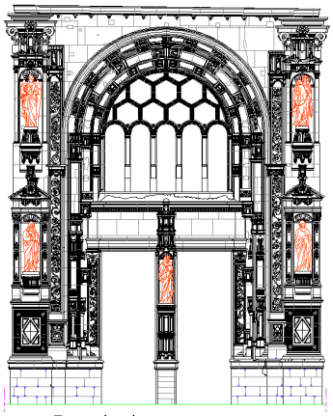
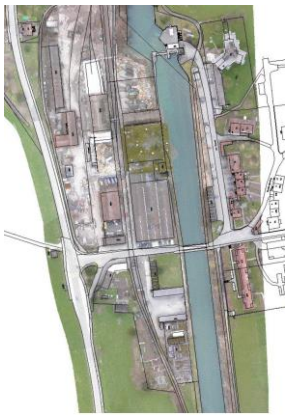
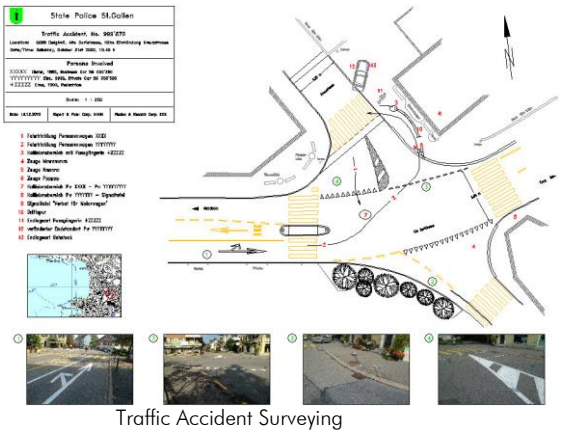
ELCOVISION 10



Facade documentation



Aerial Photogrammetry



Traffic Accident Surveying

ELCOVISION 10 – The Universal 3D-Photogrammetry System

ELCOVISION 10 the popular photogrammetric evaluation software package has reached the sixth generation since its market launch in 1986 being constantly upgraded and developed to meet user demands.
It provides the user with the appropriate tool for every job, ranging from simple digital image rectification up to professional 3D-photogrammetry. The clear layout and flexible data and image organisation speeds up work on projects.

Its modular structure introduces the user step-by-step to the world of photogrammetry with an very acceptable price. Ray bundling with up to 1000 images provides a homogeneous photo block accuracy. This feature gives the user continuous control over the accuracy while at the same time reducing the workload on-site:

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

This results in a comprehensive documentation of the object, which can be re-evaluated and also re-measured even years after the measuring images are taken No other measuring method has this advantage.

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

Digital Evaluation

In this field ELCOVISION 10 opens completely new dimensions. The most important advantage: ELCOVISION 10 informs the user with each measurement about the current accuracy level. Therefore incorrect measurements can be promptly recognized and corrected. Each individual measurement is additionally logged automatically with date time and accuracy.

Graphic Evaluation

ELCOVISION 10 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 this 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
- Monitoring of buildings
- Deformation measurements for research applications
- Fire protection
- Monument conservation
- Surveying
- Input for GIS
- Industrial surveying
- Disaster protection
- Criminology and forensic
- Landscape planning
- Quality control
- Traffic accident surveying
- Environmental protection

Photo Mess Systeme
www.elcovision.com

ELCOVISION 10 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

Automatic generation of point clouds with defined accuracy

Measuring assistance by epipolar lines

Methods of Orientation

Arbitrary definition of the system of coordinates: Local by distances and/or control points, or with control points within a superior system of coordinates

Full automatic photo orientation

Single and two photo orientation
Multi photo orientation

Bundle adjustment with up to 1000 pictures and simultaneous camera calibration

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

Mono Photo Measurement: Intersection of a measuring beam with a 3D-plane

Two Photo Measurement: Balanced spatial intersection of two measuring beams

Multi Photo Measurement: Balanced spatial intersection of two or more measuring beams

Automatic Orthophoto generation

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

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