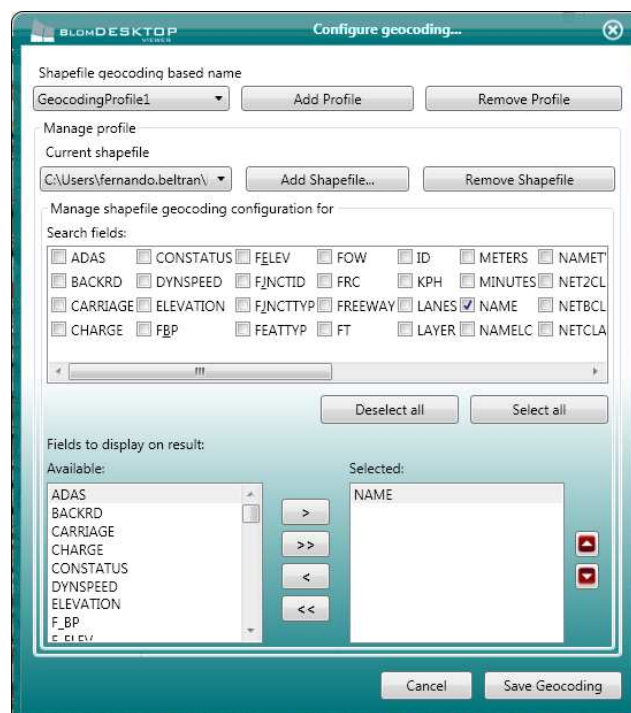After selecting the item on the menu, the following window will appear.

Figure 72: *Configure Geocoding Options*

In this window there are several options to create and manage profiles with shapefiles for using them to geocode.

To create a new profile click the button **<Add profile>**, a new name appears into the dropdown list with the name **GeocodingProfileXX** - XX relates to the numerical naming sequence.

To delete a geocoding profile, click the **Remove Profile** button, and the profile selected must be erased.

There are two more buttons that manage the shapefiles to obtain the fields involved in the geocoding process.

Clicking on the **Add Shapefile** button opens the window to locate the shapefile to include in the geocoding process.

To remove a shapefile, just click on the **Remove Shapefile** button.

A list of available fields will appear on the **Search fields** box. You need to specify which fields will be used for address searching. All fields will appear selected by default. Unselect those you do not require for geocoding.

Then use the boxes below to select the list of fields you want to have displayed in the search results. You can move fields from one box to the other using the arrow button in the middle, and move up and down the selected fields using the red arrow buttons on the right. If there are multiple results for the selected search string, a dialog box will appear to select the correct one or to further refine the search.

Once complete, click **Ok** to accept the configuration. From now on, the **GoTo…** option described on section 8.1 will no longer use Open Street Maps as geocoding source, and will use the selected SHP file and fields for results.

To search an address now, Right-click on any part of the map screen, then select the **Go to…** option. Type in the required address in free text into the text box and then press ENTER or click on the **Go To Address** button. The search will be performed and the screen will centre on the selected location.

8.3.2 Delete shapefile based geocoding

There two ways to remove a geocoding profile:

- From the menu select **Settings-Delete shapefile** based geocoding, and in the window select remove profile button as explained in the section "**Create shapefile based geocoding**"

Figure 73 Remove profile geocoding

- From the **Settings-Delete Shapefile based geocoding** menu, select the profile you wish to delete.

8.3.3 Set active geocoding

BlomDESKTOP Viewer™ allows multiples profiles, and you can quickly choose between profiles in an expandable list. To select the profile you wish to use, simply click on the profile name under the menu **Settings->Set active geocoding**.
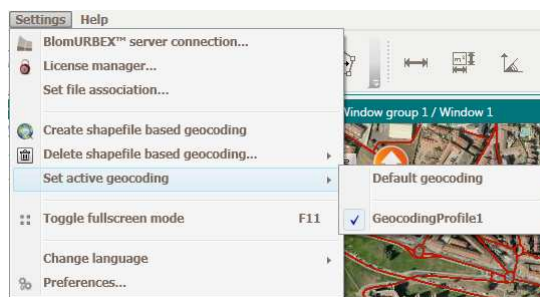
Figure 74 Switch geocoding profile

If you wish to return to Open Street Maps as the default geocoding source, the Default Geocoding must be selected in the previous menu.

9   Annotation tools

BlomDESKTOP Viewer™ includes a set of tools for drawing simple vector elements on top of the Data Sources displayed. These elements are:
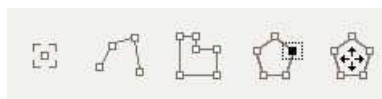
- Points
- Polylines
- Polygons

Figure 75: Annotation Tools

Once an annotation icon is activated the map window will enter into edit mode. An annotation layer is needed first in order to be able to draw on the map.

The annotation toolbar also allows for editing vertexes and features of elements.

9.1   Annotation layers

To add an annotation layer right-click on the window name (located in the Dataview explorer) where you want to create the annotation layer and select the **Add Annotations Layer…** option.
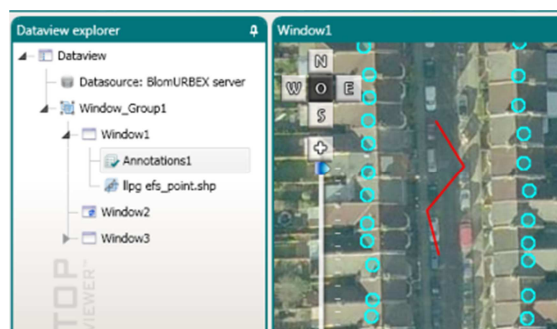

Figure 76: Annotation Layer created

There can be as many annotation layers as required per window, but only one **active** annotation layer per window.

Note: If an annotation layer is not present the cursor will change to a "Forbidden" sign, as there is no annotation layer to add to.
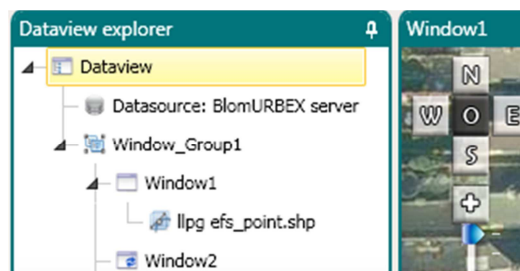

Figure 77: No annotation layer available

Annotation Layers can be in four different states:

📋	Annotation layer non-active, visible
✅	Annotation layer active, visible
📋	Annotation layer non-active, non-visible
📋	Annotation layer active, non-visible

Annotation layer status can be changed by right-clicking on it.

An annotation layer is considered an overlay for BlomDESKTOP Viewer™, so the menu options available when right-clicking on it are the same that are available for other overlays. See section 6.5.4 for additional details.

9.2 Drawing elements

Once the annotation layer is present it is possible to add points, polylines and polygons.

9.2.1 Adding points

- Select the Draw Point tool
- Click on the map to draw a point on the selected position
- Right-click on any drawn point to label or remove it (see section 9.2.4)
- Select the Symbology Editor menu to change the appearance of points (see section 6.5.4)

9.2.2 Drawing lines

- Select the Draw Multiline tool

- Click on the map to draw a point on the selected position
- Drag the mouse to start drawing a line
- Click on the map to draw a vertex, and continue drawing the line
- Double-click on the map to end drawing the line.
- Right-click on any drawn line to label or remove it (see section 9.2.4)
- Select the Symbology Editor menu to change the appearance of points (see section 6.5.4)

9.2.3 Drawing polygons

- Select the Draw Polygon tool
- Click on the map to draw a point on the selected position
- Drag the mouse to start drawing a line
- Click on the map to draw a vertex, and continue drawing lines. Note, the polygon will auto-complete
- Double-click on the map to end drawing the polygon.
- Right-click on any drawn polygon to label or remove it (see section 9.2.4)
- Select the Symbology Editor menu to change the appearance of polygon (see section 6.5.4)

9.2.4 Labelling annotations

If the map is in edit mode and an annotation tool is selected, you can Right-click on any element drawn on an annotation layer to show a pop-up menu with two options:

- Set text: this will open a dialog box to enter the text for the label you want to add to the selected element.
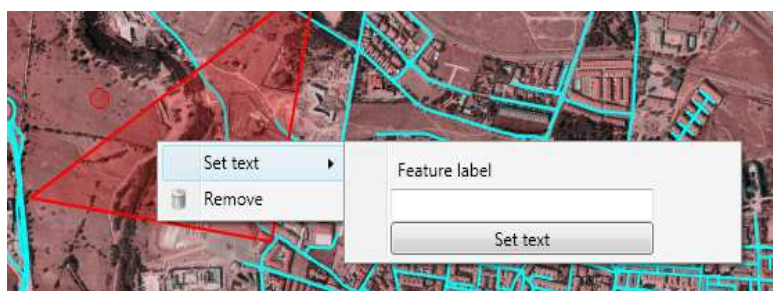

Figure 78: Labelling Dialog Box

Enter the desired text and press ENTER or click the Set Text button.

Figure 79: New Label

Using the same method you can modify or delete the labels at any time. There can be only one label per element.

9.3 Symbology

Symbology of annotations can be changed using the Symbology Editor Dialog box (see next section). All elements of an annotation layer will be affected by your selection on the Symbology Editor dialog. So if you wish to have different elements in different colours, create several annotation layers and change the symbology as desired per layer.
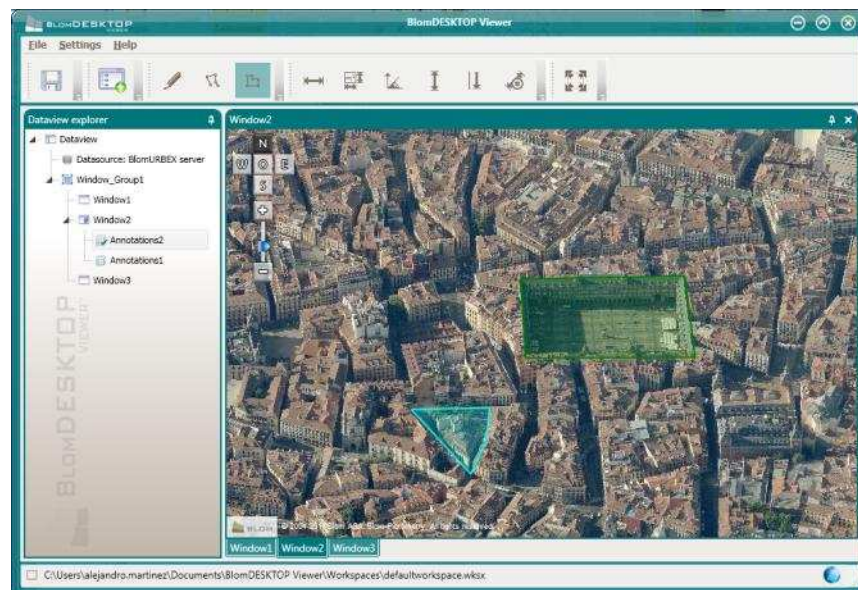

Figure 80: Annotation layers with different symbology

9.4   Symbology Editor

The symbology editor is a dialog box that will allow users to change the basic appearance for the selected overlay data.

The dialog box is divided into three tabs allowing you to select the symbology for different annotation objects that can be drawn in BlomDESKTOP Viewer™.
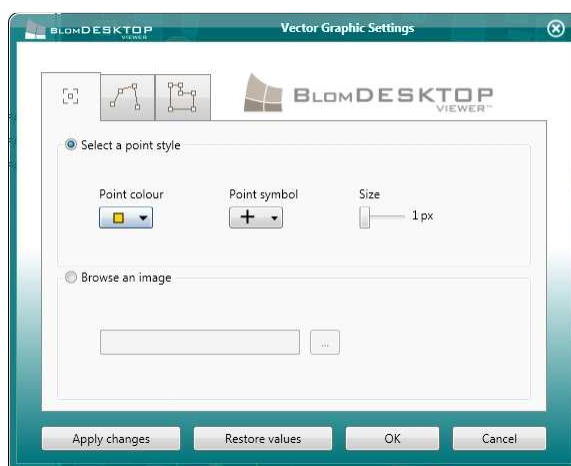
9.4.1   Points Symbology

Figure 81: Symbology Editor: Points

Points are defined by a symbol, a colour and a size. You can select them from a list of predefined symbols and colours by clicking on the **Point colour** and **Point symbol** drop boxes. The Point size can be changed using the **Size** slider.

You can also use image files to represent points instead of using the standard symbology. Simply select the **Browse an image** option and search the desired image file on your computer or network. The selected graphic will then be displayed on the location of the point. Accepted image formats are JPG, PNG and GIF.

You can use the **Restore Values** button to return to the default symbology values in BlomDESKTOP Viewer™.
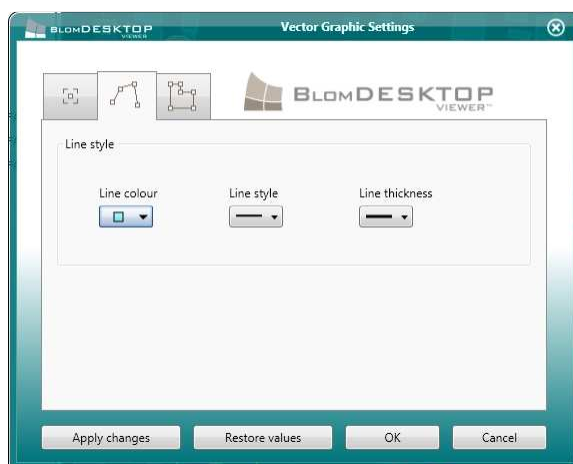
9.4.2 Multilines symbology

Figure 82: Symbology Editor: Multilines

Multilines are defined by a line style, a colour and a line thickness. You can select them from a list of predefined styles and colours clicking on the **Line colour, Line Style** and **Line Thickness** drop boxes.

You can use the **Restore Values** button to return to the default symbology values in BlomDESKTOP Viewer™.
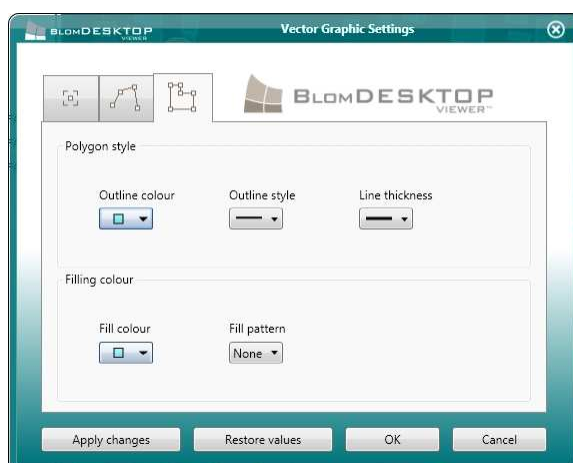
9.4.3 Polygon symbology

Figure 83: Symbology Editor: Polygons

Polygon symbology is more complex and more elements can be defined from the list of drop boxes:

- Outline colour: This is the colour of the outline that defines the polygon.

- Outline style: This is the style of the outline that defines the polygon (continuous, dotted, etc.).
- Line thickness: This is the thickness of the outline that defines the polygon.
- Fill colour: This is the colour that will be used to fill the polygon.
- Fill pattern: You can use a pattern to fill the polygon by selecting it from a list of predefined ones.

You can use the **Restore Values** button to return to the default symbology values in BlomDESKTOP Viewer™.

9.5   Editing symbology

The annotations toolbar provides two options for editing elements created in BlomDESKTOP Viewer.

9.5.1   Editing vertices

To edit a vertex in any given annotation object:

- Select the edit vertices tool.
- Click on the desired vertex on an annotation object. Do not release the mouse button. The object symbology will change to red.
- Move the mouse, dragging the vertex to the desired position.
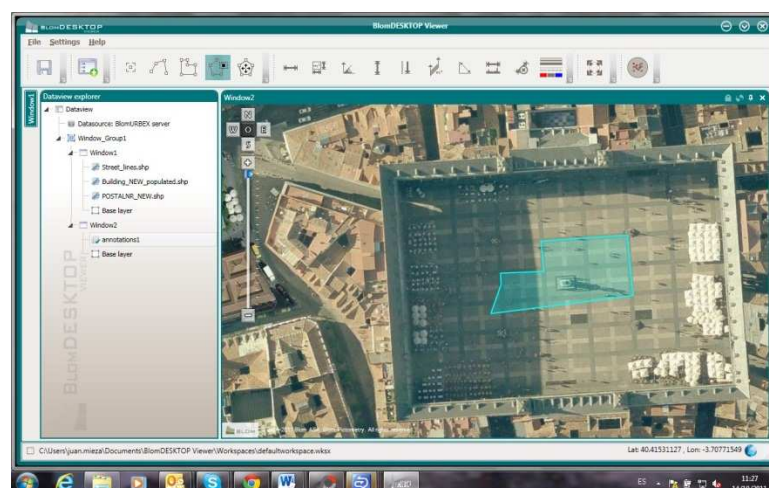- Release the mouse button.

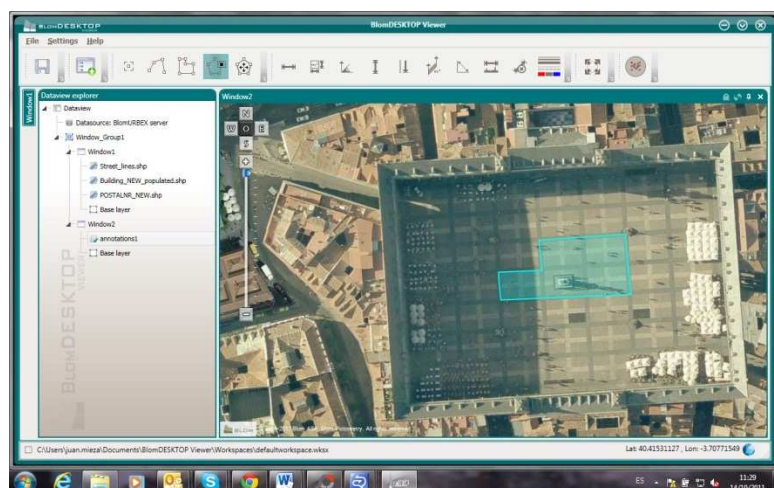*Figure 84: A polygon to edit*

Figure 85: The vertex is clicked

Figure 86: The vertex is dragged to the new position

9.5.2 Editing features

Existing objects can be moved to a new position. To do this;

- Select the edit features tool.
- Click on the desired object. Do not release the mouse button. The object symbology will change to red.
- Move the mouse, dragging the object to the desired position.
- Release the mouse button.

10   BlomSTREET™ data

CycloMedia is a Blom partner that specializes in producing large scale and systematic capture of public space using mobile mapping technology to generate 360° panoramic images, called "Cycloramas". CycloMedia has many years of experience in the in-house development of recording systems, the accompanying processing software, data architectures and the best way to record Cycloramas on a great-scale on a daily basis. Today CycloMedia is a main supplier for the Dutch government; the entire public road network of the Netherlands is being recorded on a yearly basis. Many Dutch municipalities use the imagery of CycloMedia Technology for all kinds of applications.

A Cyclorama is a 360° panoramic image, as shown below:

Every Cyclorama has the following properties:

- A 360° panoramic image with a resolution of 4800 x 2400 pixels

- Recorded at a fixed interval of 5 meters, most objects are therefore visible from three different angles

- Spherical – As well as the ability to look around (360°), you can also look up and down

- Good continuous image – Best of class stitching

- Upright image – when recordings are taken from a talus, this is corrected so that an image is always horizontal (level)

- The file contains a recording date and time

- Geometrically correct – each pixel in the Cyclorama is geometrically positioned

- Outstanding geo reference – precise position and viewing direction

These properties allow the possibility to use Cycloramas for many applications.

Blom has been capturing and producing Cyclorama data for its customers since Q2 2011. This new product of Blom is branded BlomSTREET™. BlomDESKTOP Viewer™ v3.0 includes the ability to open **BlomSTREET™** datasets as overlays in specific windows.

10.1 Accessing BlomSTREET™ data

BlomSTREET™ is currently provided online via the BlomURBEX™ connection. If your access credentials to BlomURBEX™ grant you access to BlomSTREET™ data, you can create a BlomSTREET™

visualisation window by right-clicking on an existing window and selecting the **Add BlomSTREET overlay…** option.

As seen in the screenshot below, this will open a BlomSTREET™ overlay over the current base layer selected, and a new separate BlomSTREET™ window which is linked to the first one, where the 360° panoramic image(s) will be displayed.
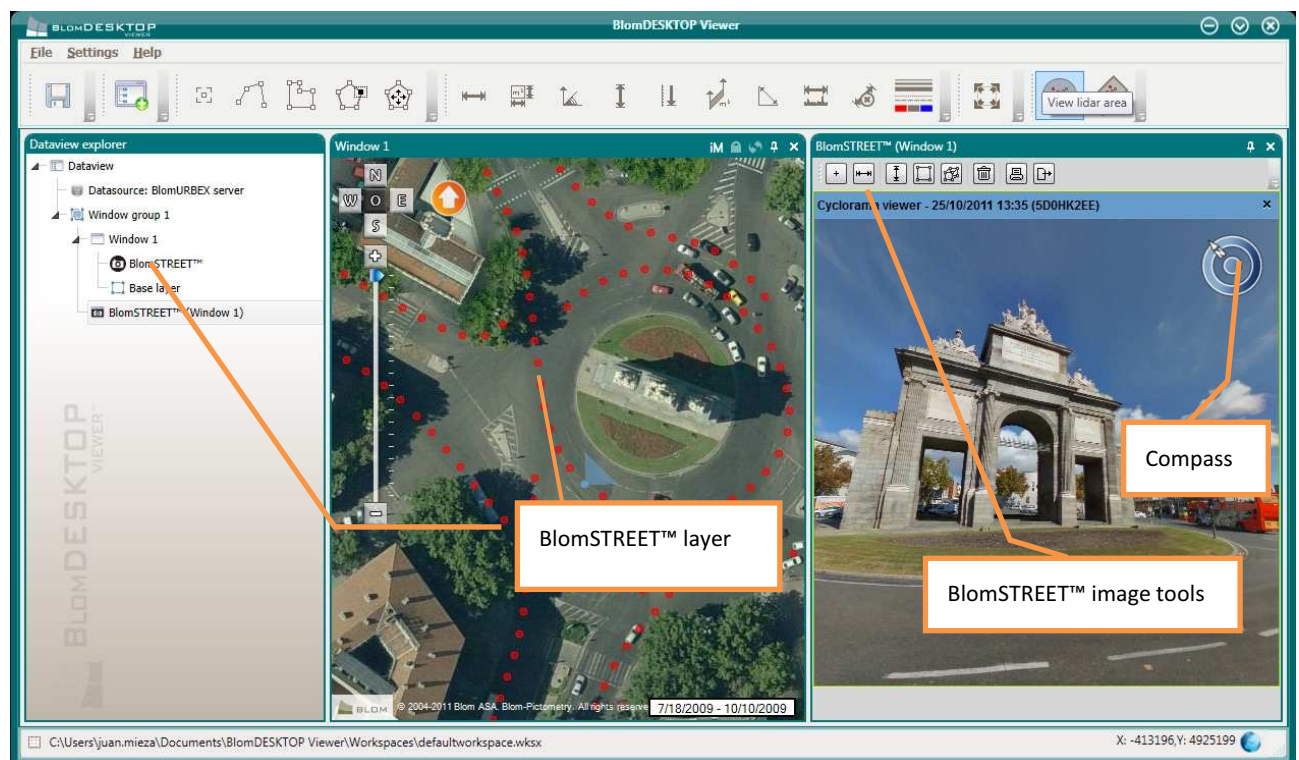

Figure 87: The BlomSTREET™ data windows

10.2 BlomSTREET™ Navigation

Navigating the 360° imagery is simple and intuitive.

