StereoCAD 2.0.2

**Professional software for
inspection
measure
Draw 3D vectors**

**INTRODUCTION
FOR BASIC USAGE**

Rev. 1, December 2015

StereoCAD 2.0.2
INTRODUCTION FOR BASIC USAGE

INDEX

HARDWARE - WHAT IS ESSENTIAL FOR STEREO VIEW ?

option A – for professional stereoscopic view

⚐ **PC:** Operating system: Windows 7/8/8.1 (64 bit)
CPU: i3/ i5/ i7 or equivalent
RAM: 4 GB or more

⚐ **Monitor LED 3D** (e.g. BENQ XL2411Z LED 3D 24" Full HD) or similar that support NVidia 3D vision kit	⚐ **NVidia Quadro family** (e.g. K410, K620..)	⚐ **NVidia 3D Vision 2 Kit**	⚐ **Kensington Expert Mouse Trackball***

opzione B – for professional stereoscopic view

⚐ **PC o laptop** Operating system: Windows 7/8/8.1 (64 bit)
CPU: i3/ i5/ i7 or equivalent
RAM: 4 GB or more

⚐ **3D TV with glasses**	⚐ **Kensington Expert Mouse trackball***

* Trackball is necessary to set the elevation for professional project. Otherwise the stereoscopic view works with the mouse as well. If you have another kind of trackball contact Menci Software support in order to evaluate its compatibility.

The anaglyphic and monoscopic window is always available. In these cases, you do not need additional hardware.
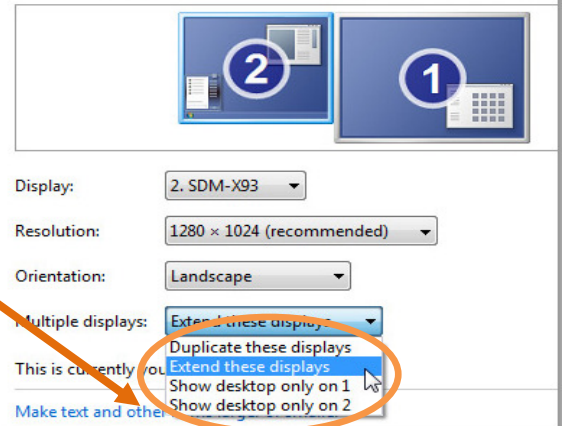
HARDWARE - SET UP?

3D TV - HOW TO SET UP MULTIPLE MONITOR

Right-click any empty area of your desktop, and then click **Screen resolution**.

Click the **Multiple displays** drop-down list, and then select **Extend these displays**, or **Duplicate these displays.**
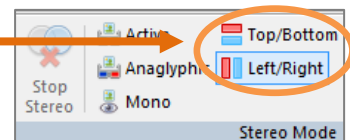
In Windows 7, it is easy to add a second monitor by using the new hotkey **Win+P**

In stereoCAD, click on left/right or top/bottom stereo mode

On the 3D television choose left/right or top/bottom as well

TRACKBALL BUTTON CONFIGURATION

MOVE POINTER TO THE CENTER **button** at the **top right**) when you click this button,you can move the point indicated by the cursor in the middle of the window.

CHANGE PAIR
(**button** at the **top left**) click to change stereo-pair

CURSOR SPEED (**ferrule**) moving the ferrule you can change the cursor speed

TO FIX ELEVATION DATA MANUALLY (**sphere**)
You can manually manage the elevation by moving the sphere in the direction left/right or top/bottom

ON SNAP ELEVATION
(**button** at the **bottom left**) for enabling/disabling OSnap
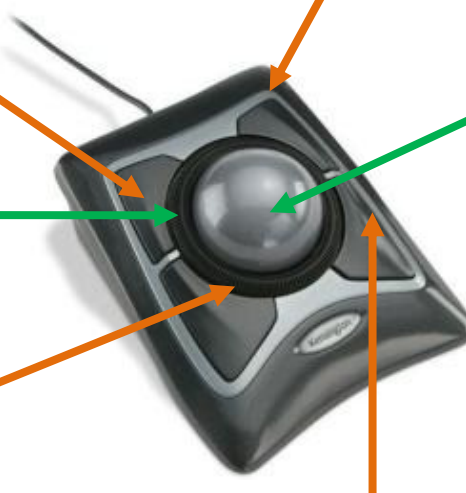
TO FIX ELEVATION AUTOMATICALLY (**button** at the **bottom right**) You can change automatically the elevation by clicking this button. if appears a red ring, it means that the elevation is not fixed. Otherwise if a green ring appears, it means that the automatically elevation is done.

