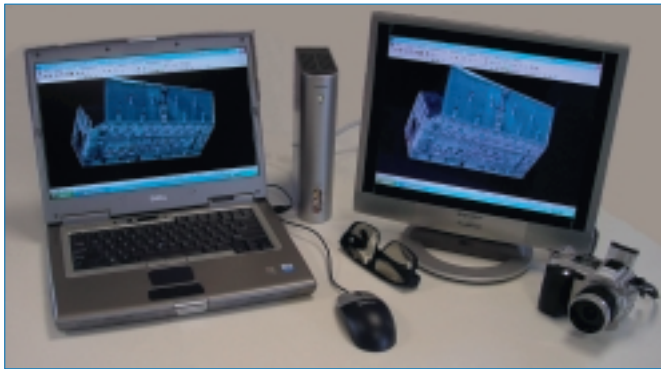




PI 3000

***DIGITAL IMAGE
MEASUREMENT***

Digital Image Measurement and 3D modeling Solution



*Topcon's PI-3000 software allows you to capture data quickly, using a standard digital photo camera *) and easily generate true 3D models that can be used for measuring, mapping and interpretation in a wide variety of applications.*

The PI-3000 combines an easy to use interface, and advanced mathematical processing, to allow quick and very accurate modeling. In this way, accurate 3D models are produced in shortest possible time with a minimum of preparation or specialist knowledge.

Features of the PI-3000

Standard Camera

Use your own digital photo camera. At a minimum, take pictures of the object from 2 different positions, partly overlapping each other. There is no specific need to use a fixed base or other set up conditions for most applications. When the target is to achieve sub millimeter accuracies, certain basic set up conditions should be planned for. The number of photo's you can use to generate your models can basically be limitless.

Fast and Easy Bundle Adjustment

In order to create a 3D model, the different photo's need to be 'calculated' together via a so called bundle adjustment option in the software. Via simple measurement procedures, you need to identify and measure common points in both photographs. This is a process of minutes. Based on a minimum of 6 points, the software will calculate an adjustment and displays accuracy of the individual points. You can add or change points in order to achieve the maximum result.

Accurate

The PI-3000 software can produce models with accuracies up to 0.4 mm for photos taken at 10 m distance to the object. Conditions are the use of special targets for adjustment points, and optimal camera standpoints. To achieve accuracies at this level, a regular (yearly) camera calibration is required, which can be provided as an option.



Determining and measuring common points for bundle adjustment

Fast and Accurate DSM Calculation

In order to have the PI-3000 calculate Digital Surface Models (DSM's) fully automatically, it is usefull to define the boundaries and break lines around the model. By 'drawing' these critical lines of the object and surrounding surface into the picture, the software will be able to separate the model from the surrounding 'noise'. Now, with the press of a button, it will calculate a true 3D surface model, in which you can directly measure, or export it for further manipulation, mapping etc. into any third party handling or CAD software.

Examples of an Archeological Site



Defining Breaklines to identify the 'critical' boundaries of the object



Selectable TIN Model interval creates a TIN model structure



Possibility to create a solid surface model



Displaying Contourlines

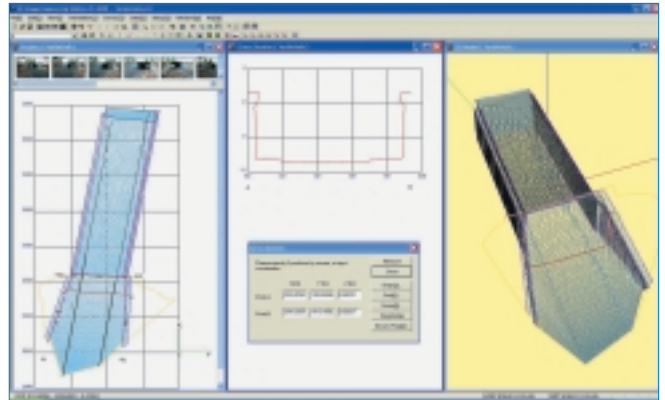


For ultimate presentation and interpretation purpose the true photo texture can be included in the model