The BlomSTREET™ window is composed of two linked windows; one showing an image of your current position and the other displaying a BlomSTREET™ viewer. The right window will appear empty until you select an image location by clicking on any dot on the ortho view. Every dot represents the location of a BlomSTREET™ image.
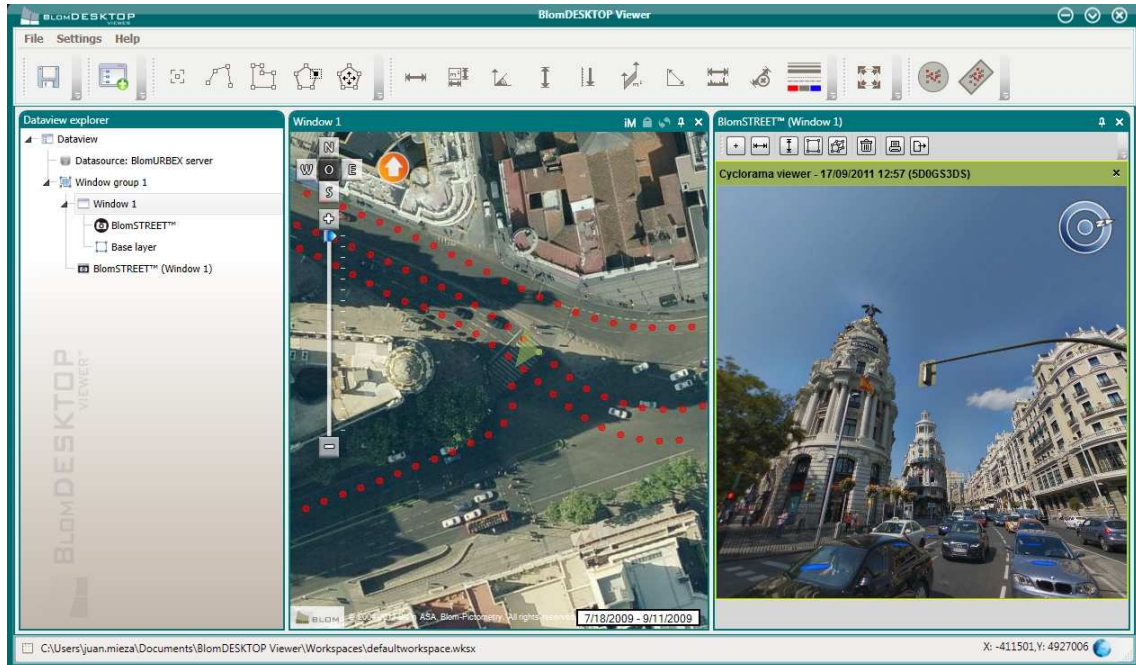
Figure 88: BlomSTREET™ scenario

10.2.1 The map window

You can navigate the ortho imagery using all of BlomDESKTOP Viewer™ navigation options described on section 5, including the magnifying glass on the BlomSTREET™ window.
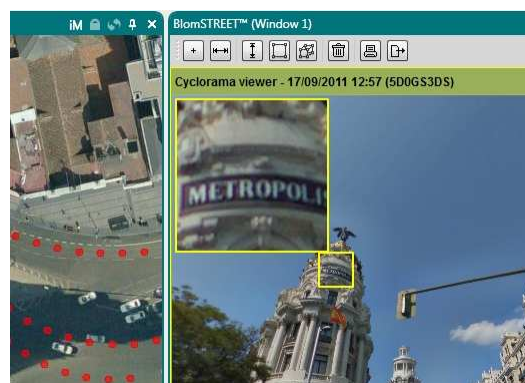

Figure 89: Magnifying Glass on BlomSTREET™ image

The coloured dots on the image represent the location of the different BlomSTREET™ spherical images. Different colour dots indicate different dates of capture: note if you hover the mouse cursor over the dots, the date of the associated BlomSTREET™ image will be shown.

Filtering information by date of capture is possible. To this, simply right-click on the BlomSTREET™ layer on the dataview explorer and select the **Date Filter** option. Then use the year slide bar to select the desired range of years for your BlomSTREET™ dataset.
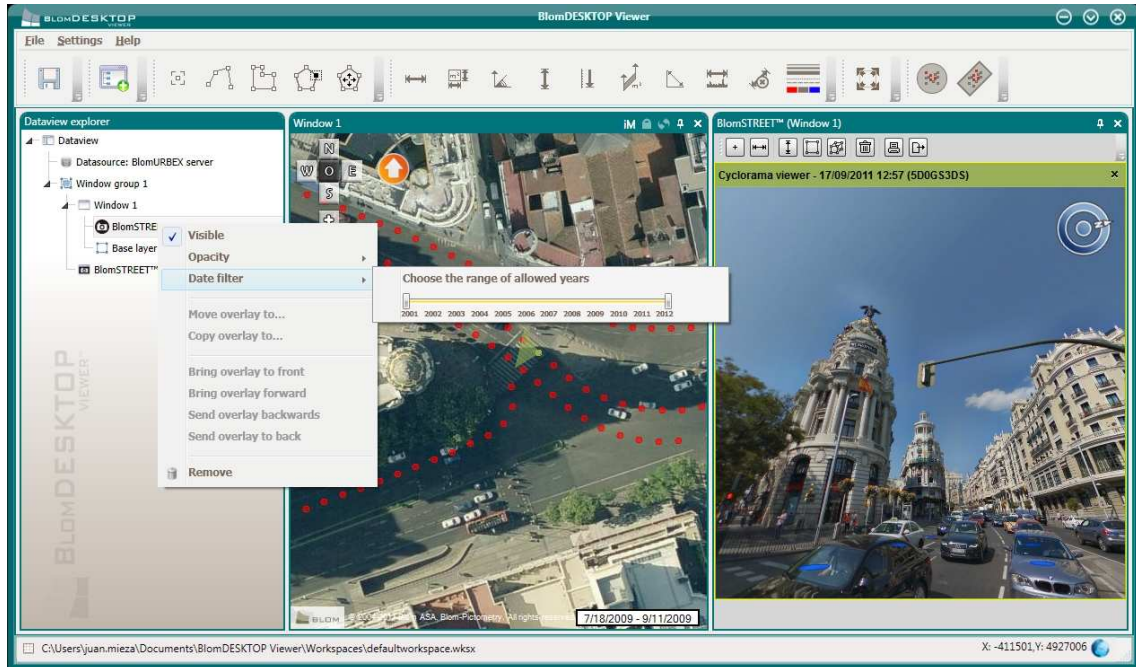
Figure 90: Filtering BlomSTREET™ data by date

The triangle shown on top of the currently selected dot shows the user field of vision according to the selected BlomSTREET™ spherical image on the right side window. As you move and rotate the image in the BlomSTREET™ image, the triangle will also rotate to represent the direction the viewer is looking at. The compass will move accordingly to show the location of the north related to your current point of view.

Click on any dot to access the associated BlomSTREET™ spherical image on the right-side window.
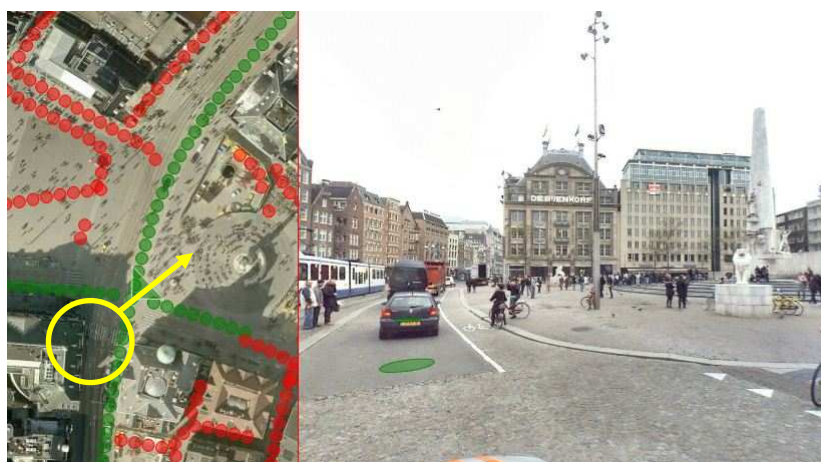
Figure 91: The triangle rotates according to the BlomSTREET™ view

Clicking on additional dots will open new BlomSTREET™ images in the associated window. Only one BlomSTREET™ viewer can be opened per overlay, but there is no limit to the number of BlomSTREET™ overlays that you can open in BlomDESKTOP Viewer™

10.2.2 The BlomSTREET™ window

To move around the BlomSTREET™ image, click on it and drag your mouse to move the view. You can use the following keys for navigating the image:

- Use the left/right arrow keys to rotate the image

- Use the up/down arrow keys to advance to the next/previous BlomSTREET™ spherical image.

- Use the + and – keys to zoom in and out

- Use the PageUp and PageDown keys to tilt up and down

Dots also appear on the BlomSTREET™ window, allowing you to select different views just by clicking on them. Note that if you position the mouse cursor over a dot, the date of capture of the associated BlomSTREET™ spherical image will be visible.

Figure 92: Date of the BlomSTREET™ image

10.3 Measuring on BlomSTREET™ data

One of the main features of BlomSTREET™ is the capability to perform measurements directly on the spherical images. Measurement tools are located on top of the BlomSTREET™ and are described here.

Tool	Description
+	Point Measurement
⊢→⊣	Line Measurement
⬍	Height Measurement
⬜	Plane (Surface) Measurement
⬡	Volume Measurement
🗑	Clear all measurements
✔	Finish measurement (active when measuring)

10.3.1 A note on measurement on BlomSTREET™ data

A BlomSTREET™ image is a flat image where every pixel represents a spatial direction with a known orientation, from a known recorded position.

In order to determine the coordinates of an object point, at least two images are required. As seen below, with one Cyclorama you can only find out the orientation of the point:
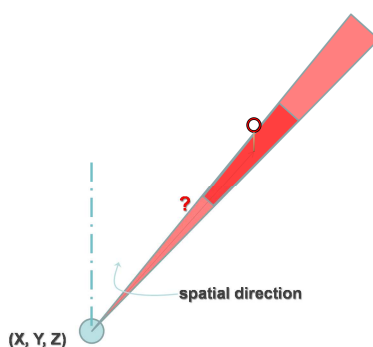

Figure 93: Measurement principles (1)

However, with a second image, the point to measure will be located in the intersection of both "direction cones", so a true measurement can be achieved.
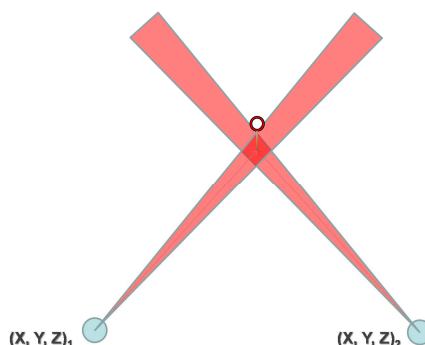
Figure 94: Measurement Principles (2)

As above, the greater the number of BlomSTREET™ images used, the better the accuracy of the measurement results.

10.3.2 Measuring Points

As described above, you will need to open at least two BlomSTREET™ viewing windows in order to perform a measurement. We will demonstrate the process with an easy example. As you can see on the screenshot below, we are going to measure the coordinates of a single point next to a building. Two BlomSTREET™ windows have been opened and rotated so that the point to measure can be seen in both windows simultaneously.

Click on the **Point Measurement** button to begin the procedure, and then click on the location of the desired point you want to measure. You will see a line appear on the other BlomSTREET™ window with the same colour of the frame as the first one. This is a visual guide to locate where the point is located on the second image.

Figure 95: Point Measurement. Step 1

Locate the point on the second BlomSTREET™ Window and click on it. Note that a similar guideline will now appear in the first Window.
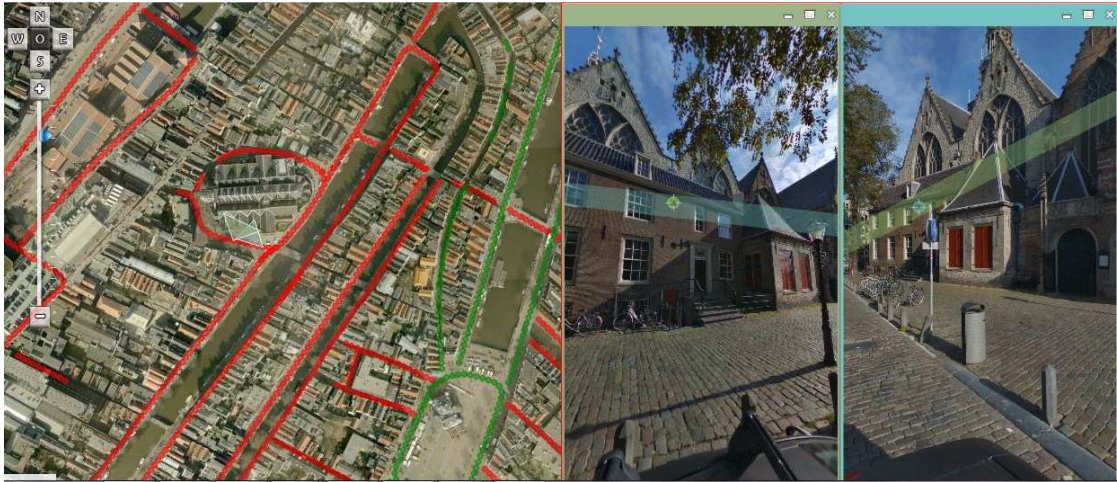
Figure 96: Point Measurement. Step 2

You can click on the selected points as many times as you need until you are happy with the location. When you are ready, click on the **Finish Measurement** button (the point measurement button has changed now to show this icon) and the results will be displayed at the bottom of the BlomSTREET™ viewing window.

Figure 97: Point Measurement results

Clicking on the measurement result(s) will copy it to the clipboard.

10.3.3 Measuring Lines

As described above in measuring points, you will need to open at least two BlomSTREET™ windows in order to perform a measurement. Next we will demonstrate the process with an easy example for measuring lines. As you can see in the screenshot below, we are going to measure the height of a window in a building. Two BlomSTREET™ windows have been opened and rotated so that the line to measure can be seen in both windows simultaneously.

Click on the **Line Measurement** button to start the procedure. Now click on the location of the initial point of the line, and then again on the end point of that same line. You will see that both spots will appear numbered on the BlomSTREET™ windows, and a line will appear on the other BlomSTREET™ window with the same colour frame of the first one. This line is a visual guide to locate where the first point of the line is located on the second image.
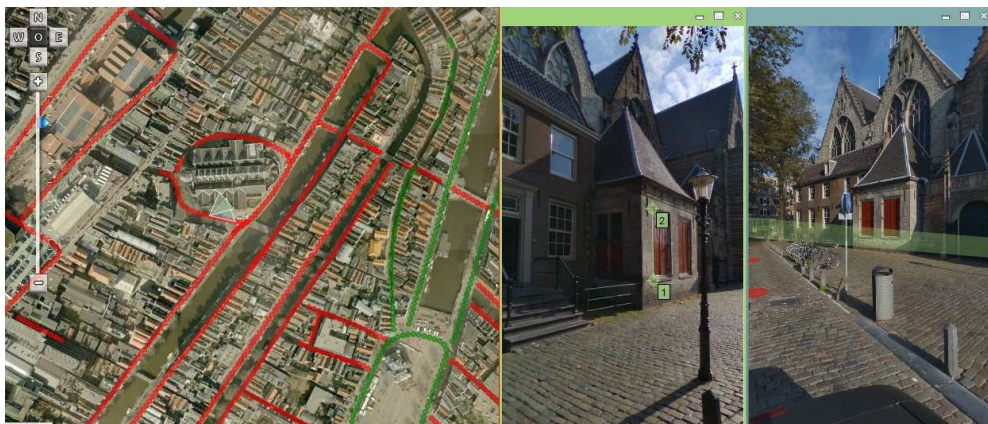

Figure 98: Line Measurement. Step 1

Click on the location of the first point of the line on the second BlomSTREET™ window. Note that the guideline now moves to the possible location of the second point.
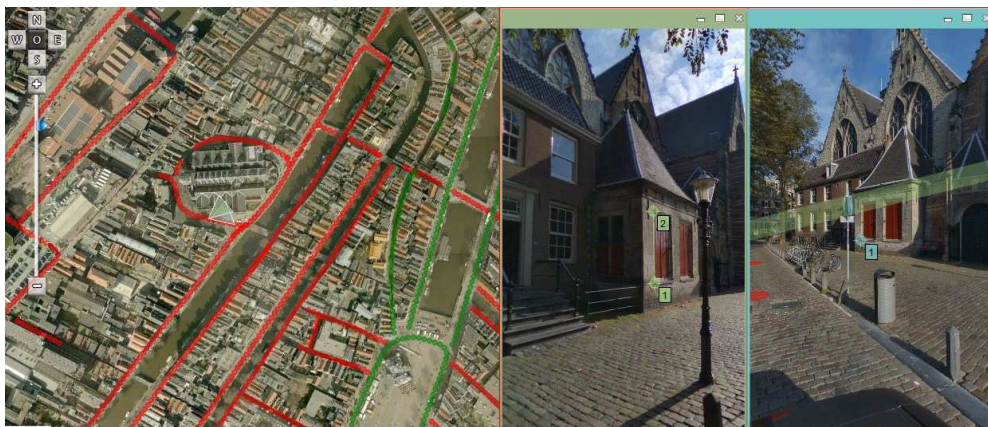

Figure 99: Line Measurement. Step 2

Now click on the location of the second point on the second BlomSTREET™ Window.

Figure 100: Line Measurement. Step 3.

You can further modify the position of the points by clicking on them to reposition, or press the Finish Measurement button to retrieve the results. The length of the line in meters is shown at the bottom of the BlomSTREET™ Window. Clicking on the measurement result will copy it to the clipboard.

10.3.4 Measuring Heights

Although the procedure describe in the previous section can be used to measure vertical lines, that action will only measure the straight distance between two selected points. It is possible to measure actual heights using the Measure Height tool. Once selected, a measurement pole will appear on screen.

To position the height measurement pole, you can drag it around the map or Cyclorama with the mouse, by clicking and holding to position it to the ground plane. Note that actual height measurement must be performed within a Cyclorama. Position the pole correctly and confirm its location with additional nearby Cycloramas. Once the location is determined, click and drag the top or bottom red round indicators (the mouse will change to a hand icon to drag the indicators) to reflect the object you want to measure.

Note that a yellow dot will appear on the map window, marking the location of the measuring pole. You can click on the map window to move the dots and the measuring pole will move accordingly on the BlomSTREET™ Window.

The results of the measurement are shown at the bottom of the window. They are:

- The height of the pole
- The ground elevation of the pole base

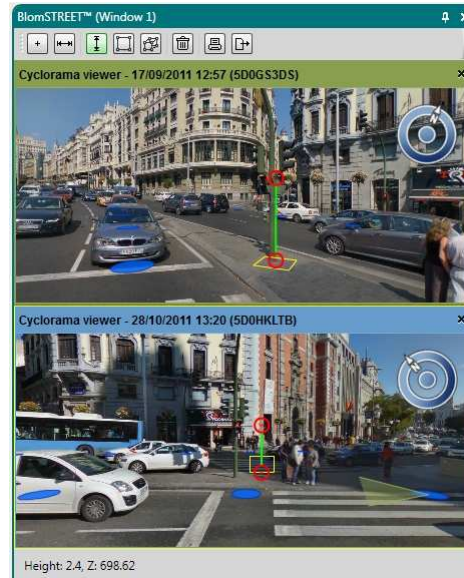Clicking on the measurement result will copy it to the clipboard.

Figure 101: BlomSTREET™ Height Measurement

10.3.5 Plane measurements

Surface measurements can be performed in the same way as height measurements. Instead of one measurement pole you have two which are connected at the top and the bottom. By dragging each pole into position, you can adjust the width of the surface area you want to measure. To adjust the height range of the measurement, click and hold with the left mouse button on the top or bottom edge of the measurement square.

If preferred you can drag the entire tool by clicking and holding with the left mouse button on the grey dot. Note that linked dots will appear on the map window, marking the location of the measuring poles. You can click on the map window to move the dots and the measuring poles will move accordingly on the BlomSTREET™ Window.

Measurements shown are total area, height and width of the measurement box. Clicking on the measurement result will copy it to the clipboard.
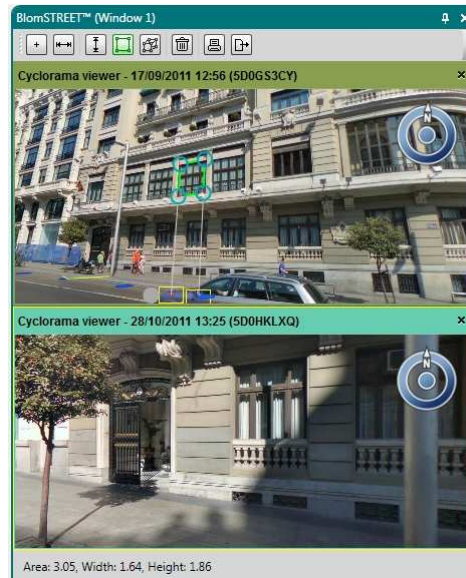
Figure 102: Surface Measurement

10.3.6 Volume measurements

Volume measurements are not too dissimilar from surface measurements. It consists of two surface measurement tools connected to each other to form a cube. Adjusting the size of the cube works in the same way as the surface measurement tool. The individual poles can be positioned separately to encompass the object to be measured. The height range of the cube can be changed by dragging one of the top or bottom plane edges. Like the surface measurement tool, the grey dot at the bottom of the tool can be clickedon to allow dragging of the entire tool without changing its shape.

Note that linked dots will appear on the map window, marking the location of the measuring poles. You can click on the map window to move the dots and the measuring poles will move accordingly on the BlomSTREET™ Window.

Results provided are Area, Height, Perimeter and Volume of the cube.

10.3.7 Deleting measurements

Use the **Clear Measurements** button to delete all measurements and start a new measurement if required.

10.4 Printing BlomSTREET™ data

You can print the contents of the BlomSTREET™ window in any printer connected to your network.

Simply select the **Print BlomSTREET™ viewer** button ( ) and click on the opened BlomSTREET image you want to print. The system printer dialog box will appear to let you select the desired printing options. Click **Ok** to save the image.

10.5   Export BlomSTREET™ data

BlomSTREET™ screenshots can be saved as JPG or PNG files.

Simply select the **Export BlomSTREET™ viewer to image button** ( ) and click on the opened BlomSTREET image you want to export. A dialog box will appear to let you select the desired format and JPG compression level. Click **Ok** to save the image.

Figure 103: Exporting BlomSTREET™ imagery

10.6 Vector data on BlomSTREET™

The BlomSTREET™ can reproject vector datasets and show them over the spherical imagery. This is an immediate action as long as there is vector data overlayed on the main window. Full detail on vector loading on BlomDESKTOP can be found on section 6.5.

Current version of the BlomSTREET™ only supports vector data in GML format. If you have datasets in other formats, they won't visualize in the BlomSTREET™ window.
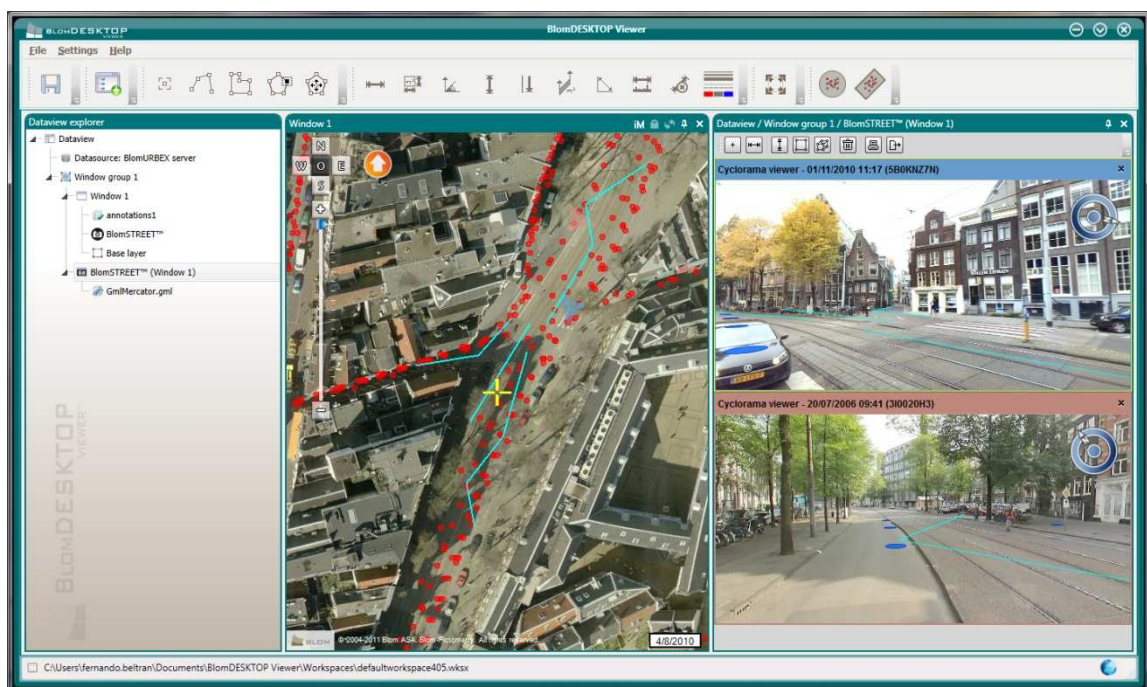

Figure 104: Vector data over BlomSTREET™ image

11   Connection to external WMS Servers

BlomDESKTOP Viewer™ allows you to connect to an external WMS server and use those services as an overlay (or baselayer) on top of any Data Source previously loaded using the tool.