PRELIMINARY INTRODUCTION

StereoCAD is a stand-alone software for:
- inspection of stereoscopic model in continuous images roaming;
- 3D measure;
- Draw 3D vector with professional CAD tools.

StereoCAD supports project generated by APS, PhotoScan, PostFlight Terra 3D, uMap or a generic orientation software. furthermore, you can also import images with external data orientation taking from every other software.

This document is a basic introduction for stereoCAD. You can find more information in the main manual on stereoCAD software (HELP/TUTORIAL)

HOW TO CREATE A NEW STEREOCAD PROJECT or
HOW TO OPEN A CURRENT ONE
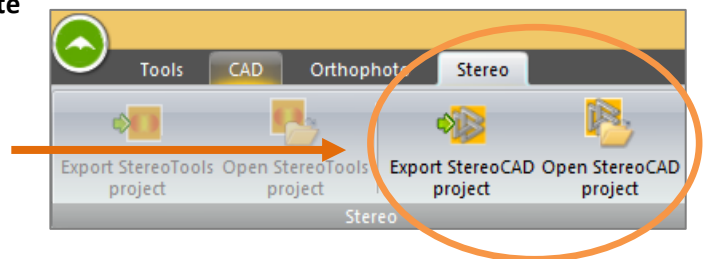
A. **if you have a stereoCAD project:**
   click Open
   search and select the concerned project
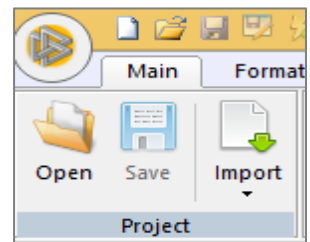
B. **if you have an APS project and you want to create a new stereoCAD project:**
   from APS you are able to export the project directly to stereoCAD software.
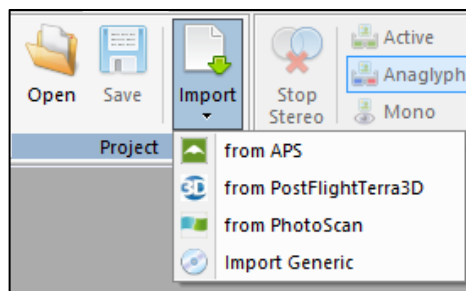
   APS is Menci's Aerial Photogrammetry Software

C. **if you want to create a new project starting a progect imported from other photogrammetric software:**
   StereoCAD supports project creation from data exported by APS, PhotoScan, PostFlight Terra 3D or a generic orientation software.

   FILE IMPORT:
   click IMPORT
   select the source

Then there are different import procedures:

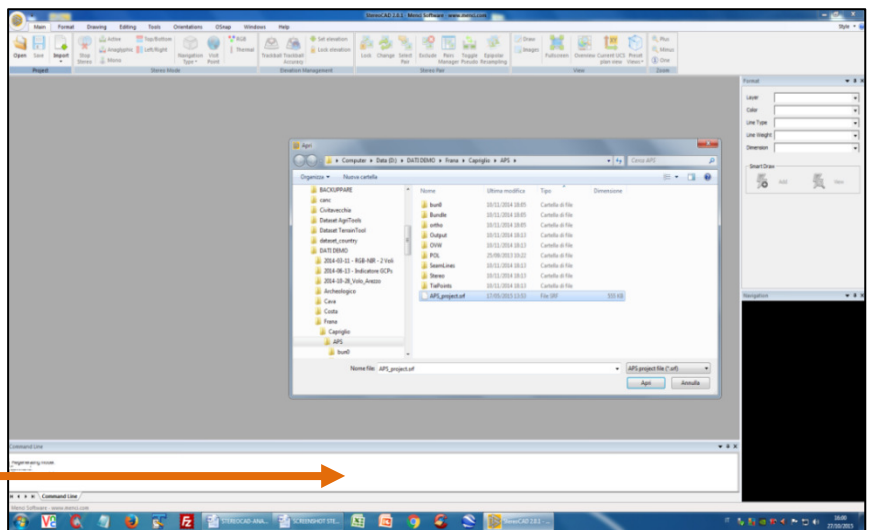## --> from APS, from uMap and from PostFlightTerra 3D

