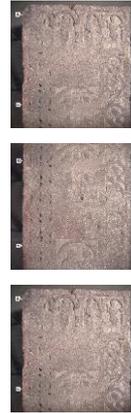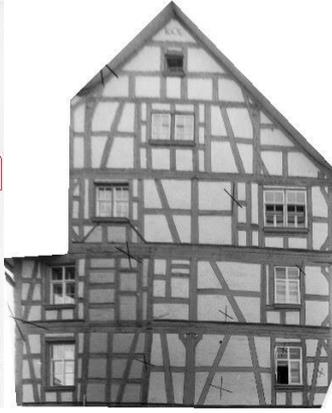Architecture : Facade rectification

Archaeology: Documentation and rectification of artefacts

ELCOVISION 10 ELSP – The Fastest and Easiest Start into Digital Photogrammetry

ELCOVISION 10 ELSP is the universal, low-priced way into photogrammetry. With ELCOVISION 10 ELSP you can take measurements from any kind of images.

For all measuring tasks where a true to scale photo representation is more important than an exact line evaluation, ELCOVISION 10 ELSP is the fastest and user-friendliest software on the market.

ELCOVISION 10 ELSP is an image rectification on the basis of digital pictures. The pictures can be rectified into line drawings or they can be rectified digitally into an orthophoto.

Particularly interesting areas of application of ELCOVISION 10 ELSP are in the field of architecture and special applications like traffic accident measurement.

The Advantages of ELCOVISION 10 ELSP

- Timesaving and virtual error free measuring on-site by taking simple photographs

- Comfortable and by automatic methods supported evaluation of the picture information in the office

- Definition of the rectification planes with rectangles or by any square with 5 known distances or by parallel and perpendicular lines in the picture and at least one well-known distance

- Enormous speed for the receipt of visual results

- Use of any arbitrary photo or video cameras and lenses

- Correction of camera parameters like the lens distortion

- Arbitrary subsequent treatment and linkage of these evaluation results as true to scale drawings, rectified pictures or other computations and analyses

Digital Data Acquisition

That means: Completely free camera choice for the picture takings. ELCOVISION 10 preferably supports photographs of digital cameras, however with the automatic réseau measurement of images of metric cameras you can also enter these metric images into a photo block

Special Flexibility

- An orthophoto may consist of as many as desired source images and rectification planes

- The images and rectification planes are linked together automatically

- As many as desired rectification planes are possible for any image

Graphic Evaluation

ELCOVISION 10 ELSP is smoothly integrated into numerous CAD programs. Thus all drawing commands of the CAD program will become directly "measuring functions", the CAD software turns into a digital photogrammetric workstation. For example you can directly draw a line using coordinates measured directly from the images.
Since the most CAD programs are optimized for construction not for reconstruction the CAD Plugin of ELCOVISION 10 includes numerous

helper functions for the measurement work.

The plugin for AutoCAD offers also extensive possibilities for the production of surface models and for the production of 3D orthophotos apart from the conventional line evaluation.

Other Measuring Methods

The ELCOVISION 10 program family covers all of the usual measurement tasks. The smooth communication and seamless integration of digital rectification, 3D-photogrammetry, tachymetry and laser measurements in a uniform graphical user interface enables the user to switch from any of these measurement methods to another one at any time.

ELCOVISION 10 means Swiss precision for PC users. And these are the fields of application in which this measuring system has been successfully applied:

- Archaeology
- Architecture
- Fire protection
- Monument conservation
- Surveying
- Industrial surveying
- Disaster protection
- Criminology
- Landscape planning
- Quality control
- Traffic accident surveying
- Environmental protection

ELCOVISION 10 ELSP Technical Data and Function Overview

Image Recognition and Image Processing

Reads and writes almost all known digital image formats

Full automatic raw-file converter with automatic image optimizing for maximum image quality

Integrated image processing module with colour and contrast adjustment, gamma correction etc.

Optimized image display in the measurement magnifier for easy and precise measurement even in underexposed or overexposed image parts.

Réseau Measurement

Fully automatic réseau measurement of digital images

Fully automatic réseau measurement of réseau images of metric cameras with automatically chosen transformation: affine, helmert, projective or polynomial

Digital Rectification ELSP

Definition of 2D-rectification planes with known rectangles or arbitrary distance squares with 5 known distances

Definition of 2D-rectification planes by perpendicular and parallel lines and at least one known distance

Linking of 2D-rectification planes among themselves and also linking them into the 3D-space using 3D-control points

Definition of balanced 3D-rectification planes using 4 or more 3D-control points

Arbitrary trimming of the rectification planes with automatic determination of the circumference and the area of the resulting rectification plane

Optional lens distortion correction

Automatic rectification as many as desired rectification planes into a digital single picture e.g. an orthophoto

Full automatic generation of 3D-rectification planes from AutoCAD surface models

Full automatic transferring of 3D-rectified textures into AutoCAD

Automatic Image Measurement Modes

Automatic measurement of réseau crosses with sub pixel precision

Automatic measurement of targeted points with sub pixel precision

Automatic measurement of corners and edges

Definition of 3D Planes

Balanced spatial plane by 3 or more 3D-points

Definition of parallel planes by points or with arbitrary distance to other planes

Definition of perpendicular planes to arbitrary other spatial planes

Measuring Methods for Point Measurement and CAD Plugin

Rectification Measurement

Measurement from full spherical images

CAD Integration

Seamless integrated into the following CAD Systems, all drawing functions of the CAD become measurement functions

AutoCAD: 2009–2016 (32/64 Bit)
BricsCAD V12-V15 (32/64 Bit)

Additional CAD Functions

Superimposition of the CAD drawing into the digital images

Draw perpendiculars with one single measurement

Measuring and drawing of single segmented lines

Simultaneous measuring and drawing of 3D-trimmed lines

Simultaneous measuring and drawing of 3D-balanced lines

Simultaneous measuring and drawing of UCS aligned lines

Circle intersection construction function

Drawing of 3D-circles and circular arcs with three 3D-measurements with plausibility check

Drawing 3D-rectangles with three 3D-measurements with plausibility check 2D-projection of a drawing into any plane

Optimized merging of single lines into 2D-polylines and 3D-polylines

Integrated 3D-surface modeller generating waterproof surfaces from 3D-clouds of points and 3D-line drawings

Built-in generating of contour maps from surface models

Special measuring functions for inserting blocks with automatic block adjustment

Special measuring functions for measuring cylinders and right parallelepipeds

Supported Operating Systems

Windows XP/Vista/7/8/10