This chapter covers the procedure to load and configure an external WMS service.

NOTE: The WMS services on BlomDESKTOP Viewer^{TM} are usually local services that provide information only for the selected country. **Blom disclaims any responsibility derived from outages, poor performance or any other issue related to the service provided by third party organizations.**

11.1   Adding a WMS layer

WMS services are added at window level. This means that the selected service will be loaded and displayed for a given display window on the user interface.

To add a WMS layer simply right-click on the window name on the Dataview explorer and select the **Add WMS layer…** option.
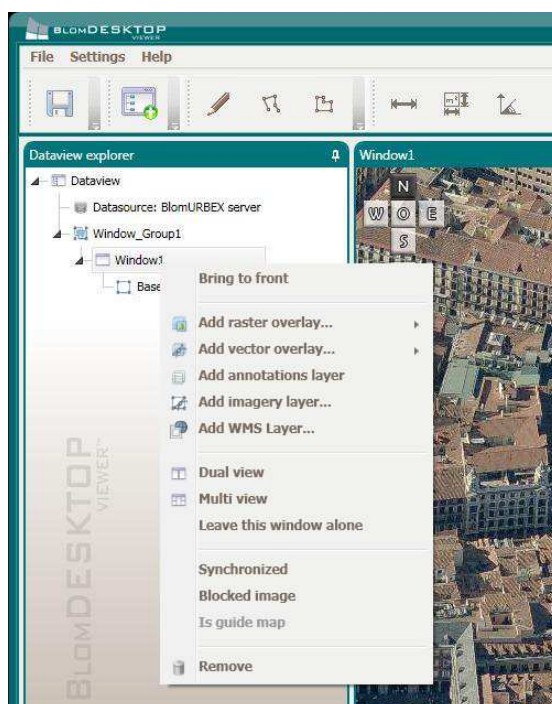

Figure 105: Adding a WMS Layer
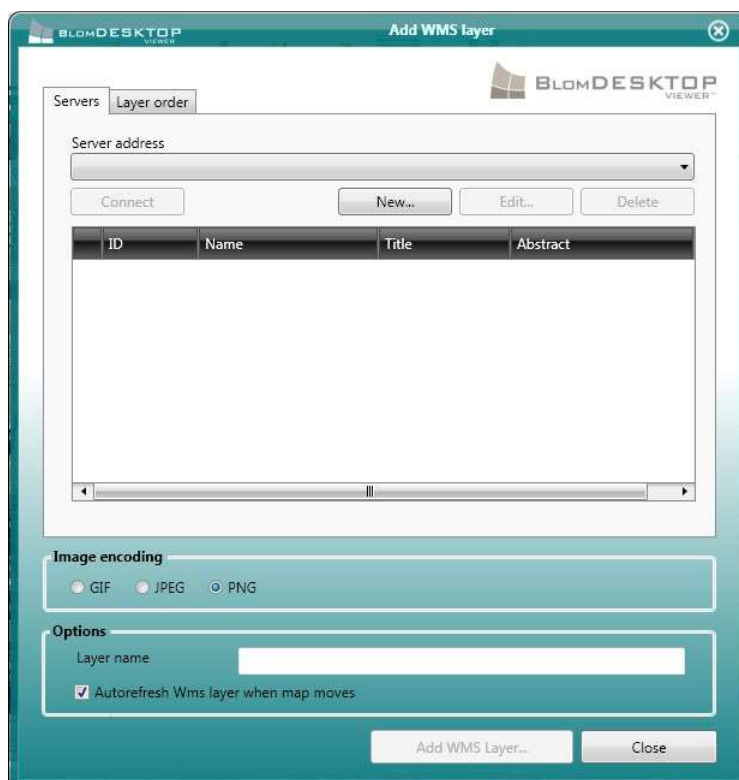
This will open the **Add WMS Layer** dialog box.

Figure 106: Add WMS Layer Dialog Box

The **server address** list box will show any previous servers that you may have loaded. This list will be empty to begin with. In order to load a WMS server you will need to create an entry for it. Do so by clicking on the **New…** button to open the **Add new WMS server** dialog box.
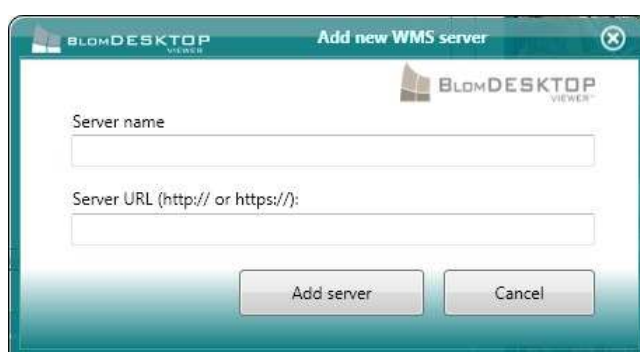

Figure 107: Adding a new WMS Server

Here you will need to provide a name for the service, for later reference on the **Server name** field, and to type the full URL of the WMS server you want to load.
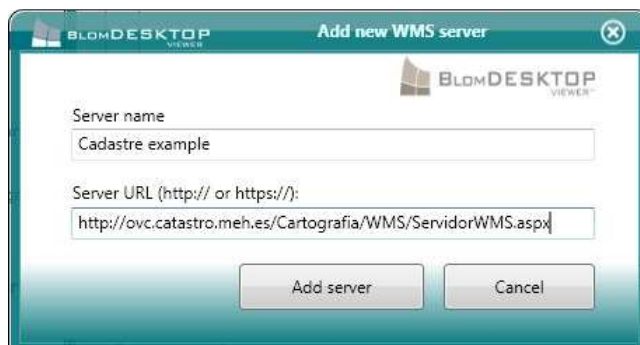
Figure 108: WMS server parameters introduced

The layer name will now appear on the list of server addresses (see below)

Figure 109: Server ready for connection

You now need to connect to that server by clicking on the **Connect** button. Once connected, a list of the available layers for the service will appear on the dialog box (see below).

Note - You can change the image encoding for the service by selecting the **GIF**, **JPG** or **PNG** buttons, and also change the Layer Name by selecting a new name for the service.

Figure 110: WMS Server connected

Now you need to select which layers you want to retrieve for display in BlomDESKTOP Viewer™. To do this, simply click on them with the mouse. Use the Ctrl key to select/unselect additional layers as needed. In the example below we have selected the first three layers in the service.

Figure 111: Selecting layers

You can also change the order in which the WMS layers will be displayed on BlomDESKTOP Viewer™. To do this, simply click on the **Layer Order** tab. As seen below, to change the display order of any given layer, just click on its name and press the arrow buttons to move the order up or down on the list.
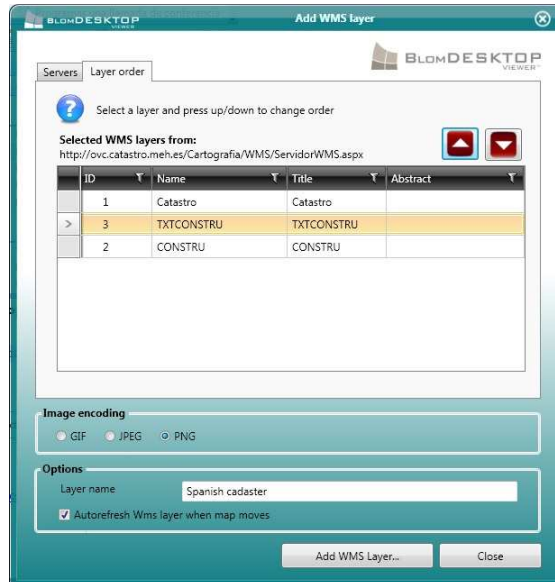
Figure 112: Changing layer order

Once you are happy with the settings, click on the **Add WMS Layer…** button to connect to the service and display it on top of your data.
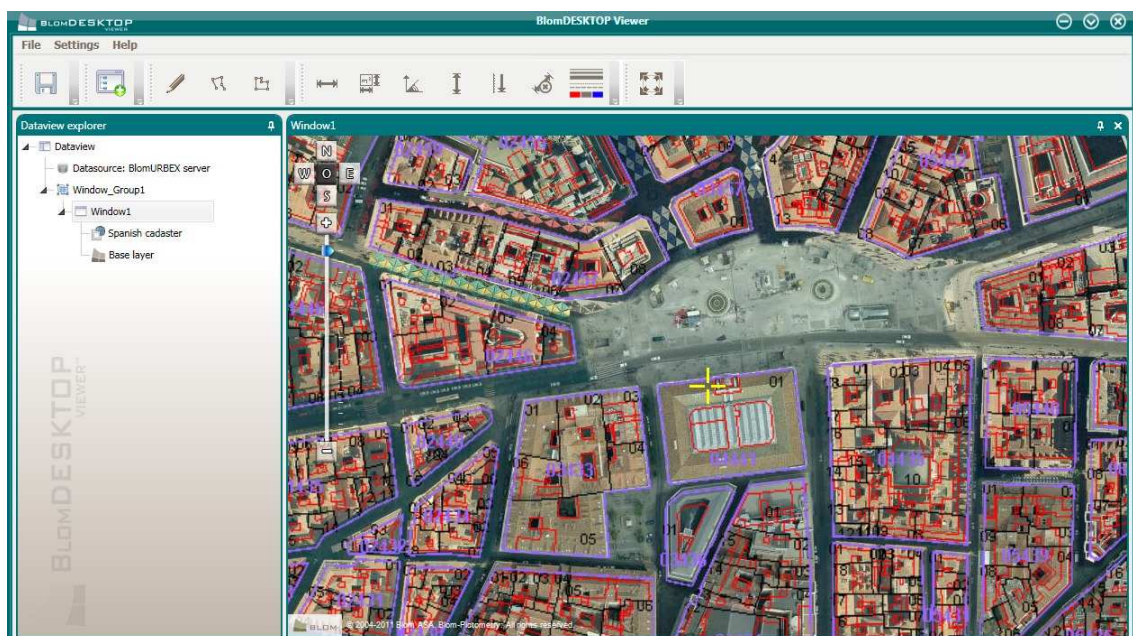

Figure 113: The WMS Service is displayed

11.2 Modifying the list of services

Once you have defined a WMS service on BlomDESKTOP Viewer™, it will remain on your list of services for easy access. You can modify the parameters of any of these services whenever you like. Open the **Server address** list to see the list of pre-loaded WMS servers.
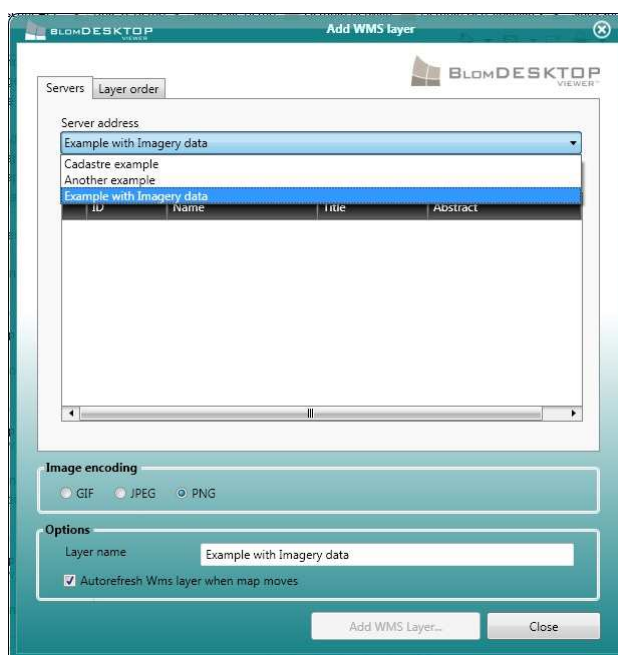

Figure 114: Different servers on the list

a) Click on the **Edit…** button to open the Edit WMS Server (same as **Figure 107**) and modify the service parameters as needed.

b) Click on the **Delete** button to delete the WMS server from the list. Caution: this will not ask you for confirmation and the service will be deleted as you press the button.

11.3 Low-performance WMS Servers

There will be some cases where the WMS Server you are connecting to has poor performance. In order to speed up the performance of BlomDESKTOP Viewer™ you can open the Add WMS Layer dialog and uncheck the **Autorefresh WMS layer when map moves** option. This can also be done by right-clicking on the WMS name on the DataView explorer and un-checking the **Autorefresh** menu option. By default BlomDESKTOP Viewer™ will do a call to the WMS server whenever the image data changes by zooming or panning. Unselecting the Autorefresh option will disable further calls to the WMS server until you:

a) Manually order BlomDESKTOP Viewer to refresh data by right-clicking on the WMS service name and selecting the **Refresh Now** option

b) Check again the Autorefresh option by any of the two methods described above.

12 3D capabilities

BlomURBEX 3D^{TM} is an online platform that streams the photorealistic 3D urban models produced by Blom and allows its integration in different end-user applications through the use of its API and SDKs.

BlomDESKTOP Viewer^{TM} now includes direct access to BlomURBEX 3D^{TM}, allowing the user to view and navigate through the Blom3D model repository without the need to use a different viewer or application. If your BlomURBEX™ credentials (see section 3.2.2.1) grant you access to 3D models, you will be able to work with them and display them synchronized with other windows in your workspace.

Available data models in BlomURBEX 3D^{TM} are:

- BlomURBEX^{TM} Ortho imagery including overlays.
- Urban 3D models in four different Levels of Detail (LOD)[1]
- Digital Terrain Models (DTMs)

12.1 Opening a 3D window

3D windows in BlomDESKTOP Viewer™ are different to standard windows because they contain the 3D viewer control. This means you will need to open a separate window to see 3D models on the tool.

To open a 3D window, right-click on the Dataview name on the Dataview explorer, or right-click on any window group name and select the **Open new 3D window…** option.
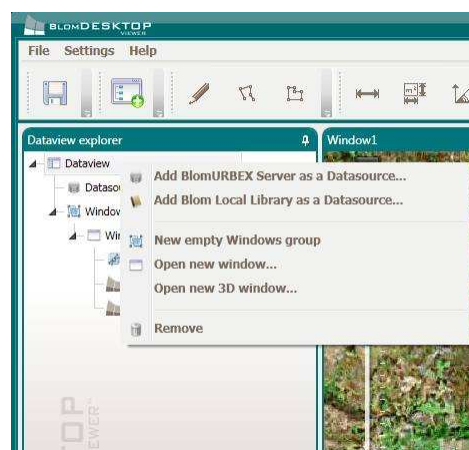

Figure 115: Opening a 3D View

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[1] Refer to the BlomURBEX 3D^{TM} Product Description for details on the different LODs for Blom3D^{TM} models.

This will open a new 3D window on the selected window Group (or create a new window Group if opened at Dataview level).
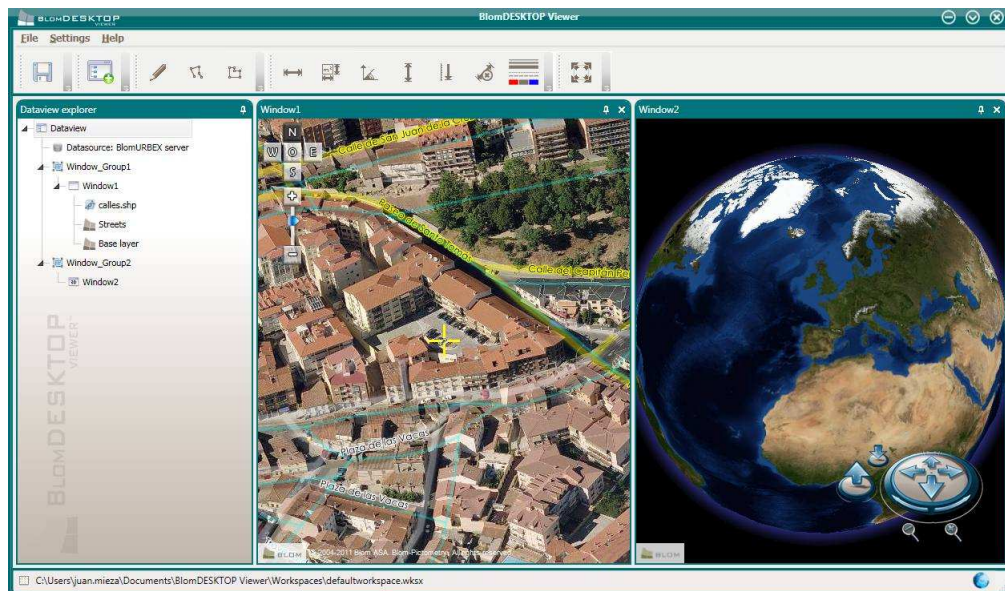

Figure 116: 3D window created

12.2 Synchronizing views

The 3D window will not appear centred on a given city or area. You can navigate the 3D viewer using the standard controls (see section 12.3, below), use the **Go To…** option right clicking on the 3D Window, or synchronize the view with another window.

As detailed on section 4.5.4.3, you can choose which windows you want to synchronize. Simply click on the 3D view, then right-click on their name on the Dataview explorer and select the **Synchronized** option in the menu. All windows marked as Synchronized will change their view according to any user interaction done on any one of the synchronized windows.

Note that the synchronized windows need to be on the same window Group in order for the synchronization to work correctly. Otherwise you will need to synchronize the windows Groups. See section 4.5.4.3 for additional details.
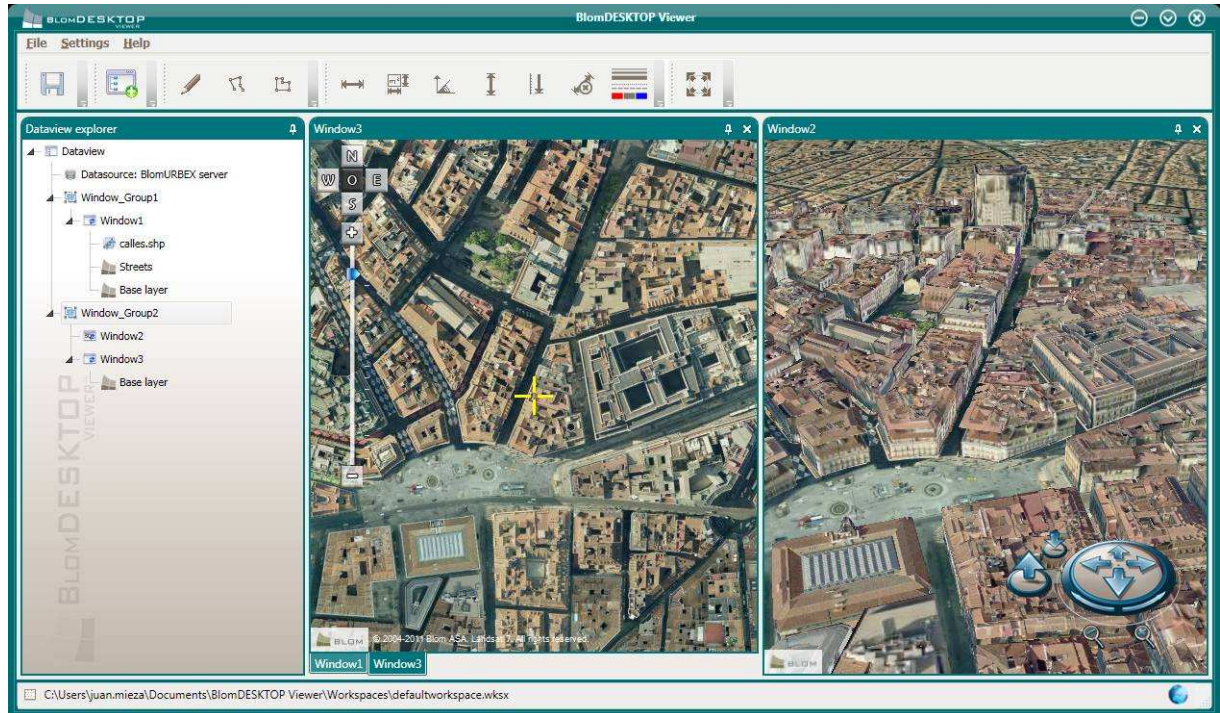
Figure 117: Synchronized 2D and 3D views

12.3 Navigating through the 3D models

To move and rotate the models and the viewing camera you can use the Navigation Pad located in the bottom right part of the screen, or use the mouse and keyboard.

12.3.1 Navigation Pad

- Use the central arrows to move the models forward, backwards, left and right.
- Use the buttons located between zoom buttons and central arrows to move the camera up and down (sky/ground)
- Use the buttons with arrows located in top of the navigation pad to spin left and right
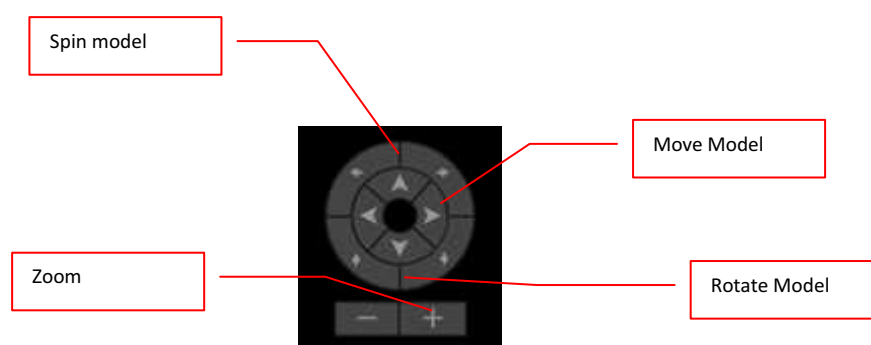- Use the plus and minus button to zoom in and out.

Spin model

Move Model

Zoom

Rotate Model

Figure 118: 3D Navigation Pad

12.3.2 Mouse controls

- Use the central mouse wheel to zoom in and out.
- Left-click and drag to move the models forward, backwards, left and right
- Right-click and drag to spin left and right
- Press Shift and right-click, and then drag to move the camera up and down
- Make a double left-click to zoom in
- Make a double right-click to zoom out
- Make a double middle-click to point the camera to North.

12.3.3 Keyboard controls

- Use the arrow keys to move the models forward, backwards, left and right.
- Press shift and the up/down arrow keys to tilt the camera up and down
- Press shift and the right/left arrow keys to rotate the camera clockwise
- Press Ctrl and the right/left arrow keys to rotate the camera counter clockwise
- Press Ctrl and the up/down arrow keys to zoom in and out.
- **F6:** puts the viewer in 3D mode
- **F7:** puts the viewer in LiDAR mode (see chapter 13)

13   LiDAR datasets

13.1   Introduction

BlomDESKTOP Viewer™ introduces LiDAR visualization capabilities with version 3.0.

The BlomURBEX 3D™ engine has been enhanced to work with LiDAR point clouds in an internal binary file, optimized for online delivery. BlomDESKTOP Viewer™ can now manage huge LiDAR files taken directly online from Blom geoservers, reducing costly investments in hardware and storage. Additionally BlomDESKTOP Viewer™ can work with local LAS and PRJ files, loading them for presentation.

13.2   Accessing LiDAR data

There are two ways to access LiDAR from BlomDESKTOP Viewer™;

- Online: Using a BlomURBEX™ connection
- Offline: Using LAS or PRJ files

The following sections cover these two different ways to work with LiDAR data.

13.2.1 LiDAR data via BlomURBEX™

LiDAR data can be retrieved from the BlomURBEX™ server provided that your login gives you access to areas where there is LiDAR data available.