--> from PhotoScan

--> from a generic software

--> from APS, from uMap and from PostFlightTerra 3D

SEARCH THE PROJECT:
select the .srf APS project file
or
select the .p4d project file
or
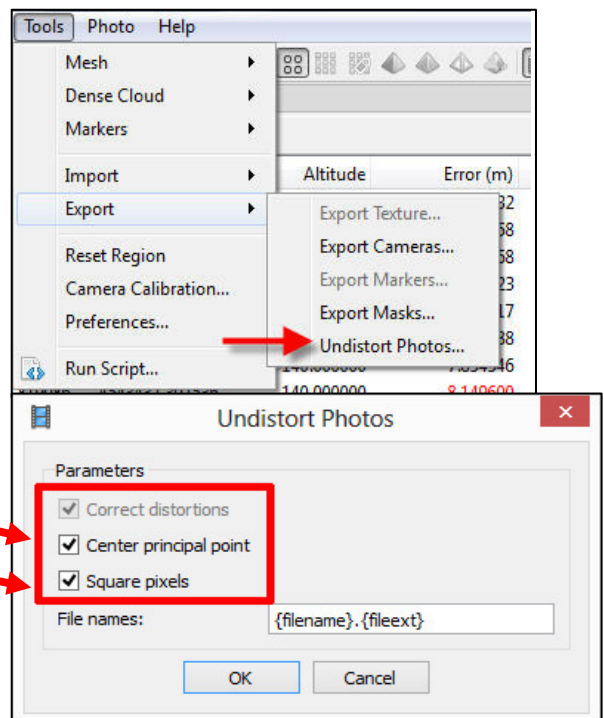select the .ump uMap project file.

click OK to open the project

--> from PhotoScan

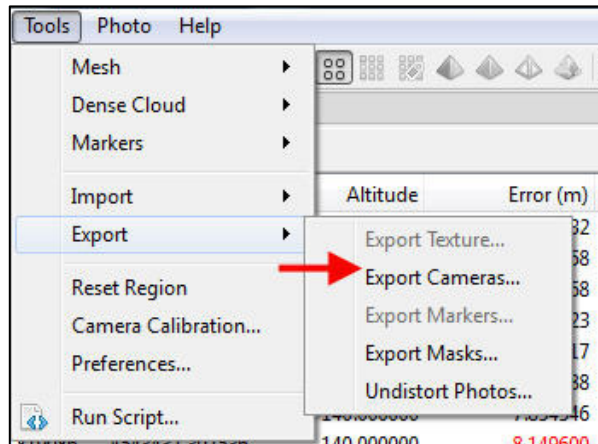Open your PhotoScan project and export undistorted images to a folder:

Tools > Export >Undistort Photos

select the option:
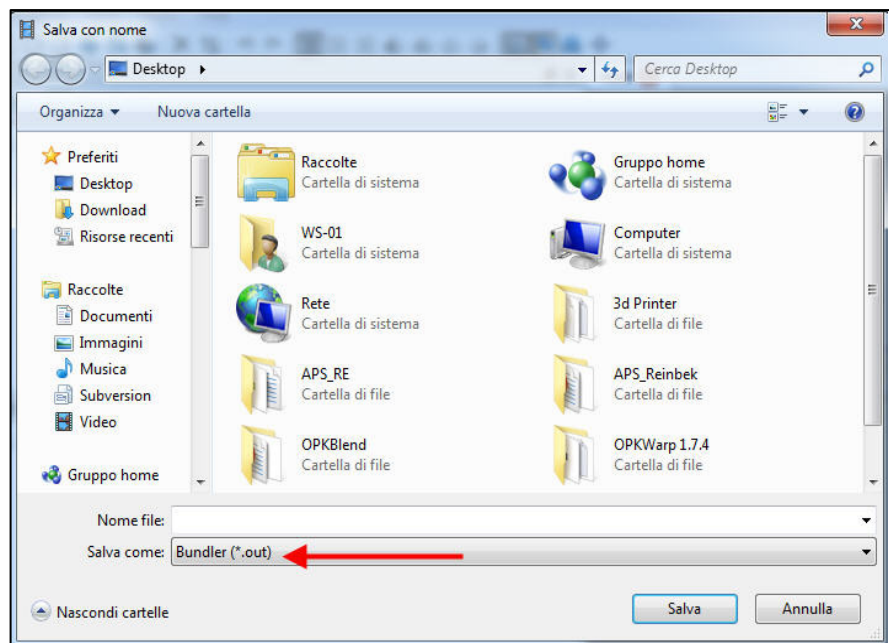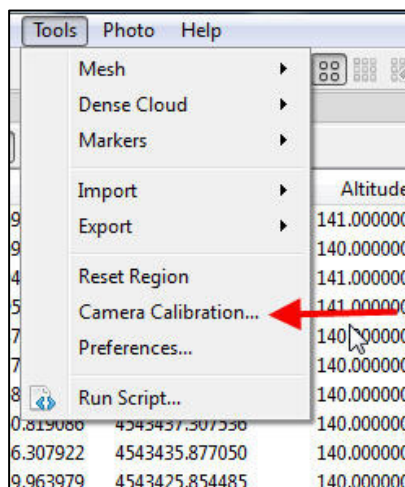- center principal point
- square point