Advanced Features

In addition to the unique data capturing and 3D modelling functionality, the PI-3000 offers several advanced features for manipulating and handling the models and model data. Advanced features include;

- Calculation and display of model cross sections
- Calculation and display of contourlines
- Area calculations
- Distance measurements, either point to point, or point to line
- TIN model generation
- Rendering models
- Ortho Images
- A variety of export formats (DXF, Ascii, VRML etc)



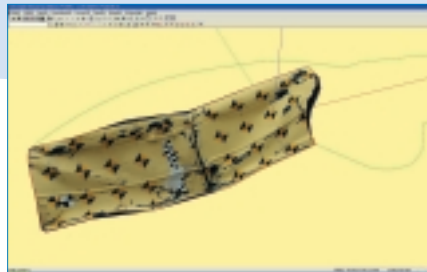
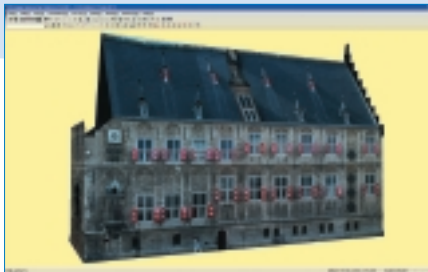
Hardware Platform and Options

For optimum user friendliness and ease of implementation, the PI-3000 Software is developed to operate on standard PC platforms *). Optional, a 3D monitor that (when used with 3D glasses) offers true 3D view for highest accuracy modelling and measurement requirements.

Applications

Topcon's PI-3000 offers modeling, measurement, mapping and interpretation functionality for a wide variety of applications;

- Close Range Photogrammetric Applications
- Aerial Photogrammetry
- Architecture
- Archeology
- Disaster monitoring/mapping
- Mining
- As built civil and industrial applications
- Accident investigation
- 3D modeling and visualization applications



System Components, Options and Requirements

PI-3000 Bundle contains:

- Single User License PI-3000 Software
- Manual

Options:

- 3D Monitor and 3D Glasses for optimum measuring

Hardware Requirements:

- Digital Camera with preferred minimum of 5 MegaPixel
- Personal Computer with:
 - CPU Pentium 4 2.0 GHz
 - Memory 512 Mb
 - Graphical solution Open GL
 - OS Windows 98, ME, 2000, XP
 - USB or printer port for hardware lock

Topcon International



More than 70 years of experience

For 70 years, Topcon has been a leading manufacturer in industrial, medical and positioning enhancement tools. This broad experience has created a basis for Topcon's wide product line for basically every positioning need, whether it's for construction or surveying applications. For the construction industry, Topcon offers a complete range of innovative laser and sonic solutions, including industry leading products for interior, utility, general construction and machine control applications. For surveying applications, Topcon manufactures and supplies a complete range of optical measuring products, from digital and optical levels to theodolites and robotic total stations, and a full line of GPS+ satellite positioning solutions.

Product & Service support

To assure that your Topcon product maintains peak performance, your local Topcon dealer offers factory trained certified service technicians. And just in case service assistance isn't available in your area, our Europe wide network of Topcon offices, offer repair and return service policies second to none.

Innovation, not imitation

During the last decades, Topcon has brought many innovative solutions to the industry, that offer the contractor significant productivity increase and greater ease of use. That's the key to leadership, and the reason Topcon is the world's leading supplier of laser and surveying instruments. Some examples of unique Topcon technologies:

- Waterproof auto level
- The integrated total station, "The Guppy"
- The compact coaxial total station (GTS-1)
- World's First laser with beam scanning technology
- The first waterproof total station
- GreenBeam® visible construction lasers
- Automatic excavator control system
- World's First 3-D machine control (3D- MC™ LPS)
- 5" Grade laser with automatic alignment & remote control
- Horizontal self leveling laser with liquid compensator
- First robotic total station with instant beam lock system (GTS-800A and RC-2)
- First satellite-directed automatic 3D machine control system (3D-MC™ GPS)



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