In order to access LiDAR data follow these simple steps:

1. Make sure you have a valid connection to BlomURBEX™ defined as a dataset (see section 3.2.2)
2. Navigate to an area on the map where LiDAR data exists.
3. Click on the LiDAR area button

Figure 119. LiDAR area button

Once you click this button the mouse cursor will change to a cross. Now select the centre of the area to display with your mouse, and then drag to draw the radius of the area to load.
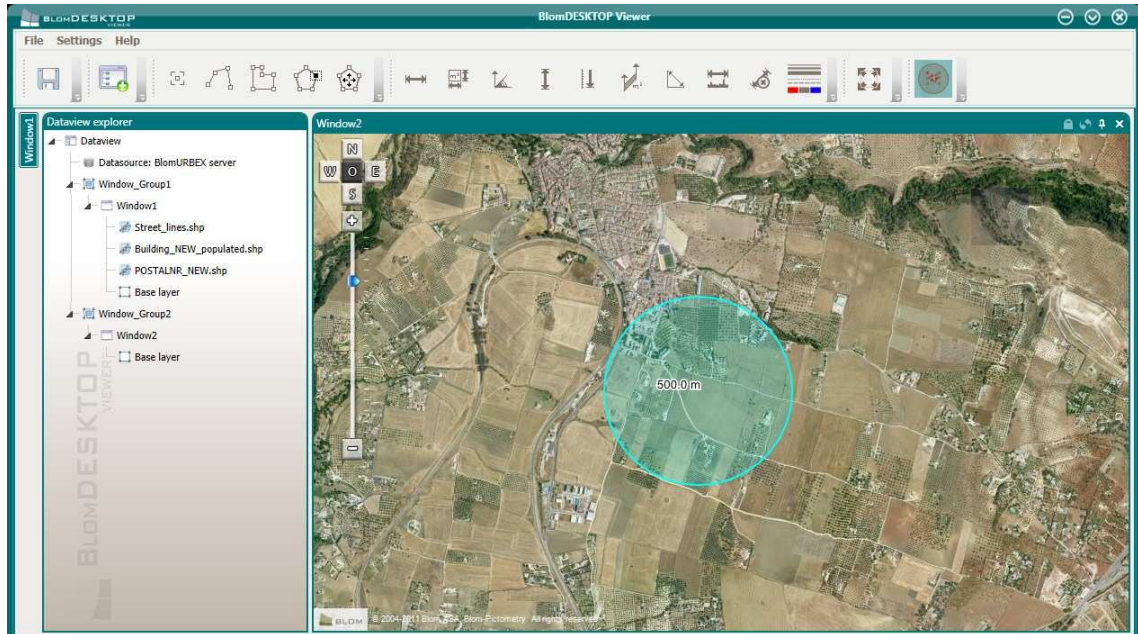
Figure 120: Selecting the LiDAR area to visualise

4. Release the mouse button. Once you select the area, BlomDESKTOP Viewer™ will open a 3D window and display the LiDAR model.
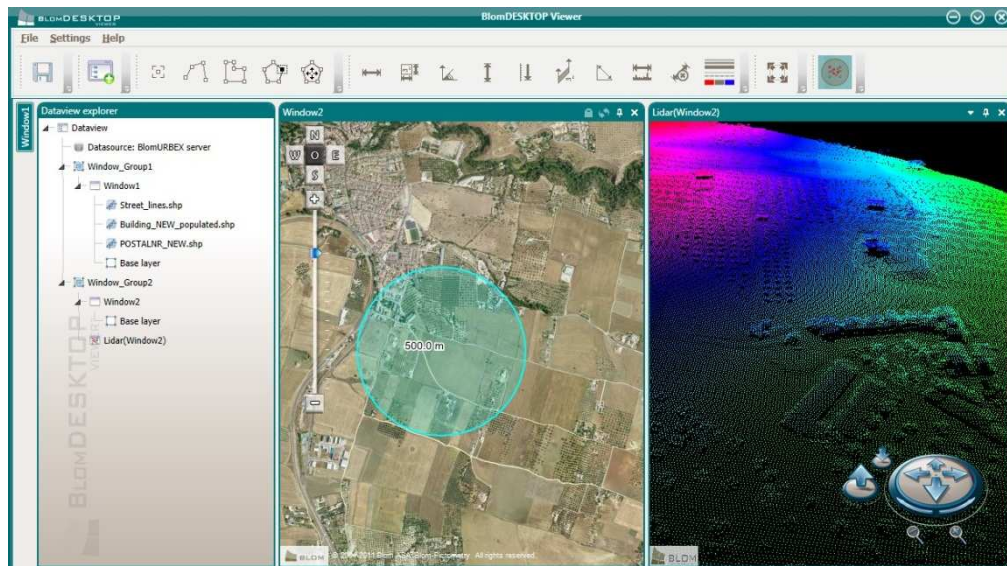

Figure 121: LiDAR Model loaded

Note: Depending on the area size and the speed of your internet connection, this may take some time.

13.2.2 LiDAR data from local files

BlomDESKTOP Viewer™ also allows you to load LiDAR from LAS or PRJ files located on your local hard drive, intranet or external disks.

In order to load a local LiDAR file follow these steps:

1. Right-click on a Window name on the Dataview Explorer and select the **Add LiDAR Overlay…** option.
2. Browse to the location of the file (see section XXX for a description on available formats).
3. BlomDESKTOP Viewer™ will read the file and ask for a valid projection. The Projections dialog box will appear to let you select the required projection for the LAS file.
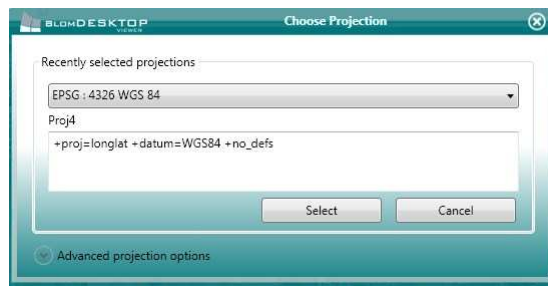
Figure 122: The Projections dialog box

4. Click on **Select** when finished. The extent of the LiDAR file will show on yellow colour on top of the current baselayer (**Figure 123**). If no area appears on the screen, right-click on the LAS file name on the Dataview explorer and select the **Fit to Screen** option (**Figure 124**).
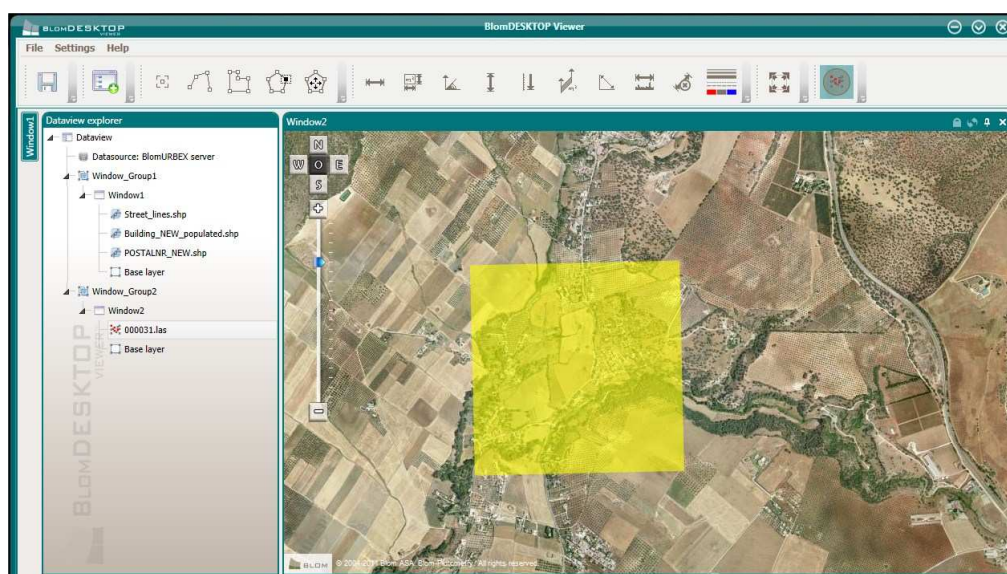

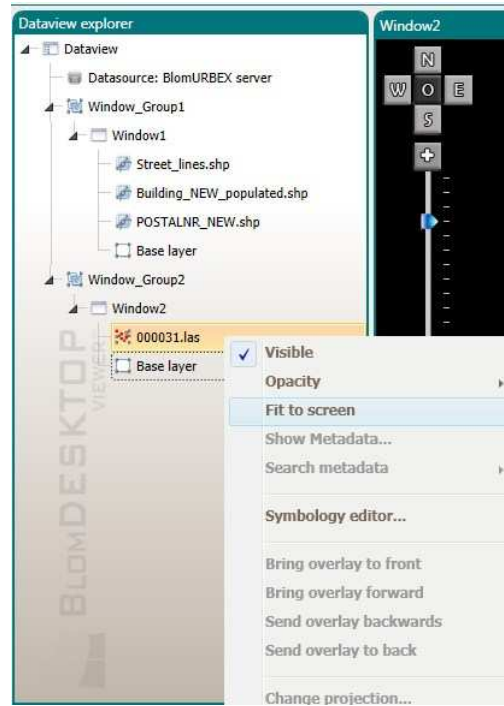*Figure 123: LiDAR area shown over the baselayer*

Figure 124: Fit the LiDAR area to the current viewport

5. Once the yellow area is visible, click on the LiDAR button on the toolbar (**Figure 119**).
6. Once you click this button the mouse cursor will change to a cross. Now select the centre of the area to display with your mouse, and then drag to draw the radius of the area to load. Current version limits visualization to 500m radius models (**Figure 120**).
7. Release the mouse button. Once you select the area BlomDESKTOP Viewer™ will open a 3D window and display the LiDAR model.
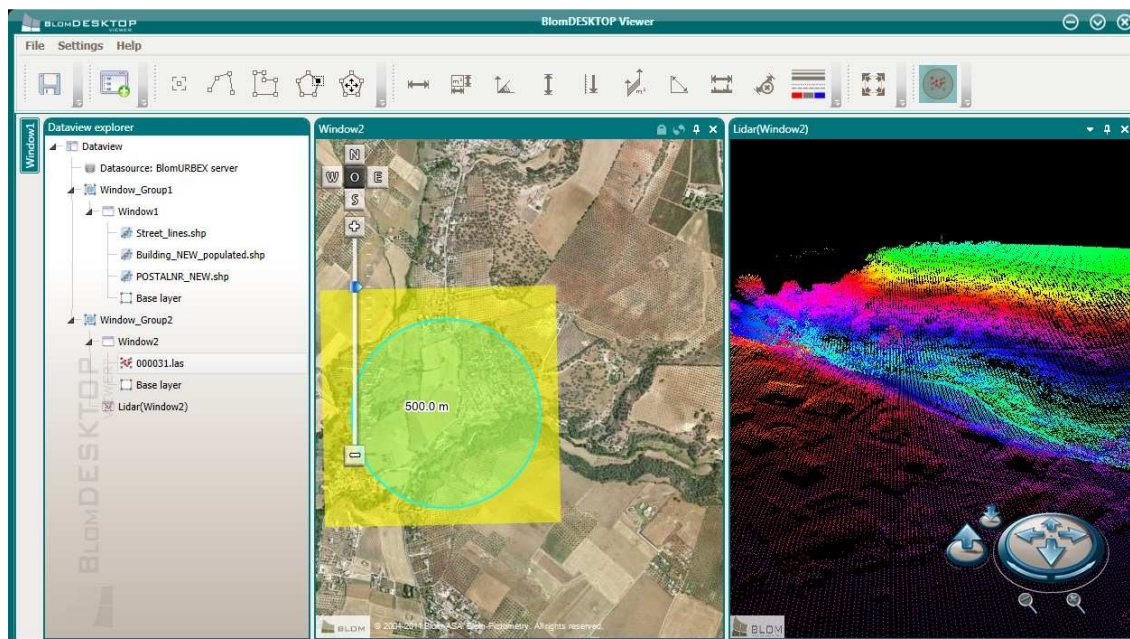
Figure 125: LiDAR file loaded in 3D Window

13.2.3 Change LiDAR point size

On the 3D window LiDAR, using mouse right button it is possible to change the LiDAR point size with the slice including in the menu.
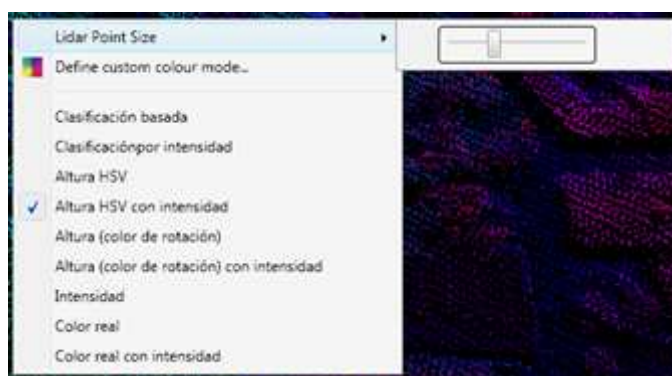
13.2.4 Supported LiDAR Files

BlomDESKTOP Viewer™ v.3.0 supports the following LiDAR file formats:

- LAS format, standard version 1.2
- TerraSolid PRJ format

13.3   Navigating through the LiDAR models

To move and rotate the model viewing camera, you can use the Navigation Pad located in the bottom right part of the screen, or use the mouse and keyboard. The visualization control is the same one used for Blom3D™, so all the mouse and keyboard controls described in section 12.3 are the same.

If there is enough LiDAR data on the area selected, BlomURBEX will retrieve additional information as you navigate the LiDAR view, so **the 3D LiDAR view will be continuous**.

Additionally you can directly change between 3D and LiDAR view using the keyboard:

- **F6:** puts the viewer in 3D mode
- **F7:** puts the viewer in LiDAR mode

13.4   Visualisation options

LiDAR data in BlomWEB Viewer™ can be visualised in nine different modes. These modes can be selected by right-clicking on the LiDAR 3D window and selecting one of the following options:
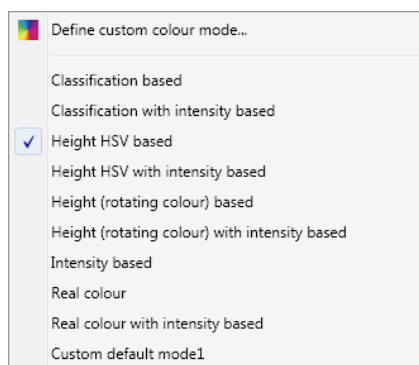

Figure 126: Menu with different ways of view

13.4.1 Classification-based

This view displays LiDAR data based in the classification information stored in the original LAS file(s).
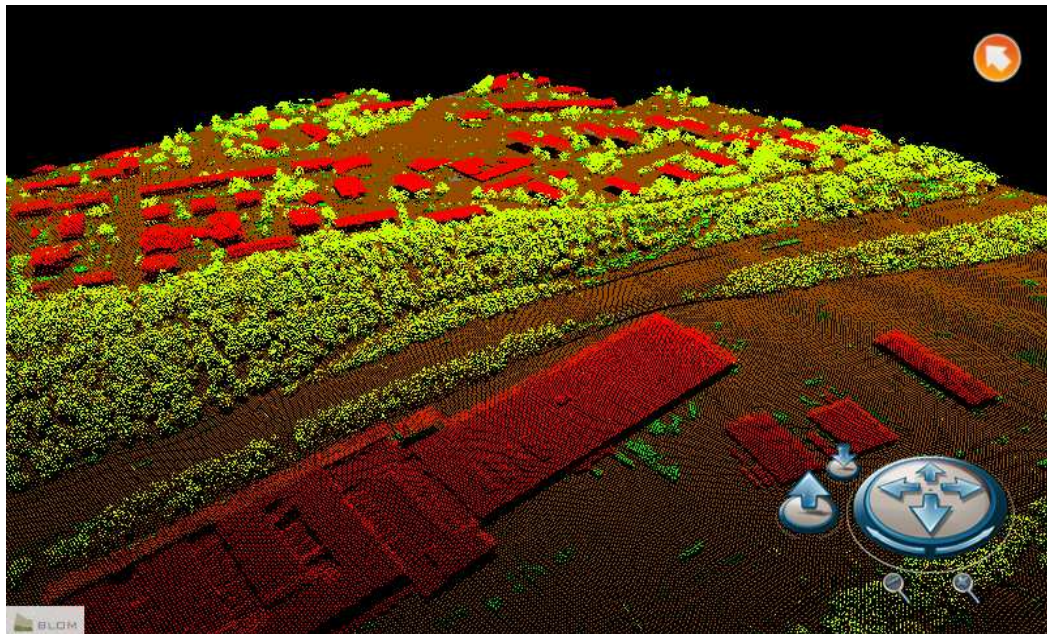

Figure 127: LiDAR data in classification-based view

13.4.2 Classification with intensity based.

This view displays LiDAR data based on the classification intensity parameters from the file. With the intensity parameter enabled the information is clearer to identify.
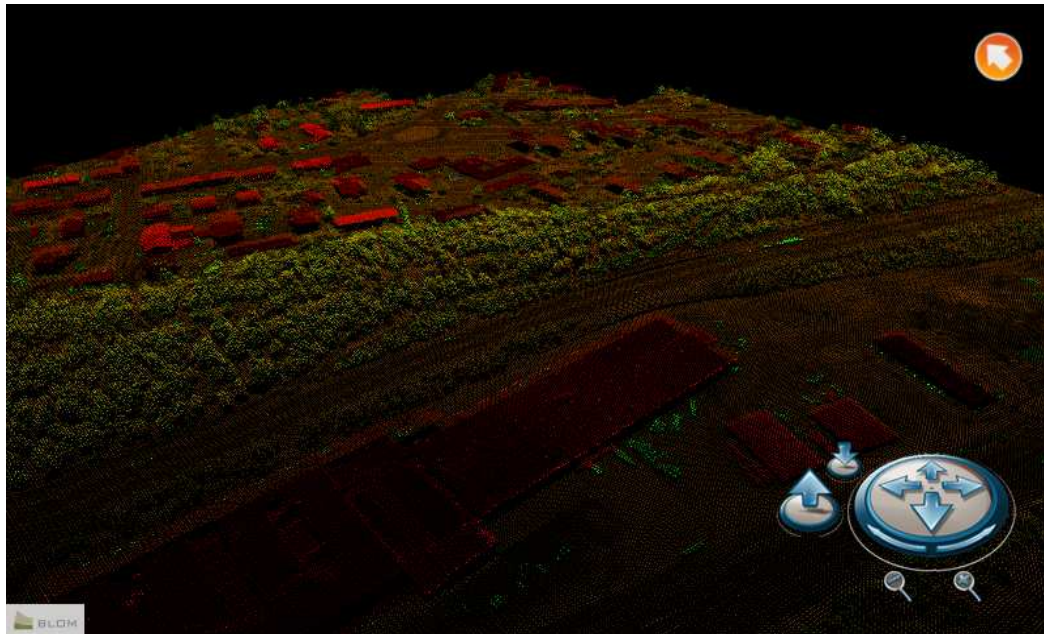

Figure 128: LiDAR data in classification with intensity based view

13.4.3 Height HSV based

As shown in the example above, when the height difference in the LiDAR file(s) is not too varied, height-based colour can lead to a monochrome display. The height HSV colour option provides a cyclic height range of colours that can produce a better display on small height-variation files.
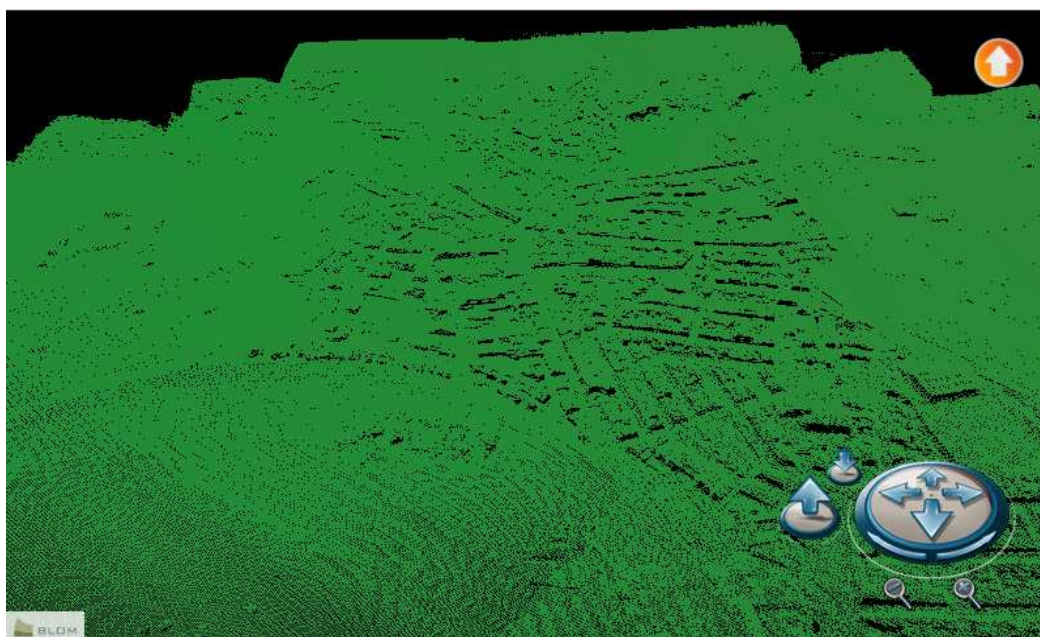

Figure 129: LiDAR data with height HSV colour

13.4.4 Height HSV with intensity based

Similar to the Height HSV based mode above, the Height HSV Intensity parameter is included in the process to generate the view.
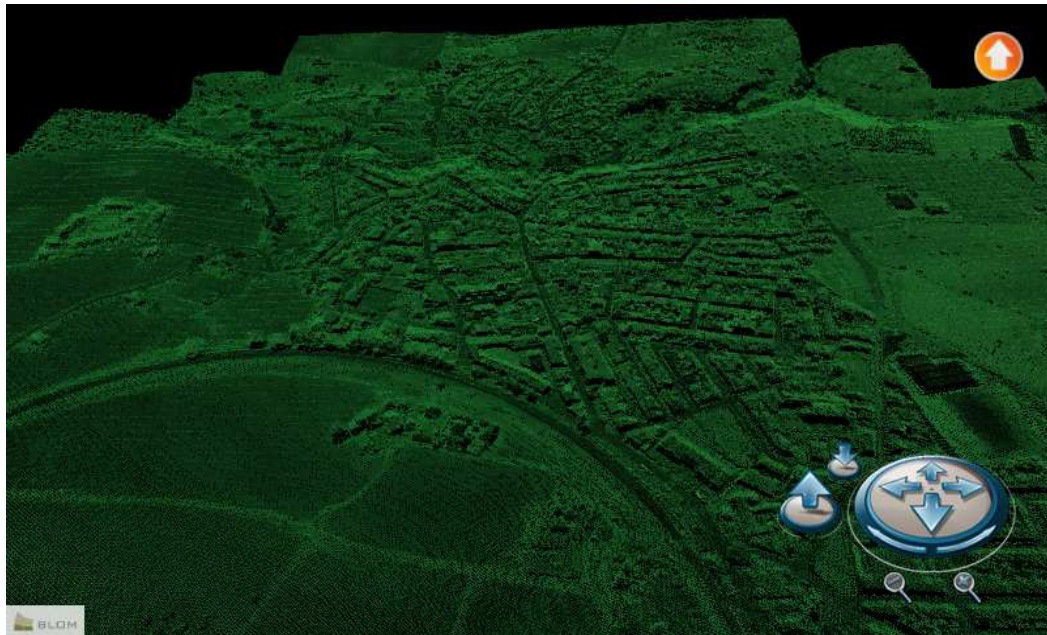

Figure 130: LiDAR data with height HSV colour with intensity based

13.4.5 Height (rotating colour) based

This view displays the data with a colour palette based on the range of heights found in the data. The interval is indicated with a minimum value and maximum value.
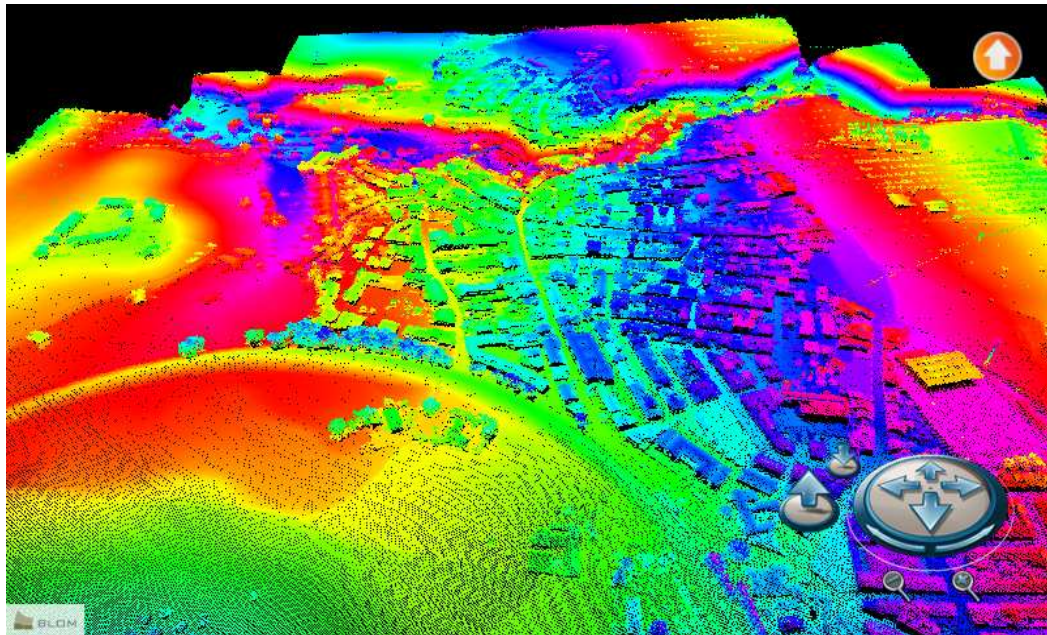