Then export orientation data:
Tools > Export > Export Cameras
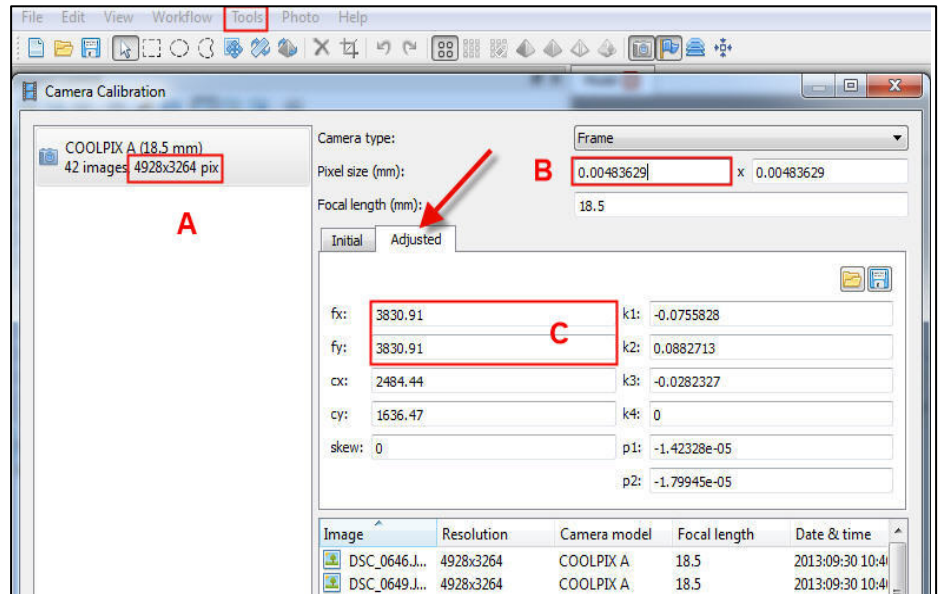

selecting the Bundler
.out file format

If you didn't it before, get the
camera passport data from
Tools > Camera Calibration

and switch to "Adjusted" tab

Open StereoCAD and start the New Camera Passport command. Now fill the form with data you can get by PhotoScan and save the .bcc Camera Passport.
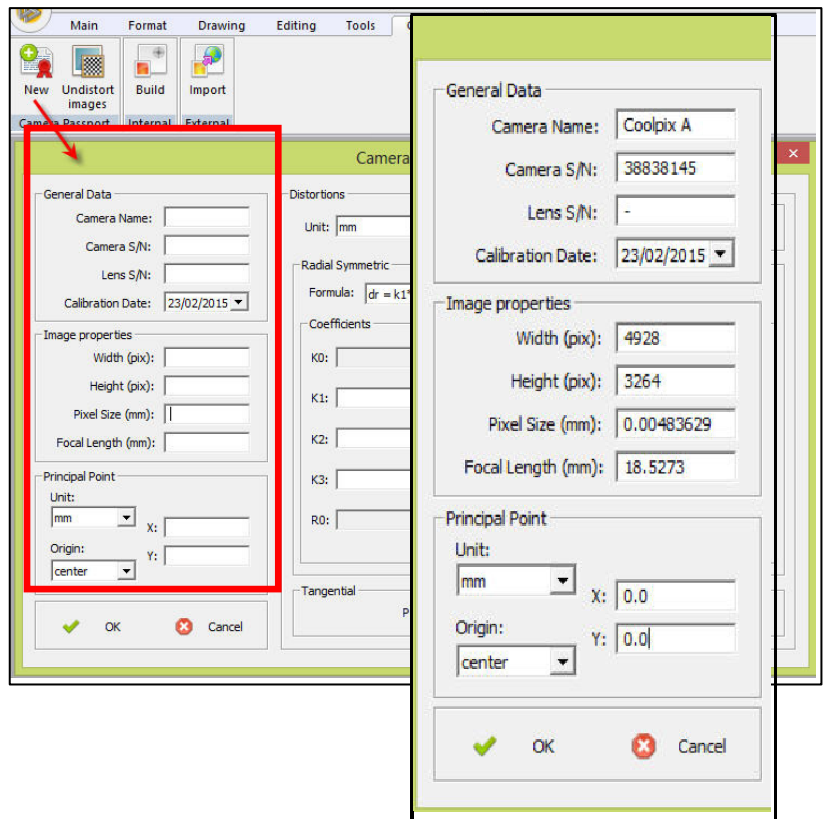In particular:
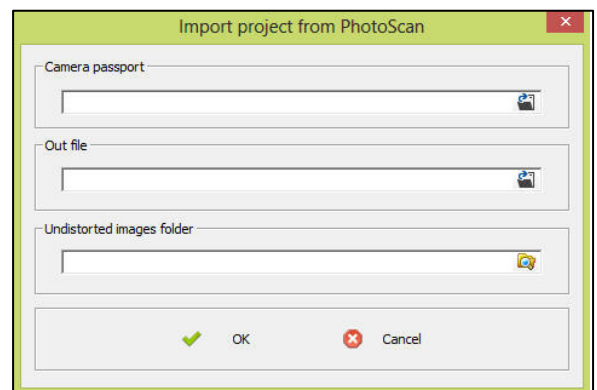- you can get Width and Height sizes in pixel from passport name (A);
- the pixel size from top box (B);
- the focal length in mm multiplying fx value (C) per Pixel Size value.
e.g. 3830.91x0.00483629 =18.5273
Let the principal points coordinates and distortions values to zero.

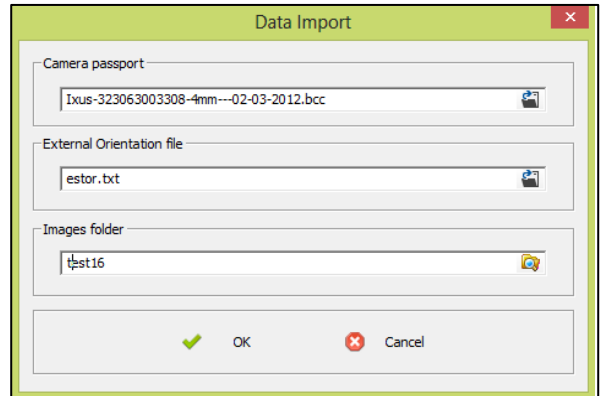Finally start "Import from PhotoScan" and input requested data:

--> *from a generic software*

Select a cvc/bcc camera passport file, an ASCII external orientation file and pick the folder where undistorted images are stored.

In the next step you have to confirm the external orientation text file parsing, by checking the fields' value.

Every image orientation has its X, Y, Z, OMEGA, PHI, KAPPA values stored line by line.
Values "separators" and "comments" are editable.
By clicking on column headers of upper "source" list you can exchange the column meaning and sign.

In the bottom list there is the result of data parsing. You can specify angles measurement unit (degree, radians, grads).

Finally assign a name and a template to the new project.
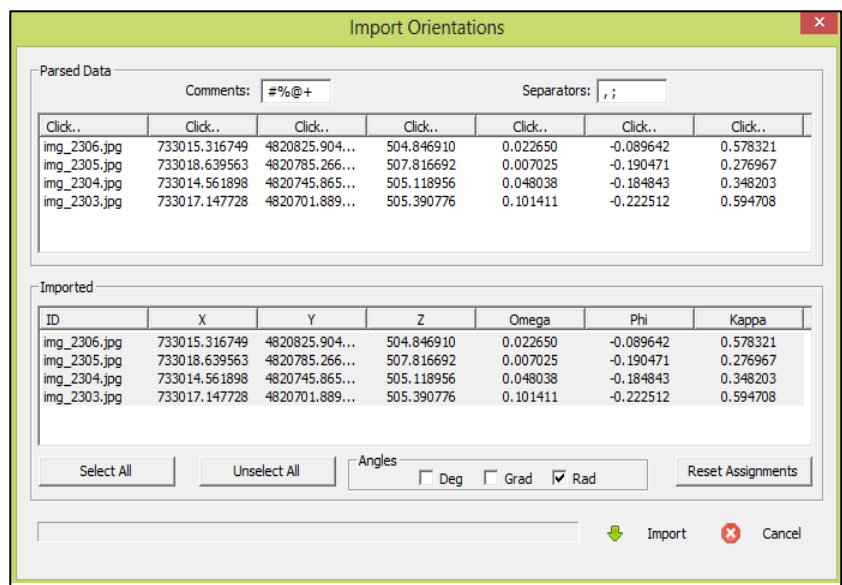
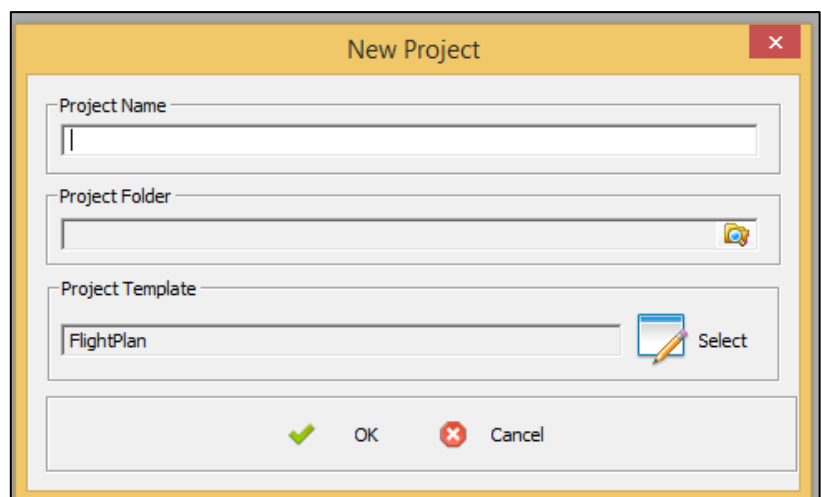
IMPORT STEPS - CONCLUSION