Figure 131: LiDAR data in height-based view

13.4.6 Height (rotating colour) with intensity based

This view is similar to the previous but includes the intensity parameter in the display of the data.
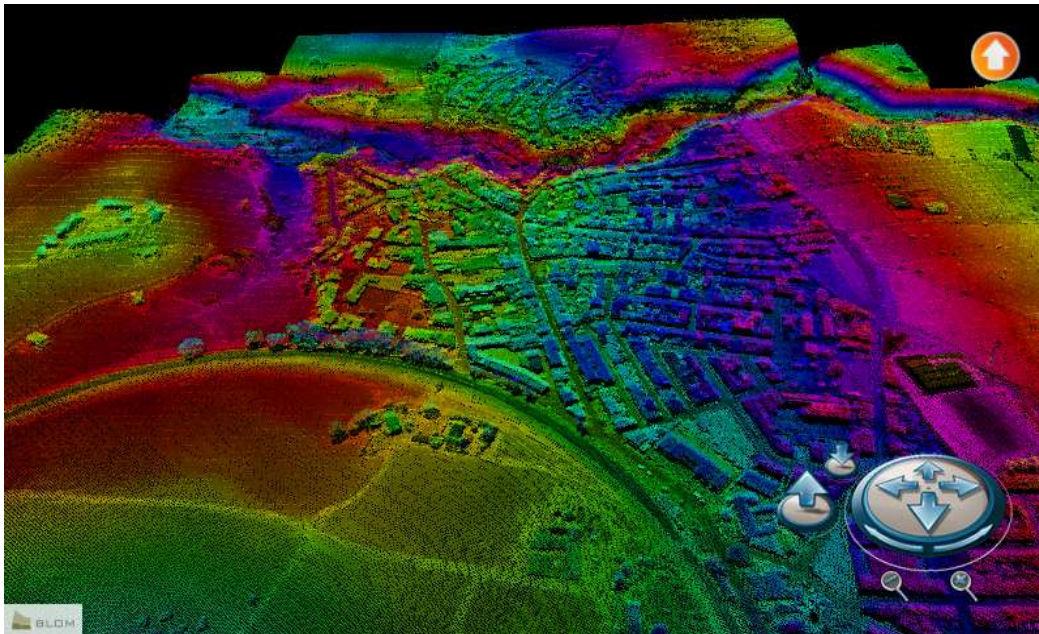

Figure 132: LiDAR data with height HSV with intensity based

13.4.7 Intensity based

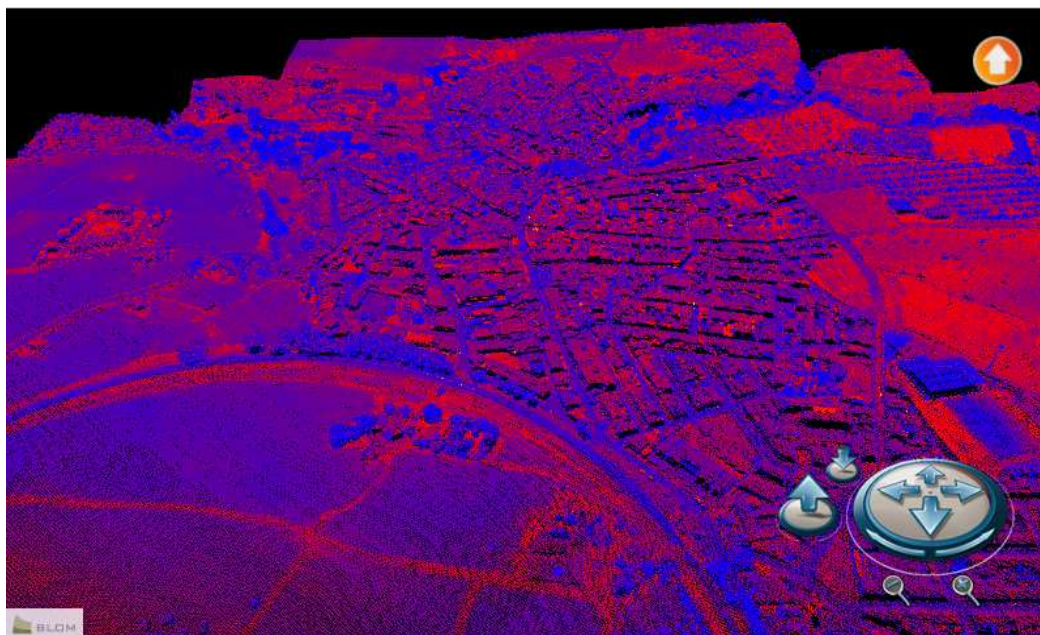This view is generated only with the intensity parameter found in the area indicated.

Figure 133: LiDAR data with intensity based

13.4.8 Real Colour

This is a true colour representation of the LiDAR dataset taken from the information stored in the original LAS file(s).
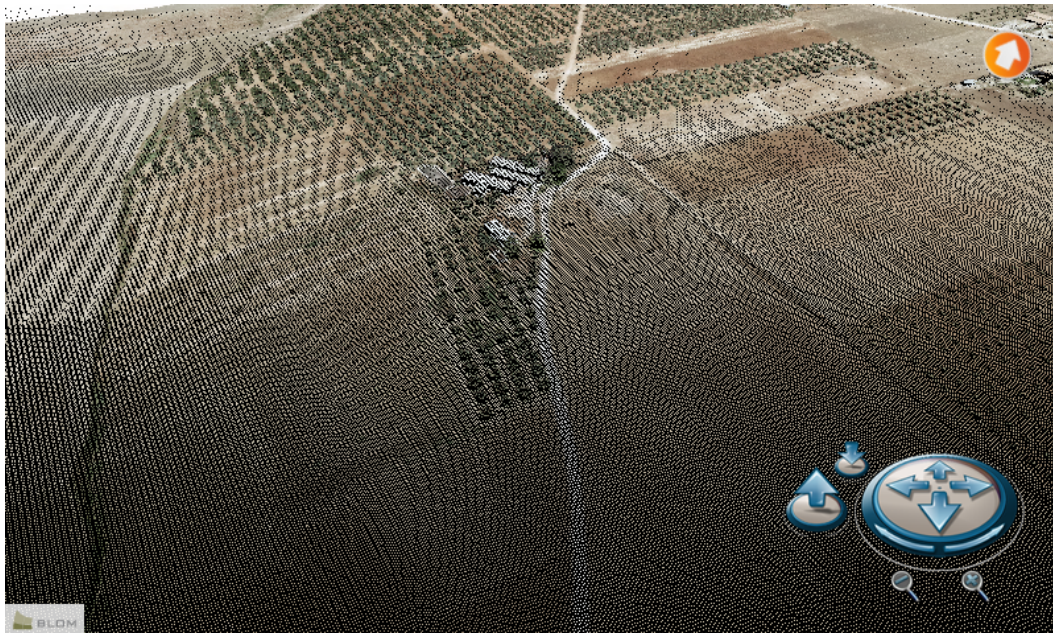

Figure 134: LiDAR data with True colour

13.4.9 Real Colour with intensity based

This is a true colour representation including the intensity parameter of the LiDAR dataset, taken from the information stored in the original LAS file(s).
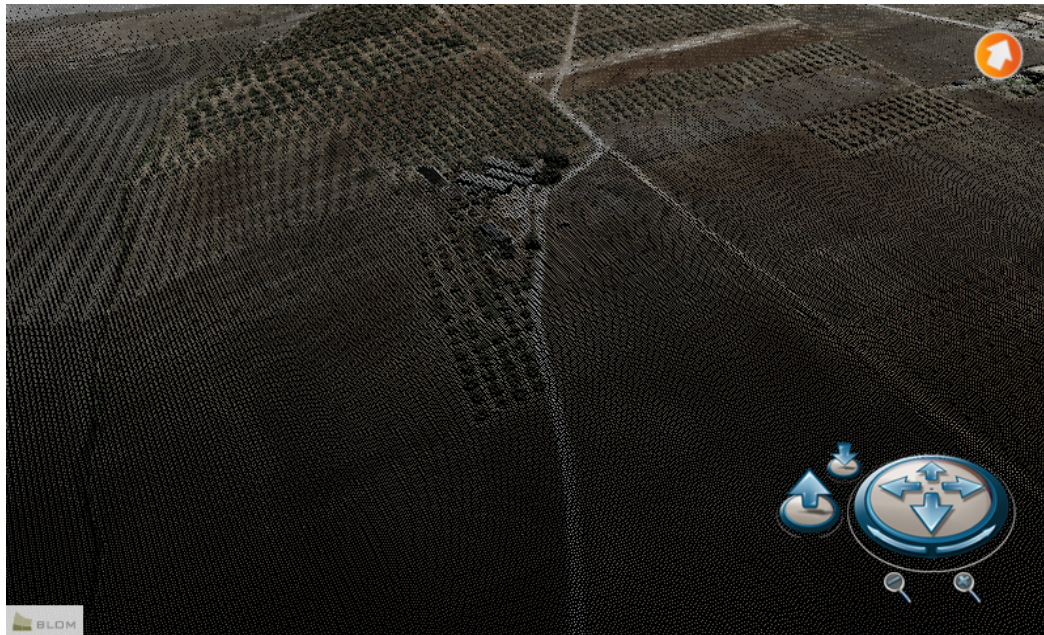

Figure 135: LiDAR data True color with intensity based

13.5 Customizing LiDAR Views

For each view described in previous sections, it is possible to customise them further.

To customise each view simply select the **Define custom colour mode** option. This option allows you to change the default visualisation of the LiDAR data in four modes

Classification

Height

True Colour

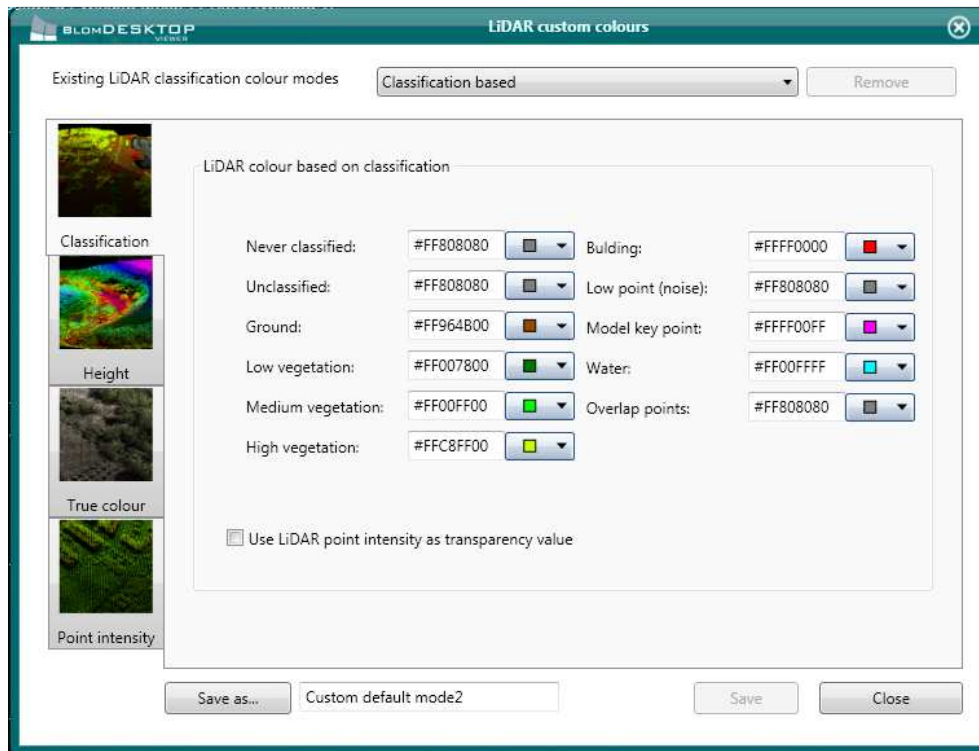Intensity

13.5.1 Custom Classification

Figure 136: Custom Classification

In this window BlomDESKTOP provides information of the current classification colours used. For each class the user can change the colours represented in the data. In the example the ground is represented by a brown colour.

For each class you can change the colour value in Hexadecimal format, or you can click in the colour dropdown box and choose a colour.

The option 'Use LiDAR point intensity as transparency value' will include this parameter into the process of the view generation.
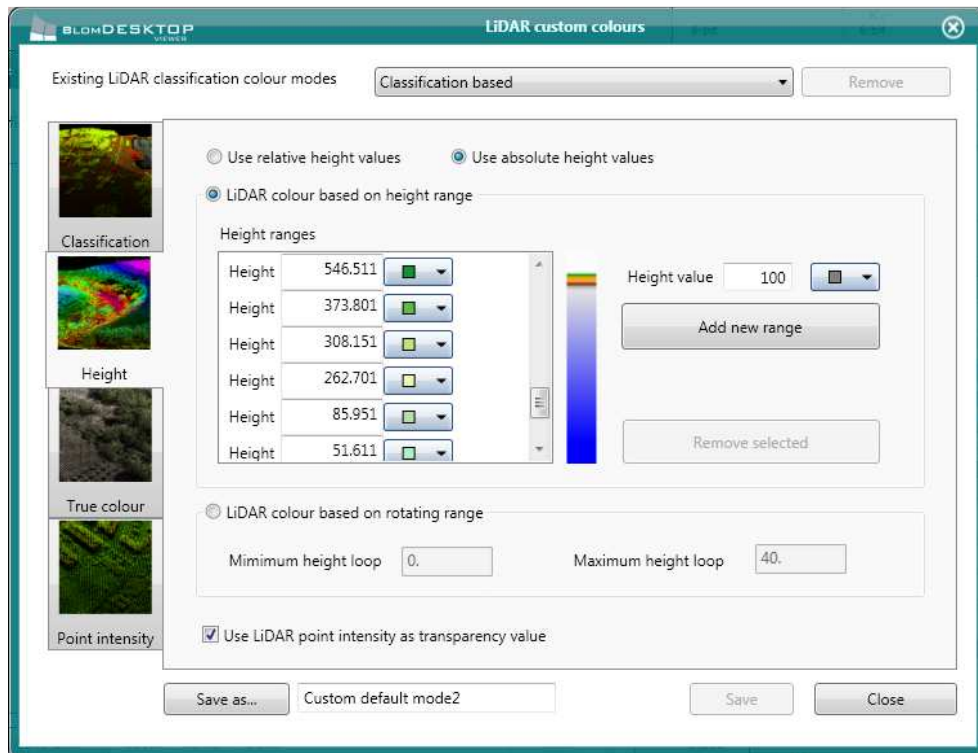
13.5.2 Custom Height

Figure 137: Custom Height

This window allows you to change the height visualisation colours for the LiDAR data.

You can switch between relative heights and absolute heights by simply clicking the appropriate option button (use relative height values and use absolute height values).

It is possible to define new height ranges for the LiDAR data by using the text box **Height Value**. After a value has been chosen, the button "**Add new range**" must be used to generate the new range. The whole list of ranges appear into the Height ranges list box

If you want to repeat the colours into this representation, it is required that you enable the LiDAR colours based on rotating range, and BlomDESKTOP will ask the minimum height loop and the maximum height loop.

Check the option 'Use LiDAR point intensity as transparency value' to include this parameter into the view generation process.
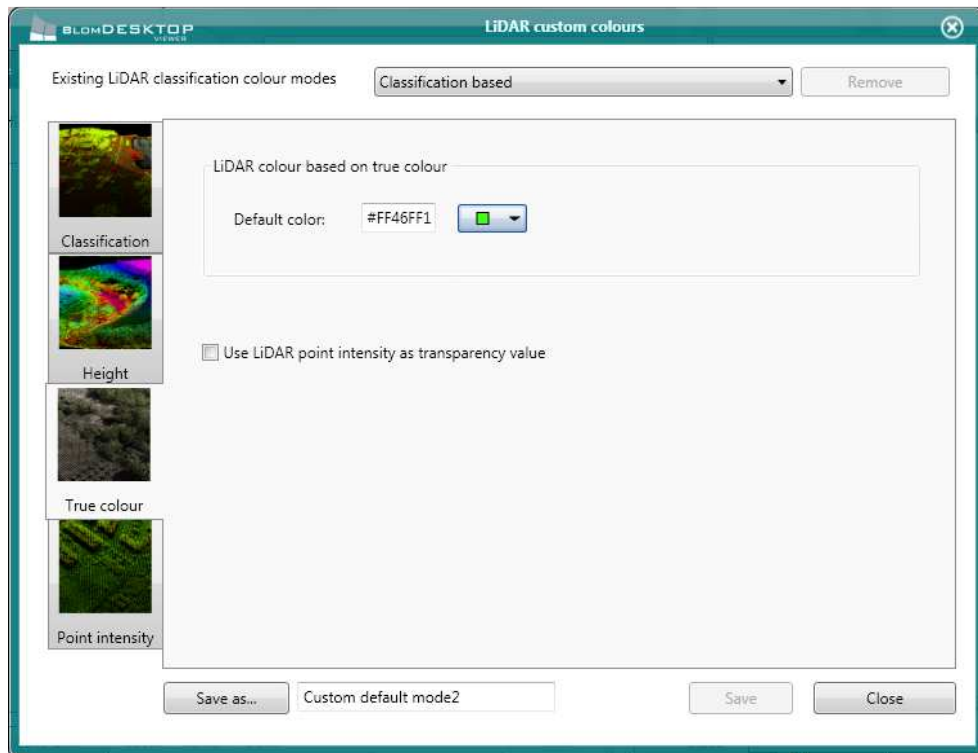
13.5.3 Custom True Colour

Figure 138: Custom True Colour

If you tick the option to 'Use LiDAR point intensity as transparency value', this will include the parameters into the view generation process.
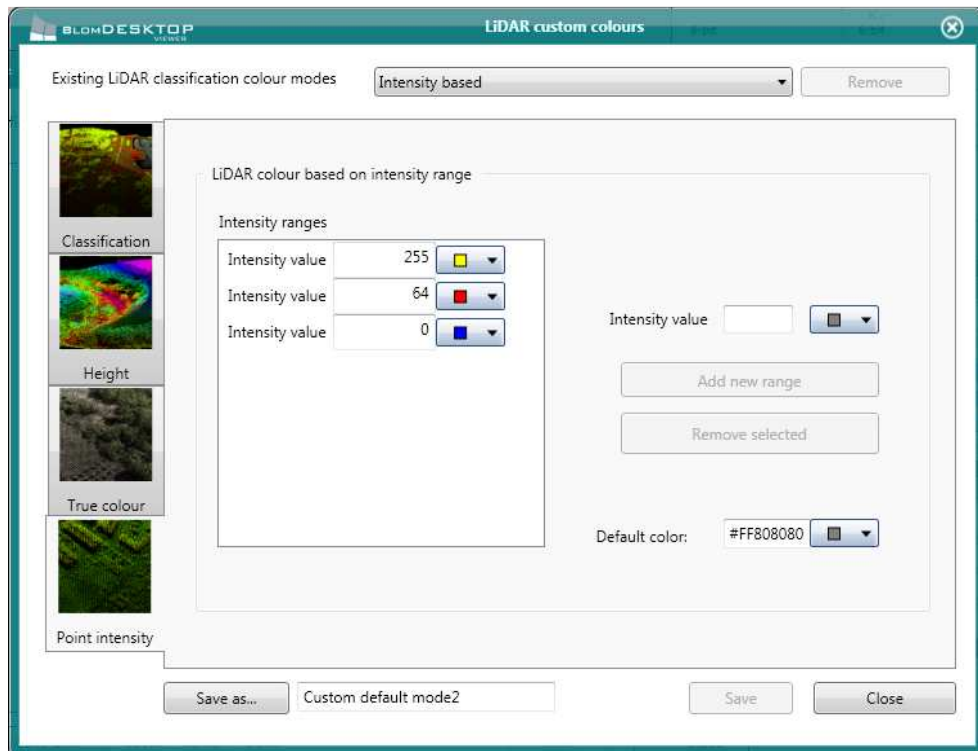
13.5.4 Custom Point Intensity

This option allows you to customise the intensity view for the LiDAR data. It is possible to define a new range for the intensity parameter by simply typing the value in the text field, and then by pressing the button 'Add New range'. For each range it is possible to select one colour for its representation into the view.

13.6 LiDAR profiles

BlomDESKTOP Viewer™ allows the extraction of terrain profiles from LiDAR datasets, and to perform precise measurements using the data.

In order to access LiDAR data follow these simple steps:

1. Make sure you have a valid connection to BlomURBEX™ defined as a dataset (see section 3.2.2) or load an offline local LAS file.
2. Navigate to an area on the map where the LiDAR data exists.
3. Click on the LiDAR profile button.

Figure 140. LiDAR profile buttons

Now you need to select the area of the profile. Using the mouse:

   a) Click on the map to define the starting point for the profile.
   b) Click again on the map to define the ending point of the profile. A blue line will display indicating the length of the profile.
   c) Move the mouse to position and define the width of the profile to be extracted.
   d) Click to finish.

BlomDESKTOP will then extract the profile data and open the LiDAR profile window as seen in the screenshot below. Depending on the LiDAR density and size of the profile this operation may take a few moments.
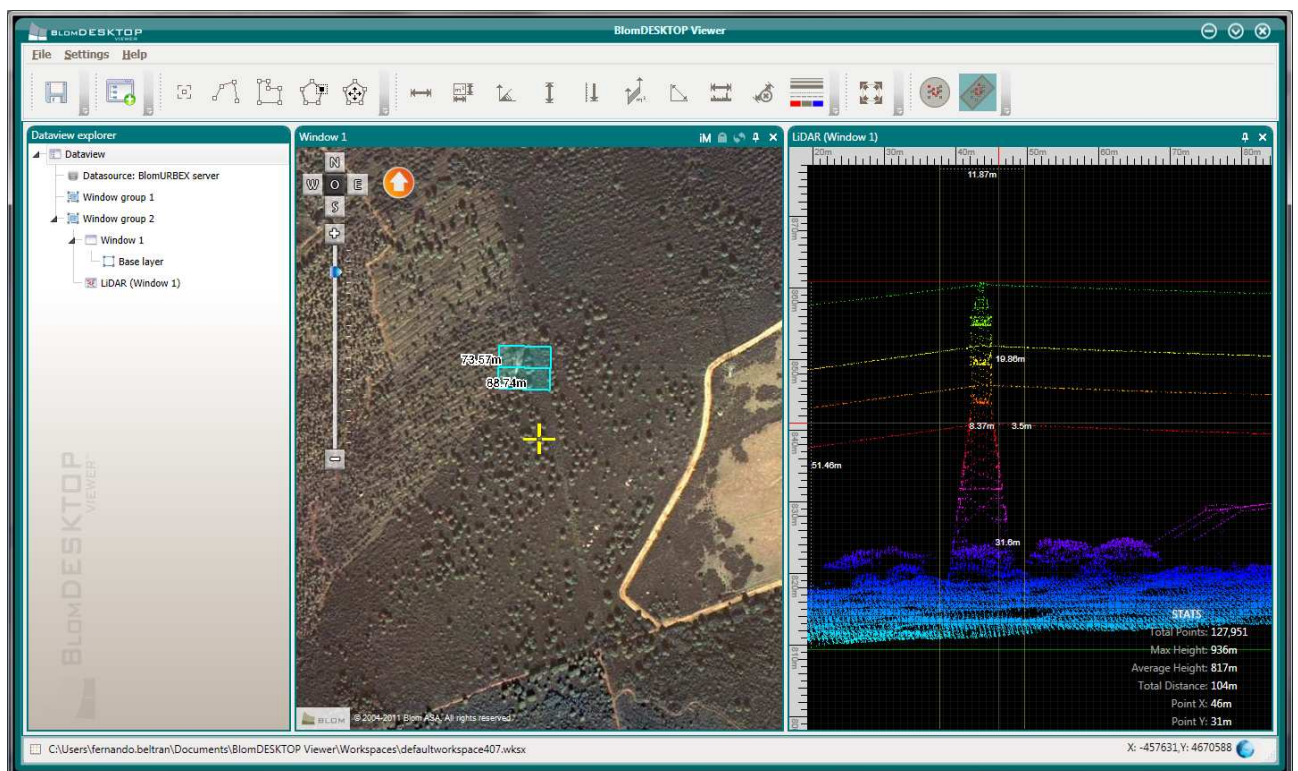

Figure 141: LiDAR profile

Moving the mouse cursor in the profile window will display the measurements relative to the profile min/max guides. The figures will also change in real-time as you move the cursor.

Clicking and dragging on any part of the LiDAR viewer will pan the image allowing you to move as desired. Zooming in and out can be performed using the mouse wheel.