All procedures are completed when you indicates name and template for new project.

FIRST OF ALL, CREATE A NEW PROJECT:

writing the new name on "PROJECT NAME"

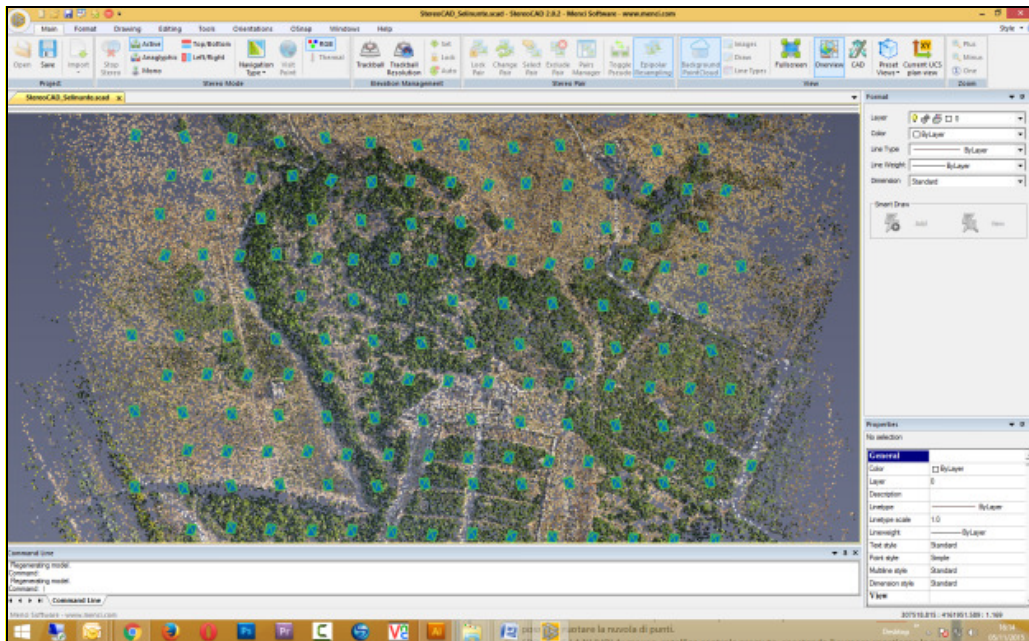"PROJECT FOLDER" - Click on the right icon to select the folder where to save your new project

"PROJECT TEMPLATE"
click on select button if you want to change the Default template

STEREOCAD, HOW IT WORKS? STARTING COMMAND

Once you open the project, you can see a point cloud as overview and you will be able to interact on it
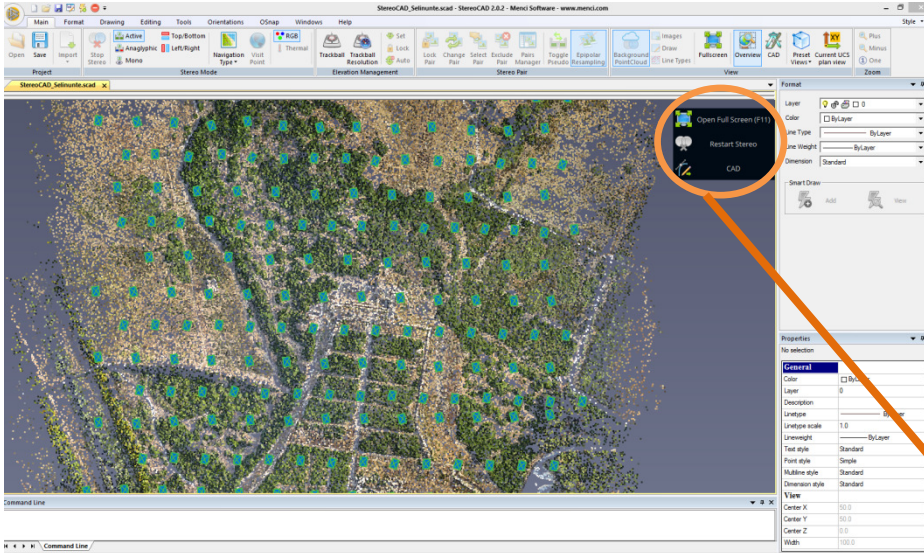

HOW TO INTERACT WITH THE POINT CLOUD

- OPEN STEREO VISION: **double-click** on the point cloud
- ZOOM: **right drag-and-drop**, moving up or down to zoom + or zoom -
- POINT CLOUD ROTATION: **drag-and-drop,** depress the left mouse button and, while keeping it depressed, move the mouse pointer to rotate the point cloud
- PAN - MOVE THE POINT CLOUD: **drag-and-drop** the mouse wheel. You can move the point cloud by moving the mouse while you drag and drop on the mouse wheel
- OPEN A SINGLE IMAGE: **double-click** on the camera position block e.g.:
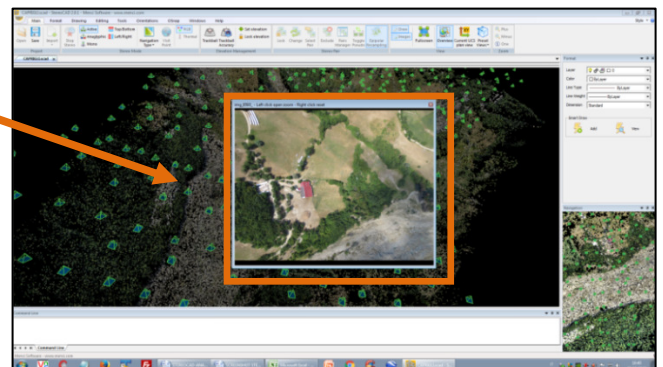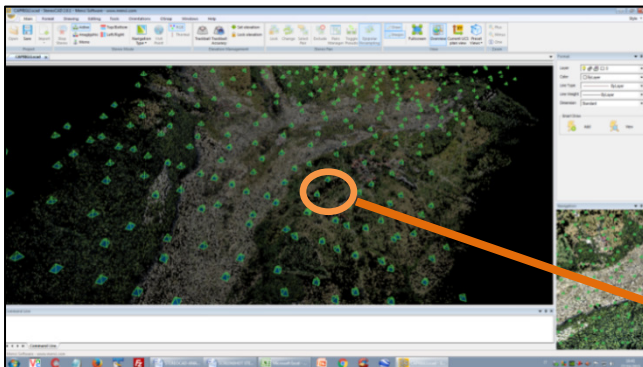
FLOATING CONTEXT FAST MENU ON THE MAIN WINDOW

In order to speed up the access to frequently called functions, a floating menu appears when you move the mouse cursor on the top-right and bottom-right corners of the main window.

On the top right corner you can open/close the full screen mode, restart the stereo vision, open/close the CAD view
(only if it is activated once before) and switch between overview and CAD window (only if stereo is not enabled).