All measurements are relative to the min/max guides. These are the yellow vertical lines that define the extension of the profile. The green line defines the height as zero, and the red line defines the maximum height. You can click and drag on any one of them to move them and choose the objects you want to measure.
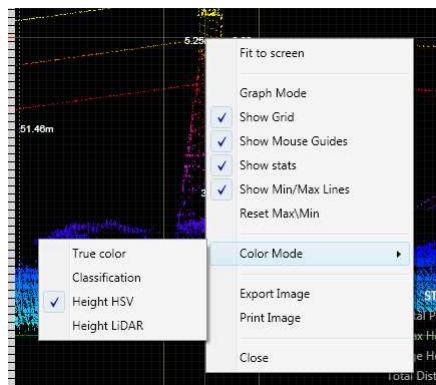

Figure 142: LiDAR Profile Options

Right-clicking on the profile window will display the LiDAR profile menu. The options are as follows:

- **Fit to screen:** This option will make the LiDAR profile window display the total extension of the profile

- **Graph Mode:** Reserved for future versions of BlomDESKTOP

- **Show Grid:** Default option. Deselect it to hide the grid ruler from view

- **Show Mouse Guides:** Default option. Deselect it to hide the mouse measurements from view

- **Show Stats:** Default option. Deselect it to hide the LiDAR stats from view

- **Show Min/Max lines:** Default option. Deselect it to hide the vertical/horizontal mouse guides from the view

- **Reset Max/Min:** Select this option to reset the Max/Min lines to their default positions

- **Opacity:** This option allows you to change the opacity

- **Colour mode:** Use this option to select the colour mode for the profile view. Options are the same are described in section 13.4

- **LiDAR Point Size:** This option allows you to change the point size of the LiDAR data

- **Export image:** Saves the current viewport contents to a JPG file

- **Print image:** Sends the current viewport contents to a selected printer

You can press and hold the shift key and left-click and hold the mouse to draw a rectangle on screen. The profile viewer will zoom to the area selected in the rectangle.

You can also use the magnifying tool in the profile viewer to zoom on specific image areas (see section 5.5).
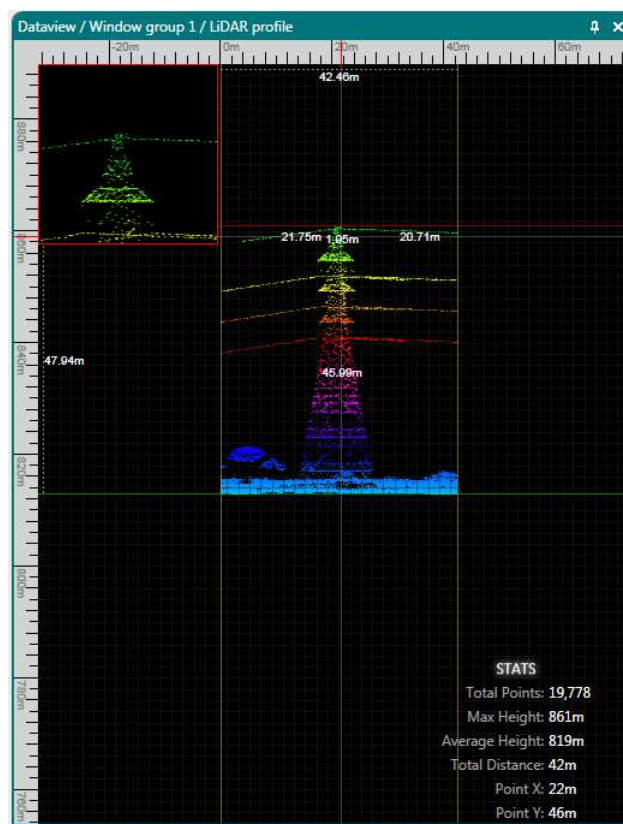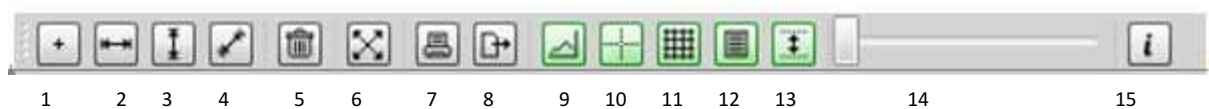

Figure 143: The Magnifying tool in the LiDAR Profile Viewer

13.6.1 Toolbar in LiDAR profile

When a profile is created a toolbar will appear in BlomDESKTOP, this toolbar contains the options explained in the previous section, and are listed below in more detail.

Tool	Description
1	Add new point into the LiDAR profile
2	This tool performs horizontal measurements
3	This tool performs vertical measurements
4	Free measurements (vertical and horizontal at same time)
5	Remove all measurements
6	Fit the whole LiDAR data to the screen
7	Open the print dialog to print the content of the LiDAR profile.
8	Export the view to an image
9	Switch to Graph mode
10	Show mouse guides
11	Show grid
12	Show/hide statistics
13	Show/hide maximum/minimum lines
14	Change point size
15	Show/hide metadata

13.6.1.1 *Add Point*

This tool lets you to add point into the LiDAR view

Select the desired add point tool by clicking on the appropriate icon in the toolbar and follow this procedure for add a new point.

2. Click in any part of the screen to add new point. This point displays the absolute and relative height.
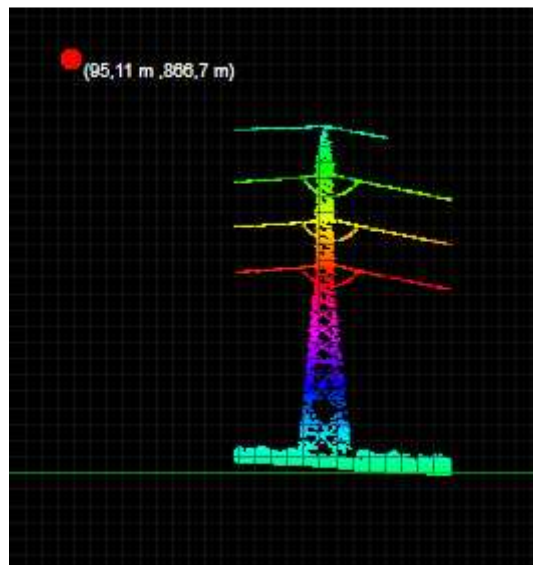

Figure 144: Add a new point

13.6.1.2 *Horizontal measurement*

This tool [icon] allows doing horizontal measurements.

1. Click on any part of the lidar viewer
2. Move the mouse horizontally to draw a new line
3. Click to finish, and the horizontal measurement appears on the screen (in meters).
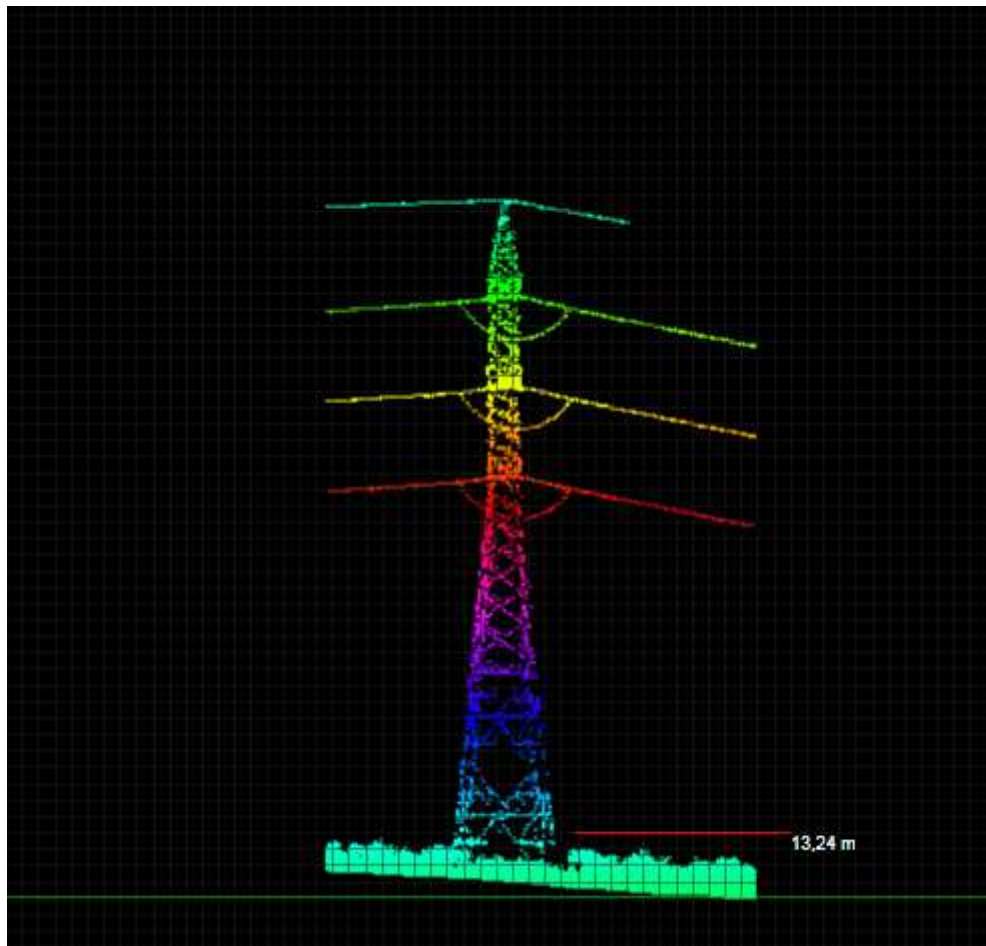

Figure 145: Horizontal measurement

13.6.1.3 *Vertical measurement*

This tool ⬚ allows doing vertical measurements.

1. Click on any part of the lidar viewer
2. Move the mouse vertically to draw a new line
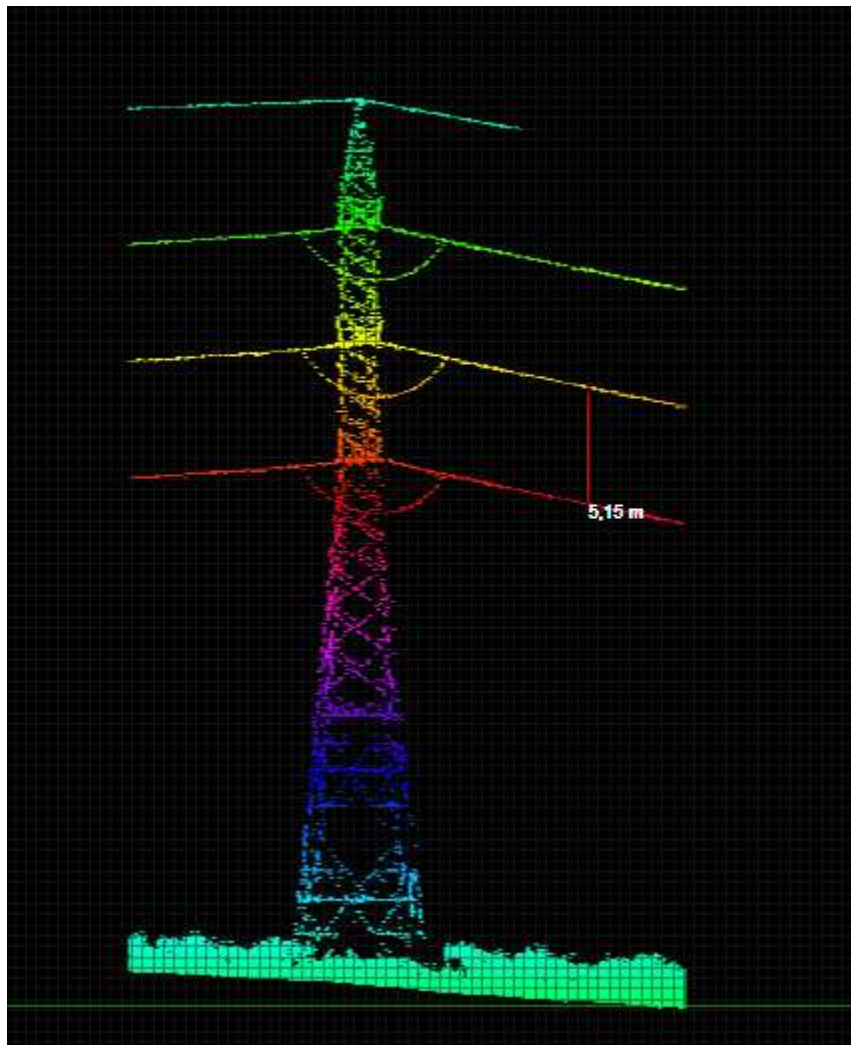3. Click to finish, and the vertical measurement appears on the screen (in meters).

Figure 146: Vertical measurement

13.6.1.4 *Free measurement*

This tool ✎ allows doing measurements in any directions, not only in vertical and horizontal.

4. Click on any part of the lidar viewer
5. Move the mouse in any direction to draw a new line
6. Click to finish, and the measurement appears on the screen (in meters).
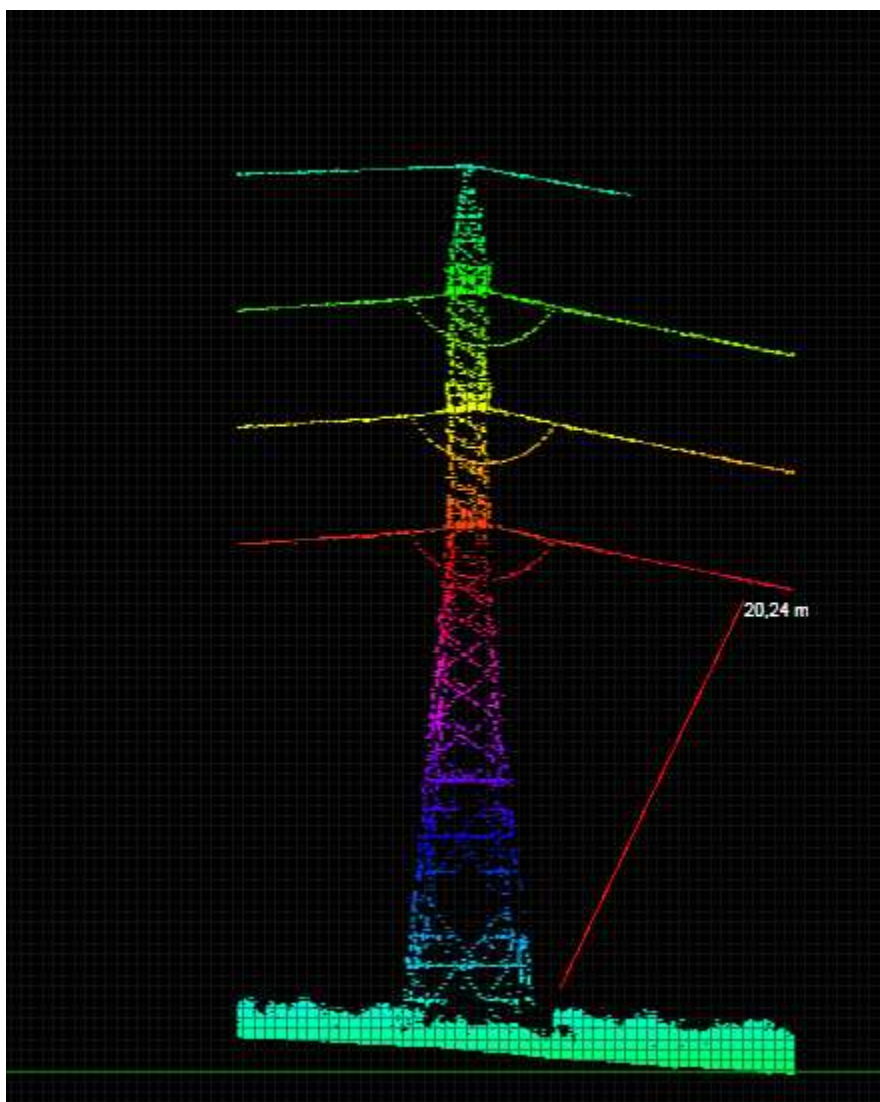

Figure 147: Free measurement

13.6.1.5 *Remove all measurements*

Selecting this tool 🗑 all the measurements will be removed from the lidar viewer.

13.6.1.6 *Fit to screen*

It may happen that after making several measurements, and several lidar zooms, the all LiDAR data are not visualized on the screen, then there is a tool in the toolbar to fit all the LiDAR data to the screen.

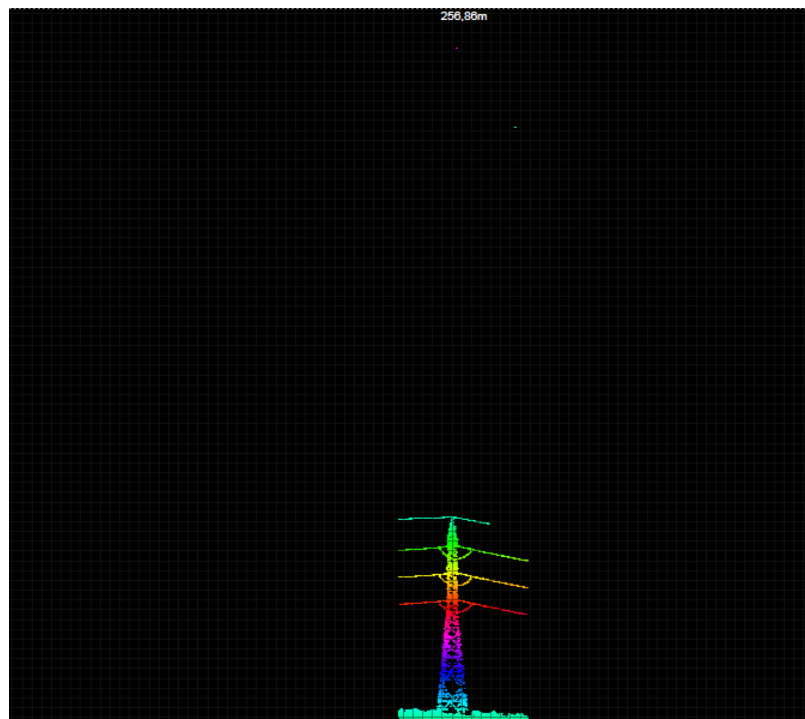Make click in this button ⤢ to fit the whole data into the screen.

Figure 148: Fit to window

In this case, there are several points at 256 meters above the ground. It is probably these points will be birds.

13.6.1.7 Print View

This tool ![print icon] lets you to print the lidar view content. This tool opens the windows printer dialog, where it's possible to select one printer.
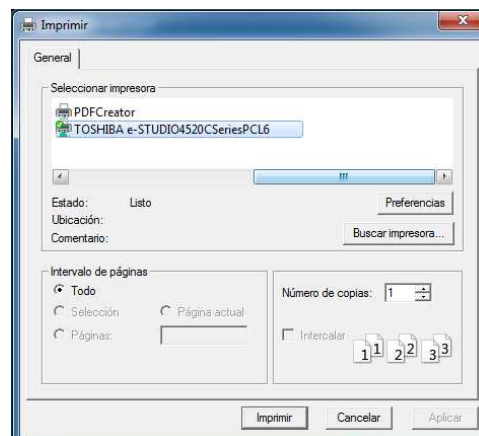
Figure 149: Printer Dialog

13.6.1.8 Export View

Next tool ![export icon] allows exporting the lidar view content to an image. This tool open the "Save As" windows dialog to select the destination and the format, to store the image.
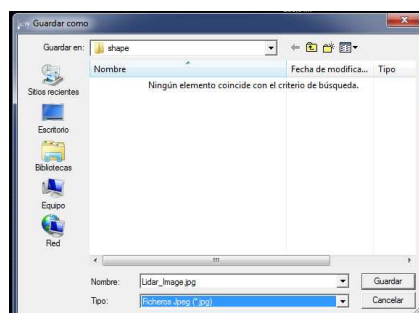
Figure 150: Save as dialog

Jpeg, Tiff and Png are formats supported.

13.6.1.9 *Graph mode*

This tool ![button] change the visualization into mode graph. Just click in the button of the toolbar.
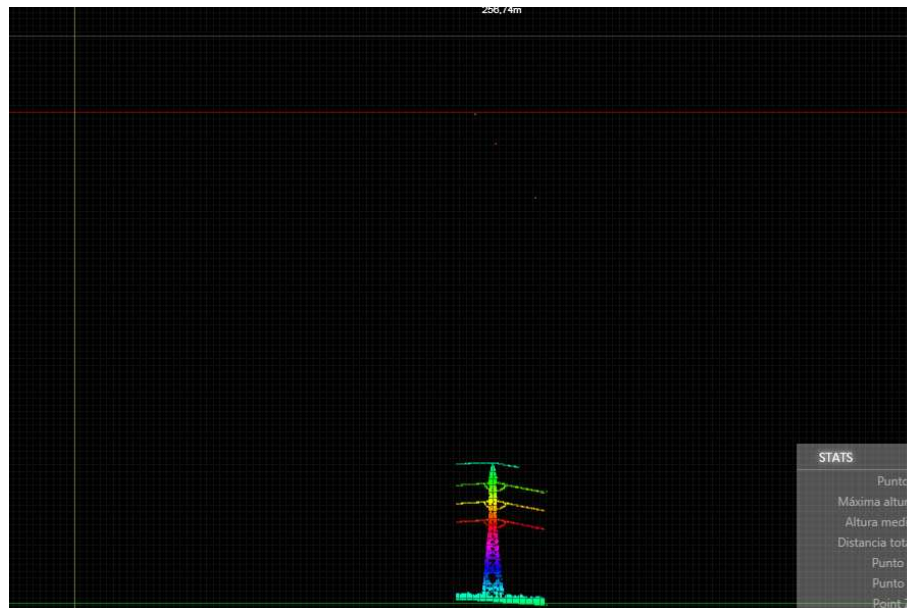
After click the button in the LiDAR view will appear the LiDAR profile.
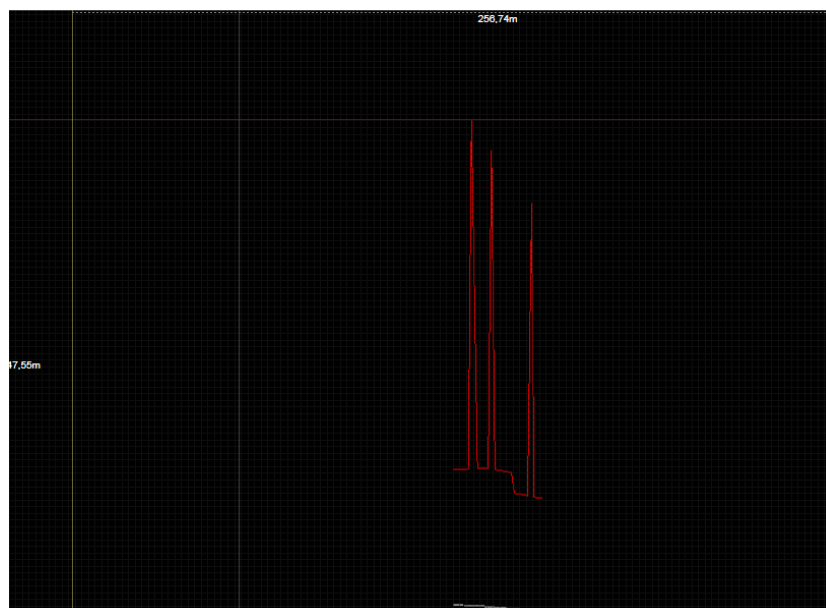
Figure 151: LiDAR profile

13.6.1.10 *Mouse guides*

This tool [icon] is a switch to show and hide the mouse guides.
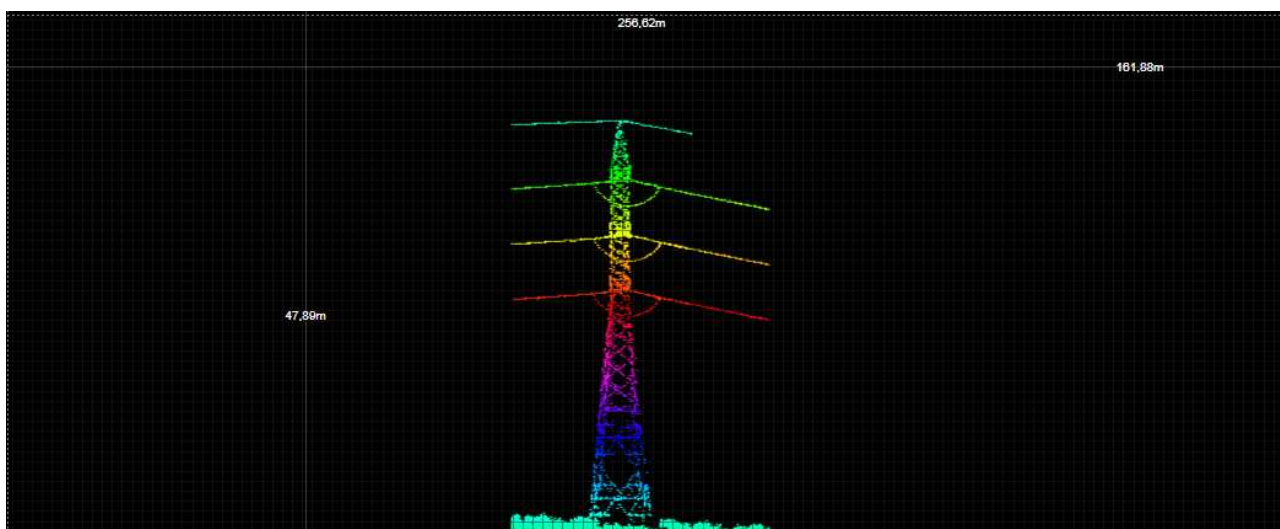
Figure 152: Mouse guides on

If this button is enabled, the mouse guides will be displayed in the LiDAR viewer; if the button is disabled the mouse guides will be hidden

13.6.1.11 *LiDAR View Grid*

By default, the LiDAR view grids are enabled, If for any reason it is important to hide the rules, next button [icon] of the toolbar must be pressed.