HOW TO INTERACT WITH THE STEREOSCOPIC VIEW

- ZOOM: shift + wheel or floating menu
- SELECT: one click to select draws area
- PAN - MOVE BETWEEN THE STEREO PAIR: **drag-and-drop** the mouse wheel. You can navigate between the images by moving the mouse while you drag and drop on the mouse wheel. When you see the point cloud on the black background it means you have more stereo images (fig.1). Otherwise if you have total black background it means you are at the last stereo model (fig.2). e.g:
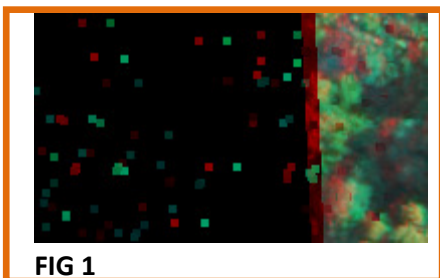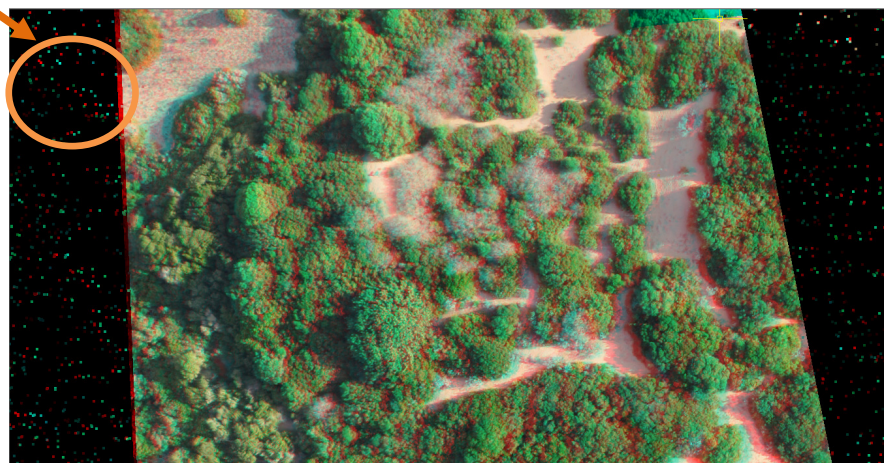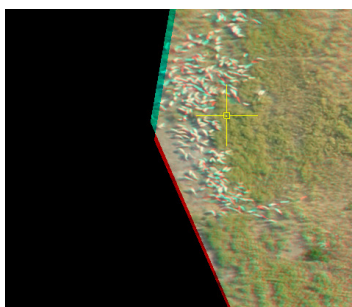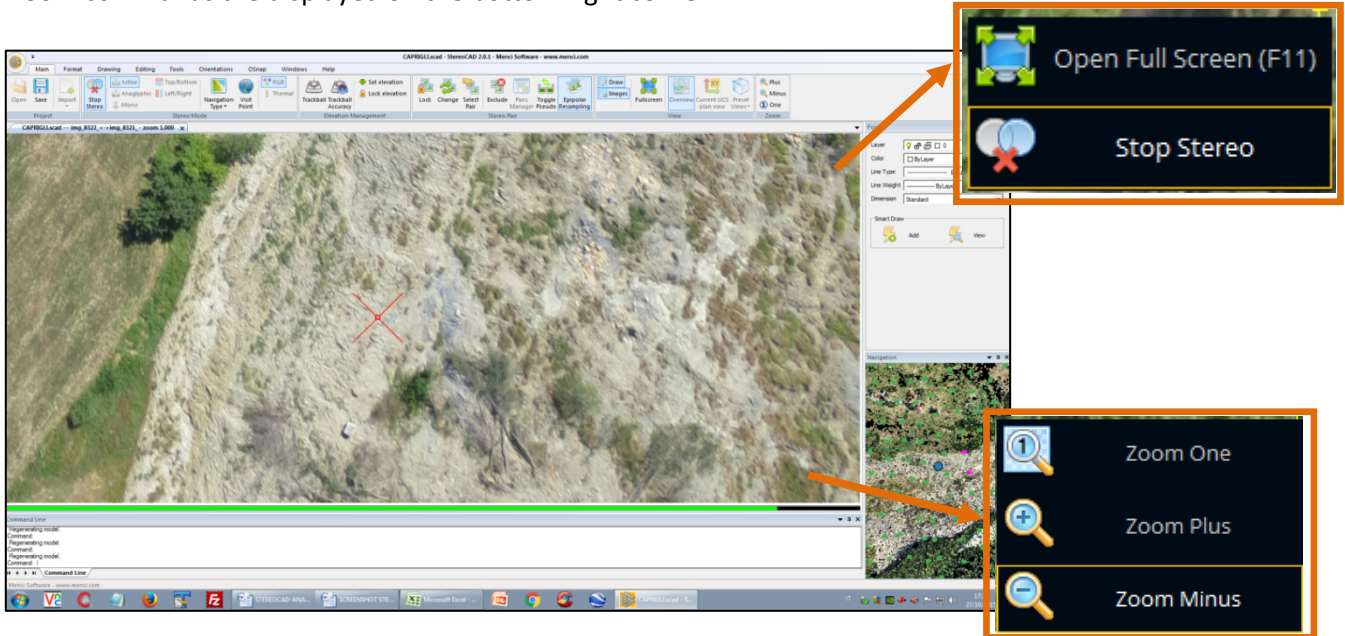

FIG 1

FLOATING CONTEXT FAST MENU ON THE STEREOSCOPIC/MONOSCOPIC WINDOW

In the stereoscopic window, you will find the following floating fast menu:
- On the top right corner you can open/close the full screen mode or stop the stereo vision
- Zoom commands are displayed on the bottom right corner

THIS DOCUMENT IS A BASIC INTRODUCTION FOR STEREOCAD. YOU CAN FIND MORE INFORMATION IN THE MAIN MANUAL ON STEREOCAD SOFTWARE (HELP/TUTORIAL)

For further information, please contact us at: contact@menci.com

---