This button turns on and off the LiDAR view grids.
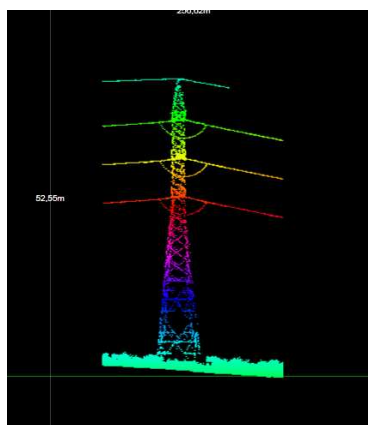
Figure 153: Grids off

13.6.1.12 *Statistics*

When a LiDAR profile is made, by default, in the right lower corner of the LiDAR viewer appears the statistics.

These statistics are dynamics, when the mouse is moved across the LiDAR view the stats are changed.

Next tool [icon] is used to show and hide the stats
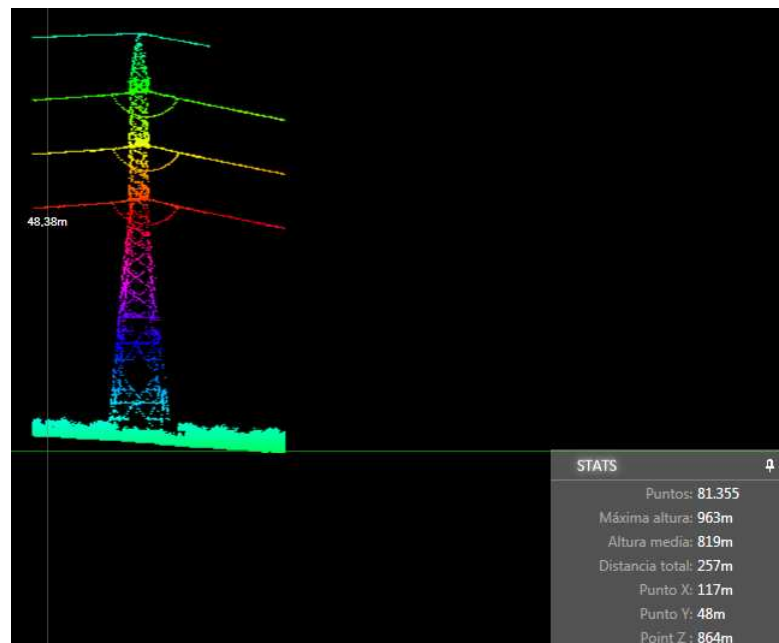
Figure 154: Stats on

13.6.1.13 *Max/Min lines*

This tool ![icon] shows and hides the maximum and minimum lines (horizontal and vertical direction)
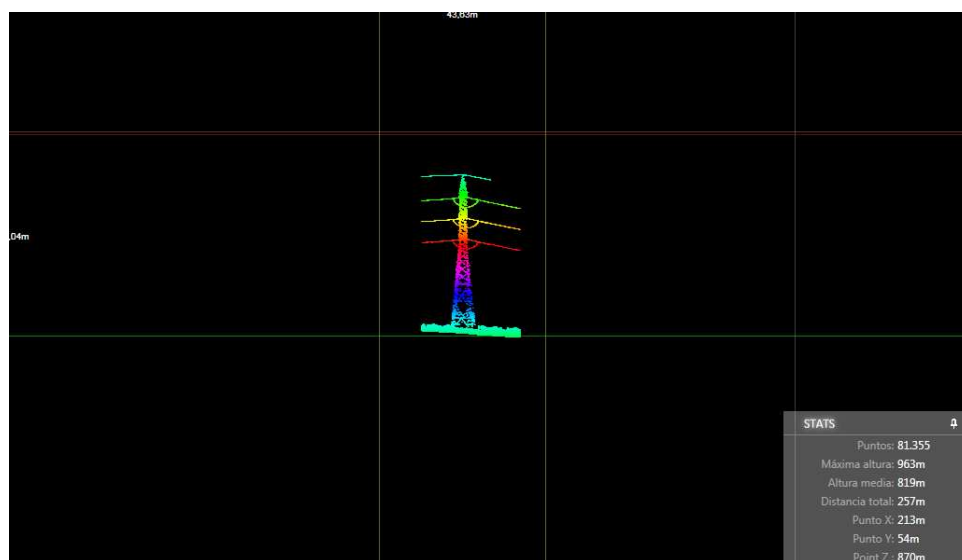
Figure 155: Max and Min lines

These lines can be moved. The line must be dragged from the current position, and dropped to the final position.

13.6.1.14 *Point Size*

In the toolbar there is an slice to change the LiDAR point size.

Clicking in the slice the point size is selected.
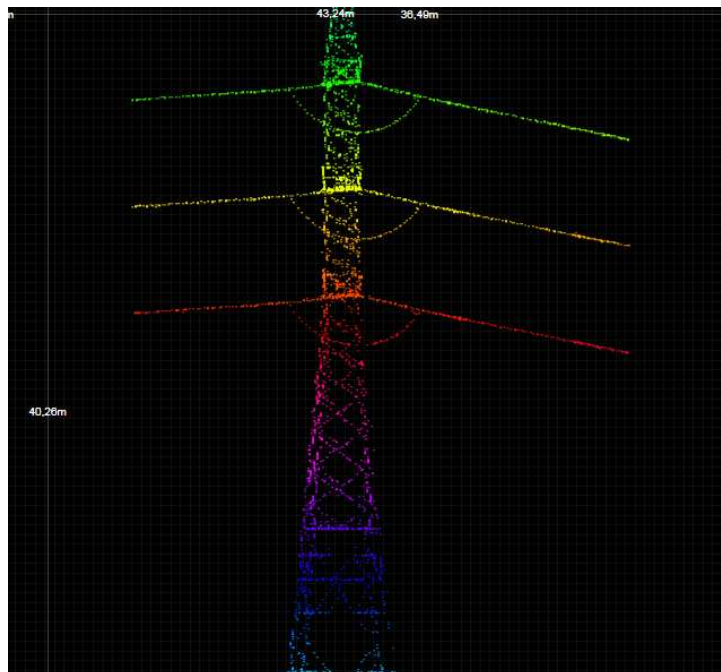
Figure 156: LIDAR point size 1
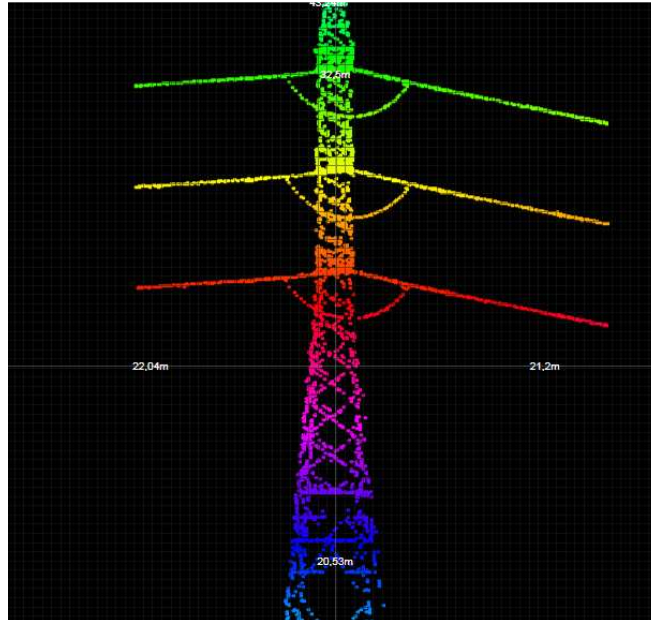
Figure 157: LIDAR point size 3

13.6.1.15 *Metadata*

This tool [i] shows and hides the LiDAR metadata on the screen.

14   Image tools

As described in Chapter 6, Blom Libraries include a collection of discrete images. These images can be:

- NADIR
- Oblique
- Ortho

In addition Data Sources also provide continuous (mosaic) images.

BlomURBEX[TM] only includes Oblique images and the continuous mosaic of vertical and orthorectified obliques.

BlomDESKTOP Viewer[TM] lets you easily manage this collection of images. Here you will learn to:

- Open images in a separate window
- Search the collection of images

- Export images
- Print images

14.1 Opening images in a new window

To open an image in a new window, right-click on the desired point on the image and select the appropriate menu option:

- **Open oblique image in new window:** you can select the desired view (North, South, West, and East). The oblique image will be extracted from the library or the server in a new window in the current window Group.

- **Open mosaic imagery in new window:** you can select Ortho to open the vertical mosaic, or a view (N, S, E, W) to open the mosaic of orthorectified obliques on a new window in the current window Group.

- **Open vertical image in new window:** this option will open the individual Ortho image for the selected point (if available from the selected data sources) on a separate window in the current window Group.

- **Open Nadir image in new window:** this option will open the individual Nadir image for the selected point (if available from the selected data sources) in a new window in the current window Group.

14.2 Searching images

Because of the way oblique imagery is captured, the aircraft passes over the same point several times. This guarantees that for each point of the terrain, there may be up to 18 different images, because a single point may appear in different oblique images. BlomDESKTOP Viewer^{TM} manages these sets of images, from the available Data Sources, making it easy to navigate for the end user.

In addition, BlomDESKTOP Viewer^{TM} allows users to see all available images for any given point.

To do this, simply right-click on any point on a view and select the **Search Images** option and a view orientation (or **Any** for all available views). The following window will appear:
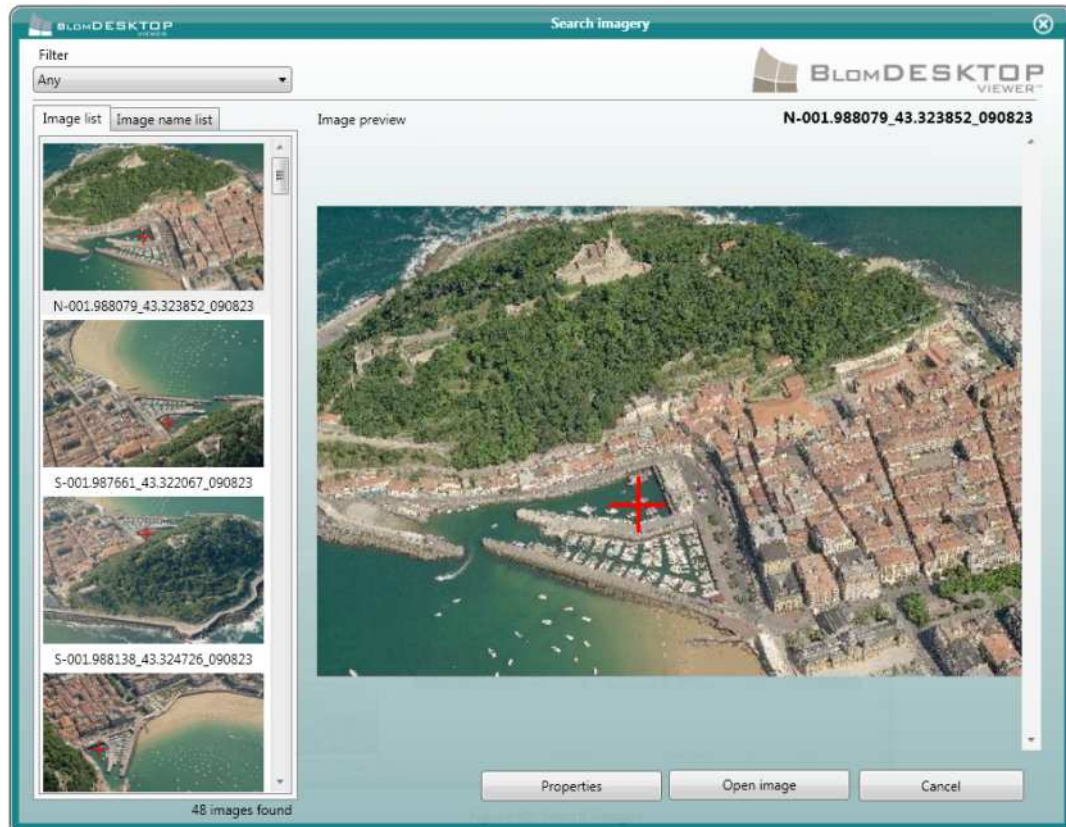
Figure 158: Search images

The left panel in this window shows all available views for the selected orientation. The currently selected view is previewed on the main area of the window, with a red cross showing the location of the initially selected point.

- The **filter** option at the top left area of the window allows you to alter the orientation of the selected images. So it is possible to change from one view to another within the window.

- The left panel shows an image list by default. You can click on the **Image Name List** tab to show a text list of the available images.

- The **Properties** button will show the metadata information for the previewed image (Image size, area, orientation, sensor position, etc.)

- The **Open Image** button will open the selected image on a new window in the current window Group.

Note that the red cross showing the location of the selected point will also appear on the original window. This cross will disappear if you perform any operation on the window such as zoom or scroll. In the case of obique images shown on a new window, the red cross will remain while the window is kept Blocked.

14.3 Exporting images

BlomDESKTOP Viewer^{TM} allows you to export the contents of the selected window to a georeferenced JPG.

To do this, simply position your view as required, right-click on it and select the **Export** menu option.

Two options are available:

- **Export current viewport:** this will export the contents of the selected window as they are shown on screen.
- **Export entire image:** this option only works on discrete images and it will save the whole image to disk regardless of the visible portion of it on screen.

The **Save As…** dialog box will then appear, allowing you select the name and path to save the image.
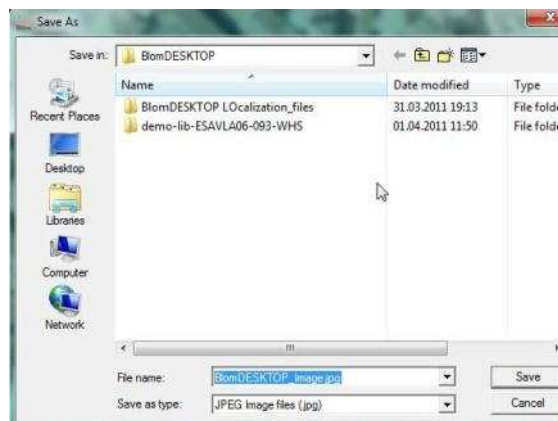
Figure 159: Exporting image

Future versions of BlomDESKTOP Viewer^{TM} will include additional formats and features for this function.

14.4 Exporting layers

Vector and annotation overlays can be exported to SHP, KML and GML files.

To export a given overlay, right-click on its name on the Dataview Explorer and select the **Export Layer…** option.

You will need to select first the desired projection for the resulting file from the available projection in the **Export Layer** dialog box.
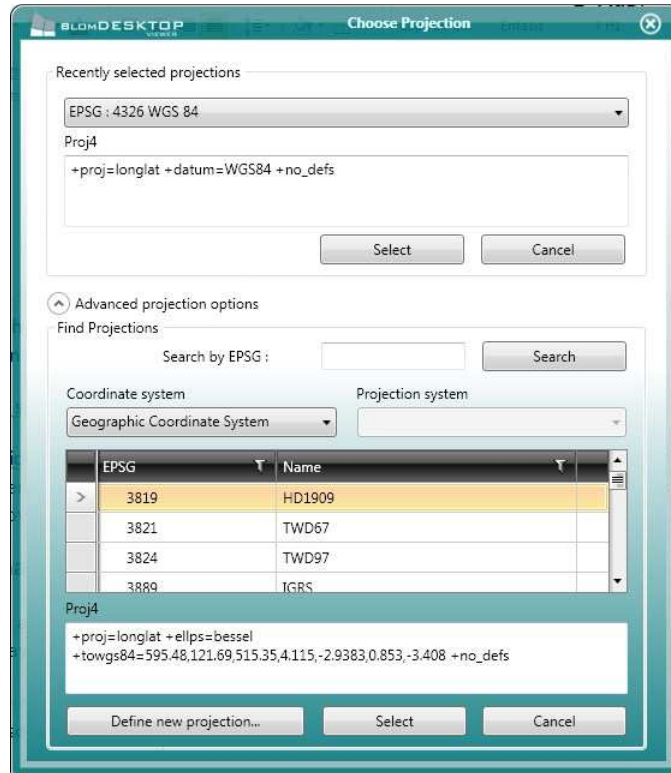
Figure 160: Select projection to export file

Once the desired projection is found, the **Save As**… dialog box will appear allowing you to provide a name for the file and file type from the different supported formats: SHP, KML, GML, MIF or DXF.
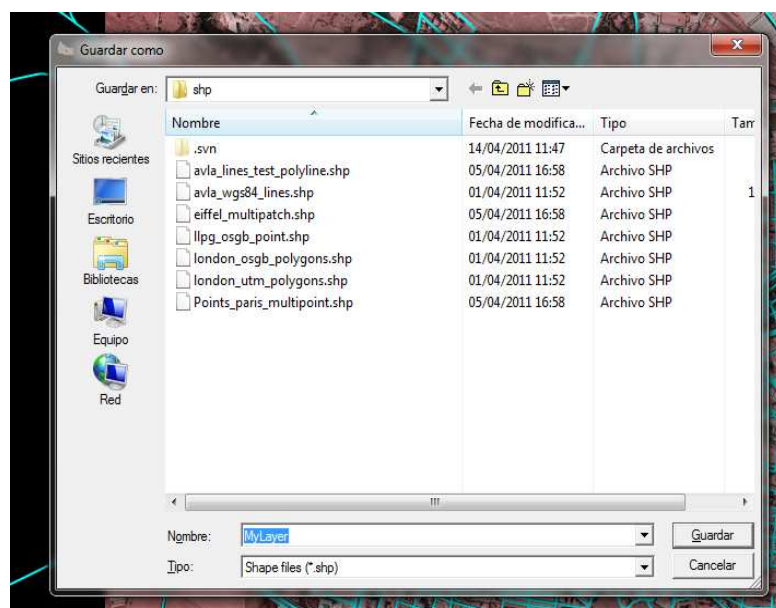
Figure 161: Exporting file to SHP

14.5 Printing

BlomDESKTOP Viewer^{TM} allows you to print the contents of the selected window. Printing options will depend on the features of the available printers.

In order to print the image, simply right-click on the desired window and select the **Print** option.

Depending on the image type contained in the dataview, there are three different ways to print the imagery:

- **Print current viewport:** this will print the contents of the selected window as they are shown on screen.
- **Print entire image:** this option only works on discrete images and it will print the whole image regardless of the visible section on screen.

The Print dialog box is a system dialog box so it will depend on your Windows version and the available printers you have set up.

- **Advanced print settings:** this option will only work on discrete images and ortho images. This option displays a dialog window with the options for printers and the ways to print the images.

14.5.1 Advanced Print Settings – Printing Ortho mosaic images.

When the image shown in the dataview is an ortho image the advanced print settings with next options:
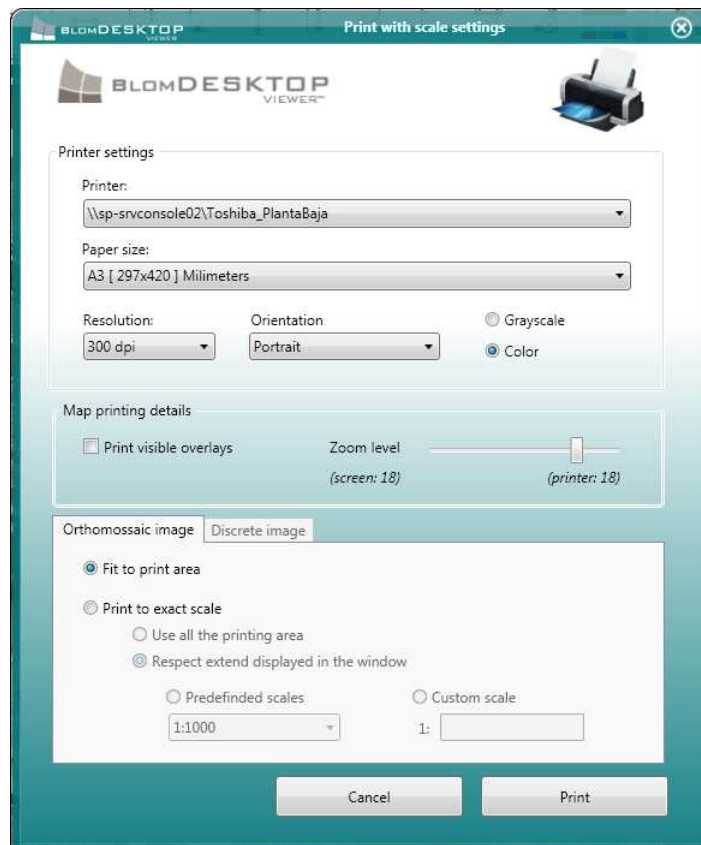
Figure 162 Ortho mosaic images dialog box

Printer: The drop down list contains all the printers the computer has configured.

Paper Size: This list shows the available paper size for each printer selected in the printer parameter.

Resolution: This shows the print resolution, in dots per inch (dpi).

Orientation: This configures whether the image will be printed in landscape or portrait orientation.

Grayscale, colour: This allows you to print in either grayscale, or in true colour.
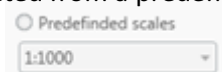
The **map printing details section** contains two elements:

- **Print visible overlays**: This option when selected will print all visible overlays loaded in the dataview.

- **Zoom Level**: The zoom level displays the current zoom onscreen. For example, if the image displayed in the dataview is at the zoom level 18, and another zoom level with more resolution is required, it is possible to select another zoom level (e.g. printer:20) by simply moving the slide bar. This action prints the current view extent in the dataview but with the zoom level indicated (e.g printer: 20). It is possible to print the image at a different resolution to the one shown currently on screen.

The ortho mosaic image printing option allows two ways to print the image:

- **Fit to print.** The image is scaled to the paper size keeping the image proportions (height and width).

- **Print to exact scale.**

  • The scale must be selected from a predefined list.

  • It is also possible to define a custom scale through a number writing this number in the text field of the custom scale

When the scale is chosen one of these options must be selected.

  • **Use all printing area.** If the scale selected does not fill the whole of the paper, this option will increase the image to fill the whole paper size.

  • **Respect extend displayed in the window.** This is the opposite of the **Use all the printing area** option. In this case there might be white areas around the image because the scale selected isn't large enough for the image to fill the whole page. The objective is to print only the image contained in the dataview.

14.5.2 Advanced Print Settings – Printing discrete images.

When printing a discrete image the following Advanced Print Settings shows are available:
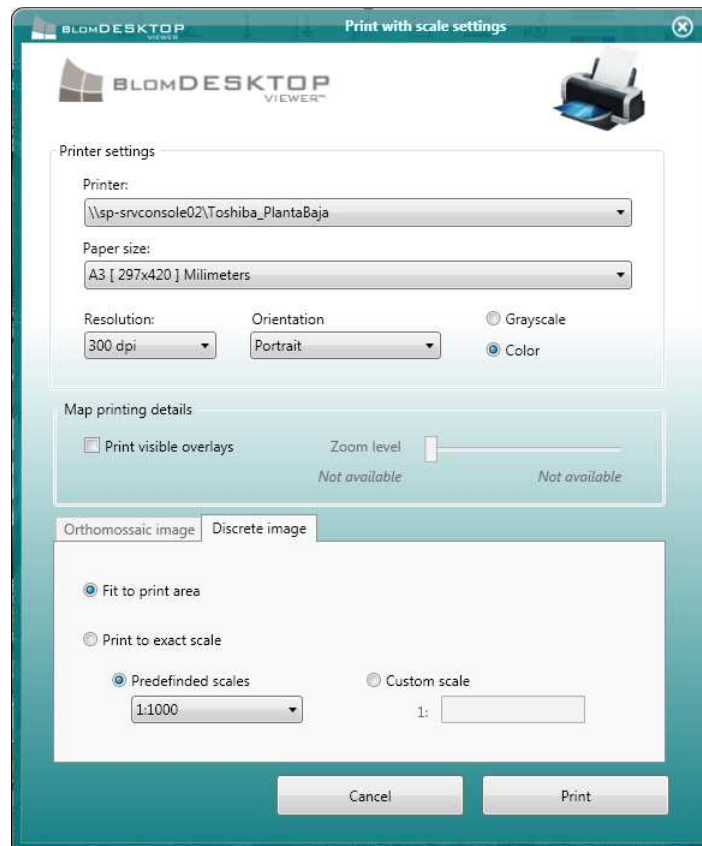
Figure 163 Discrete images dialog box

When selected, these options are disabled

- Zoom level section
- Ortho mosaic image.

If printing discrete image is enabled, it will only have two options, these are:

- Fit to print area. (Described in the previous section)
- Print to exact scale.

In both cases (discrete and ortho mosaic) the predefined scales are in a close relation to the paper size where the image will be printed.

Note - If the image is bigger than the printing area, the following option will appear to notify the user that the image will be truncated (clipped).
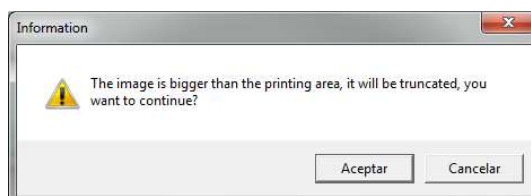
15   Customising your environment

15.1 BlomDESKTOP Viewer^{TM} Settings

The overall behaviour and preferences of BlomDESKTOP Viewer^{TM} windows can be controlled in the Settings dialog box. You can find this in the **Settings->Preference…** menu.
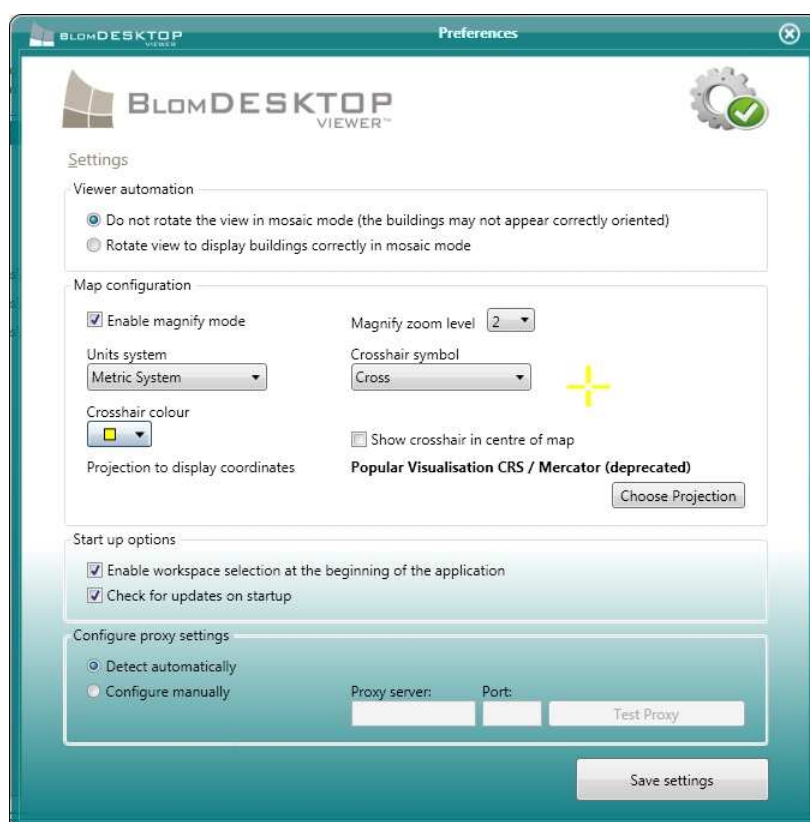
Figure 164: BlomDESKTOP Viewer™ Preferences

The following options are available:

- Image rotation mode selector

- Magnifying tool options

- Selection of Unit System for measurements

- Activation of crosshair on main window and selection of colour and symbol.

- Projection to display coordinates in

- Enabling/disabling workspace selection (splash screen) on start-up

- Checking updates at start-up

- Manual or Automatic proxy configuration

15.1.1 Oblique orientation

Oblique images have four possible orientations, depending on the direction they were captured (N, S, E, W). While the images can be displayed in their 'correct' orientation, this can be confusing for the user as the buildings may appear rotated. The behaviour of BlomDESKTOP Viewer[TM] regarding the visualization of orthorectified oblique images can be controlled with the first set of options in the Settings dialog box.

- **Do not rotate the view in mosaic mode (the buildings may not appear properly oriented):** This option will display the north in the upper side even if the map is showing mosaic view in south/east/west orientation.

- **Rotate view to display buildings properly in mosaic mode:** This option will rotate the map accordingly in mosaic mode in order to show the buildings properly (i.e., roofs pointing 'upwards') even if the map is in south/east/west orientation.
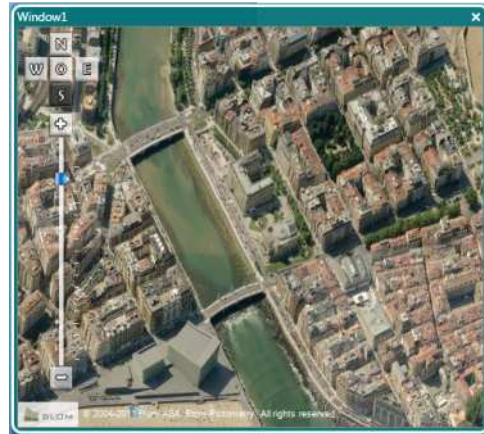
15.1.2 Magnifying tool options

The magnifying tool has been described in section 5.5. It is enabled by default but you can deactivate it by deselecting the **Enable Magnify mode** checkbox.

The default magnify zoom level is set at 2. You can also modify this using the dropdown list on the right.

15.1.3 Selection of unit system in measurements

When you perform any measurement in BlomDESKTOP Viewer™ the default units are meters. You can select the unit system from the Preferences dialog box. Available options are:

- **Metric system:** Measurements in meters
- **Imperial system:** Measurements in feet

15.1.4 Projection to display coordinates

The lower right corner of the BlomDESKTOP Viewer™ screen will show the coordinates of the last point clicked on the active window. Default projection system is Latitude-Longitude (EPSG:4326). This can be changed in here by clicking on the **Choose Projection…** button and selection a new one from the list of available projections.

15.1.5 Crosshair

This option will show a crosshair in the centre of the window. This crosshair provides the location of the centre of the current view in any other synchronized window that you may also have. This way, it is possible to check the location of the centre of the current view when working with different views, dual view or multi view.

From the setting dialog you can:

- Show/hide the crosshair just by checking/un-checking the **Show cross in centre of map** option.
- Select the Symbol to use as crosshair from the list of symbols under the **Crosshair symbol** option.
- Select the colour of the crosshair from the colour list under the **Crosshair colour** option.

15.1.6 Enabling workspace selection at start-up

As described on section 4.1.1, BlomDESKTOP Viewer™ will launch asking you to select a workspace to open. This is the default option.

If you want to override this behaviour, just unselect the **Enable workspace selection at the beginning of the application** checkbox.

Check it again to return to the default behaviour.

15.1.7 Checking updates at startup

By default, this option is selected so BlomDESKTOP Viewer™ will search for new versions at startup. If you want to change this behaviour just check/uncheck this option as needed.

15.1.8 Manual/Automatic proxy configuration

This option is used in case the proxy server is not automatically detected due to the use of configuration scripts. If that is the case, select the manual option and type the needed proxy parameters.

15.2 Change language

Default language for BlomDESKTOP Viewer^{TM} is English, although additional language packs are provided:

- Spanish
- French
- Romanian
- Finnish
- Norwegian
- Danish
- Italian

To select a new language pack, go to **Settings -> Change Language ->** and select the desired language pack.

BlomDESKTOP Viewer^{TM} will need to be restarted to apply these changes and will ask for confirmation prior to proceed.

Contact your local Blom representative for instructions on how to add additional languages to BlomDESKTOP Viewer^{TM} if required.

16 BlomDESKTOP Remote Invocation™

16.1 Introduction

Version 2.1 of BlomDESKTOP Viewer™ includes a new, powerful feature called BlomDESKTOP Remote Invocation™. This feature allows users to execute actions inside BlomDESKTOP Viewer™ by sending commands to a port opened by the program. This way you can control remotely the behavior of the tool making it possible to open it under certain initial conditions for data displaying or the like.

Only the first BlomDESKTOP Viewer™ program instance in execution can receive remote actions. Only one client is allowed simultaneously.

BlomDESKTOP Viewer™ starts a socket server if is the first running instance and then waits to receive further commands. The application is also ready to receive commands as arguments on start-up.

The rest of this chapter is intended for programmers, developers or advanced users, as it covers the different available commands and some examples of configuration.

16.2 Available Commands

Version 2.1 of **BlomDESKTOP Remote Invocation™** has only a valid command. This command allows you to place the first of the windows in the workspace pre-loaded in a specified zoom level and coordinates.

16.2.1 Command Syntax

```
<?xml version="1.0" encoding="utf-8"?>

<RemoteActions xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">

<RemoteActionsVersion>2.0.8</RemoteActionsVersion>

<WorkspacePath>C:\Users\MyUser\Documents\BlomDESKTOP
Viewer\Workspaces\defaultworkspace316.wksx</WorkspacePath>

<InitialLatitude>279020.1218014881</InitialLatitude>

<InitialLongitude>3061526.4340042621</InitialLongitude>

<ZoomLevel>5</ZoomLevel>

<MapOrientationType>Ortho</MapOrientationType>
```

```
<MapViewType>Mosaic</MapViewType>

<Proj4></Proj4>

</RemoteActions>

<!-- END DATA -->
```

16.2.2 Valid Command Fields

RemoteActionsVersion: Remote actions target BlomDESKTOP Viewer™ version. (Informative only, nothing to do)

WorkspacePath: Path for workspace files to be opened by BlomDESKTOP Viewer™.

InitialLatitude: Starting Latitude to open the map.

InitialLongitude: Starting Longitude to open the map.

ZoomLevel: Initial Zoom Level to set the map window.

Proj4: Coordinates in a format compatible with the Proj4 definition. If Proj4 is empty, Spherical Mercator is assumed
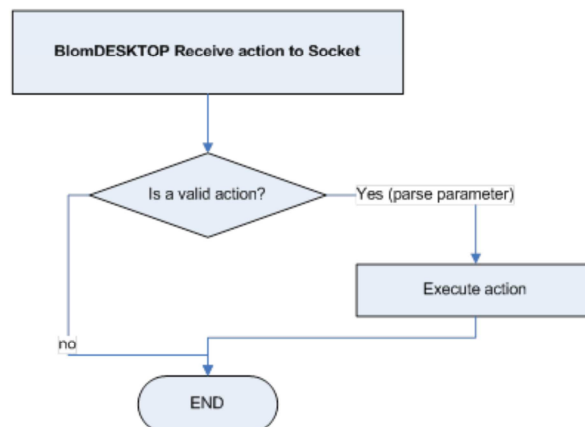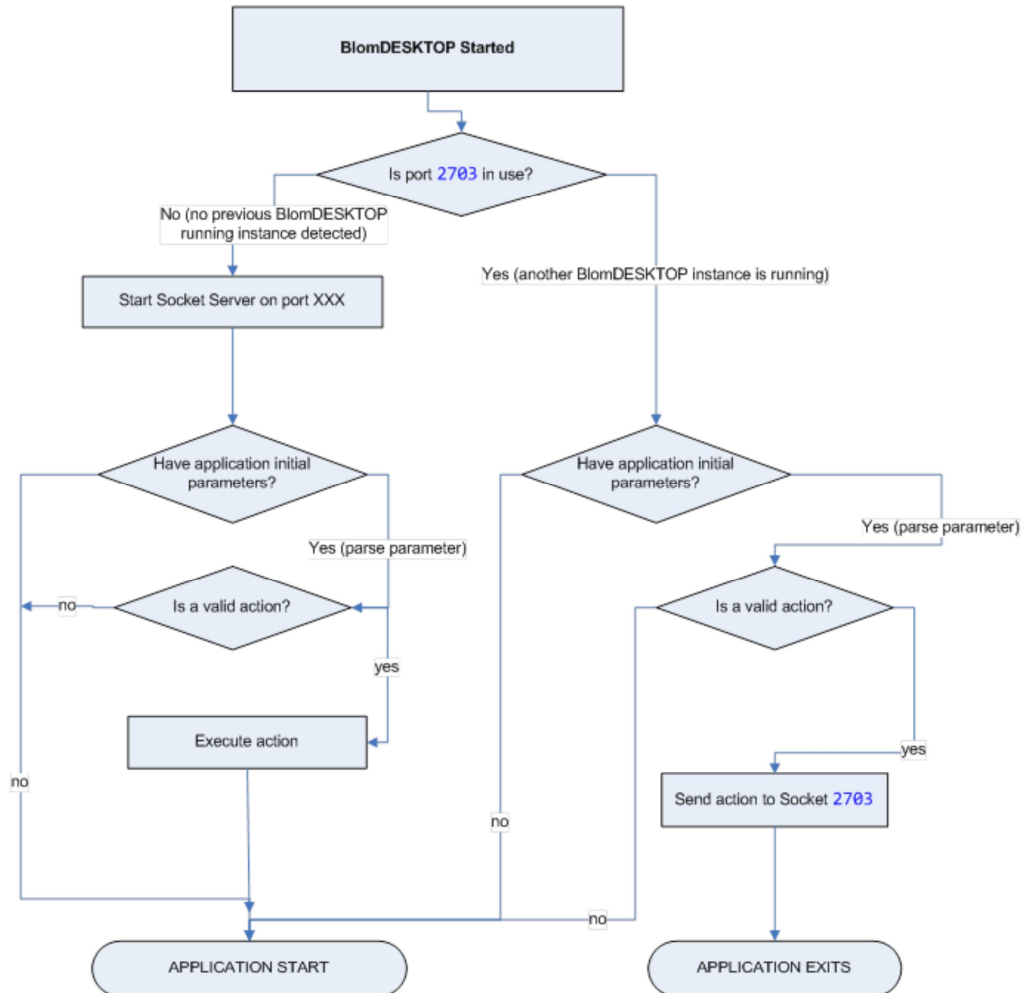
MapOrientationType: Valid types are [Any, Ortho, North, South, West, East]. Default value is *Ortho*.

MapViewType: Valid types are [Mosaic, Discrete]. Default value is *Mosaic*.

<!-- END DATA --> Needed to tell to the socket server that actions ends and can process it.

16.2.3 Process Flowchart

Next page shows the process flowchart for the Remote Invocation command.

16.3   Testing BlomDESKTOP Remote Invocation™

You can use PuTTY to test the BlomDESKTOP Remote Invocation™. PuTTY can be downloaded from http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

Once installed, you'll need to configure PuTTY as shown on the image below.
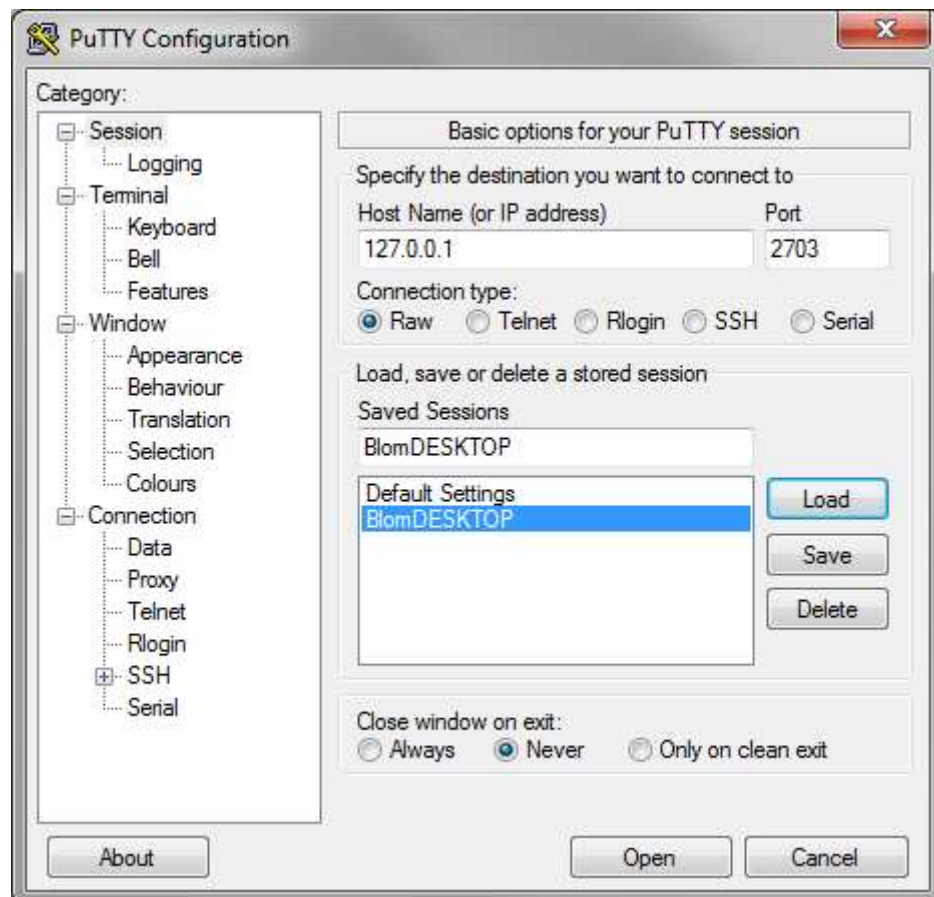
Figure 165: PuTTY Configuration

If the BlomDESKTOP Remote Invocation™, server is UP you will see the following server message

Figure 166: Server ready

You can now send commands to the server.

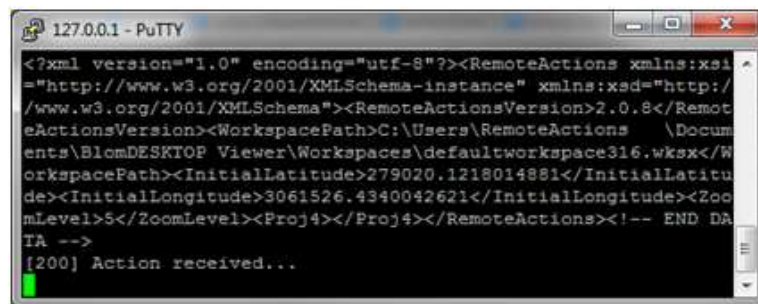If a valid command is detected, the server response with a [200] code, as shown below:

Figure 167: Valid Command Received

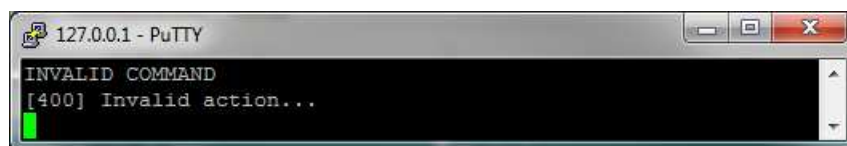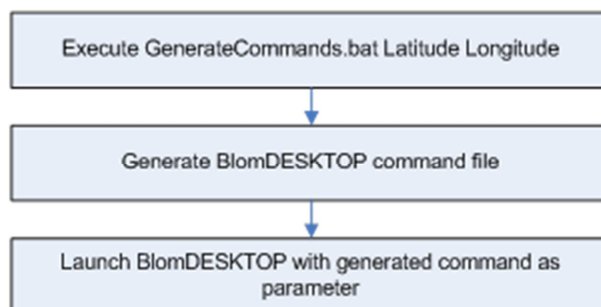However, if an invalid command is detected, the server will response with a [400] code

Figure 168: Invalid Command Received

16.4   Running BlomDESKTOP Viewer™ from a batch file

It is possible to create a batch file that receives coordinates as arguments and then creates a command file to launch BlomDESKTOP Viewer™. The flowchart should be:

Here you can find an example of a batch file that:

a)   receives coordinates as arguments,
b)   creates a command file with these arguments
c)   launches BlomDESKTOP Viewer™ *using* this generated command file.

```
@echo off

rem begin configuration *****************

set destination_path=%TEMP%

set workspace_path=C:\Users\MyUser\Documents\BlomDESKTOP
Viewer\Workspaces\defaultworkspace316.wksx

set blomdesktop_path=C:\Users\MyUser\Documents\Visual Studio
2010\Projects\BlomDESKTOP\v.1.2.1\2.0.0 (2011-07-
01)\BlomDESKTOP\BlomDESKTOP\bin\Release\BlomDESKTOP Viewer.exe

set zoom_level=6

set proj4=

rem valid values for map_orientation_type: Any,Ortho,North,South,West,East

set map_orientation_type=West

rem valid values for map_view_type: Mosaic,Discrete

set map_view_type=Mosaic
```

```
rem end configuration ***************

set remote_actions_version=2.0.8

set destination_filename=bd.launcher



if [%1]==[] goto usage

if [%2]==[] goto usage



set
destination_full_name=%destination_path%%time:~0,2%%time:~3,2%%time:~6,2%%
time:~-2,2%_%date:~-10,2%%date:~-7,2%%date:~-4,4%%destination_filename%

echo Generating file: %destination_full_name%

rem generate file

echo ^<?xml version="1.0" encoding="utf-8"?^> >%destination_full_name%

echo ^<RemoteActions xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"^> >>%destination_full_name%

echo
^<RemoteActionsVersion^>%remote_actions_version%^</RemoteActionsVersion^>
>>%destination_full_name%

echo ^<WorkspacePath^>%workspace_path%^</WorkspacePath^>
>>%destination_full_name%

echo ^<InitialLatitude^>%1^</InitialLatitude^> >>%destination_full_name%

echo ^<InitialLongitude^>%2^</InitialLongitude^> >>%destination_full_name%

echo ^<ZoomLevel^>%zoom_level%^</ZoomLevel^> >>%destination_full_name%

echo ^<MapOrientationType^>%map_orientation_type%^</MapOrientationType^>
>>%destination_full_name%

echo ^<MapViewType^>%map_view_type%^</MapViewType^>
>>%destination_full_name%
```

```
echo ^<Proj4^>%proj4%^</Proj4^> >>%destination_full_name%

echo ^</RemoteActions^>^ >>%destination_full_name%

echo ^<!-- END DATA --^> >>%destination_full_name%



echo START

start "" "%blomdesktop_path% " "%destination_full_name%"

@echo Done!

goto :eof

:usage

@echo Invalid parameters...

@echo Usage: %0 ^<Latitude^> ^<Longitude^>

pause

exit /B 1
```

16.4.1 Configuring the Batch file

The following configuration options can be used in the example above:

- **destination_path:** path where the output command file is generated
- **workspace_path**: path of workspace that will be included in output command file
- **blomdesktop_path:** path where BlomDESKTOP Viewer™ is installed and will be launched from when the output command file is generated
- **zoom_level**: level of the desired zoom that will be included in output command file
- **proj4**, proj4 definition of coordinates provided to batch file as arguments. If not provided, default is Spherical Mercator
- **map_orientation_type**, desired map orientation type [Any,Ortho,North,South,West,East]
- **map_view_type**, desired map view type [Mosaic,Discrete]

16.5   Limitations

The actions will be executed in the first window available in the loaded workspace (2D / 3D)

16.6   Starting BlomDESKTOP Viewer™ with command-line arguments

Starting from version 2.1, it is possible to launch BlomDESKTOP Viewer™ with two kinds of parameters:

- Path for a valid command file
- Path for an existing workspace file

17   The BlomDESKTOP Viewer^{TM} Help menu

The BlomDESKTOP Viewer^{TM} **Help** menu includes three options that are described below.

17.1   Open BlomDESKTOP Viewer^{TM} user manual

Selecting this option will open the PDF version of this manual. This option requires Adobe Reader™.

17.2   What's new?

This option will show a text file detailing all versions of BlomDESKTOP Viewer^{TM} and their new features.

17.3   Check now for updates…

Selecting this option will verify if there is a new BlomDESKTOP Viewer™ version available. If that is the case, it will be downloaded for installation.

17.4   About BlomDESKTOP Viewer^{TM}…

This option opens the **About** dialog that shows:

- Current version and revision number of BlomDESKTOP Viewer^{TM}.
- Versions used of the .NET Framework and NatBDSK
- Application code string

Remember that the Application code is needed to obtain your valid license for BlomDESKTOP Viewer^{TM} (see Section 2.3).