



TCP – MDT

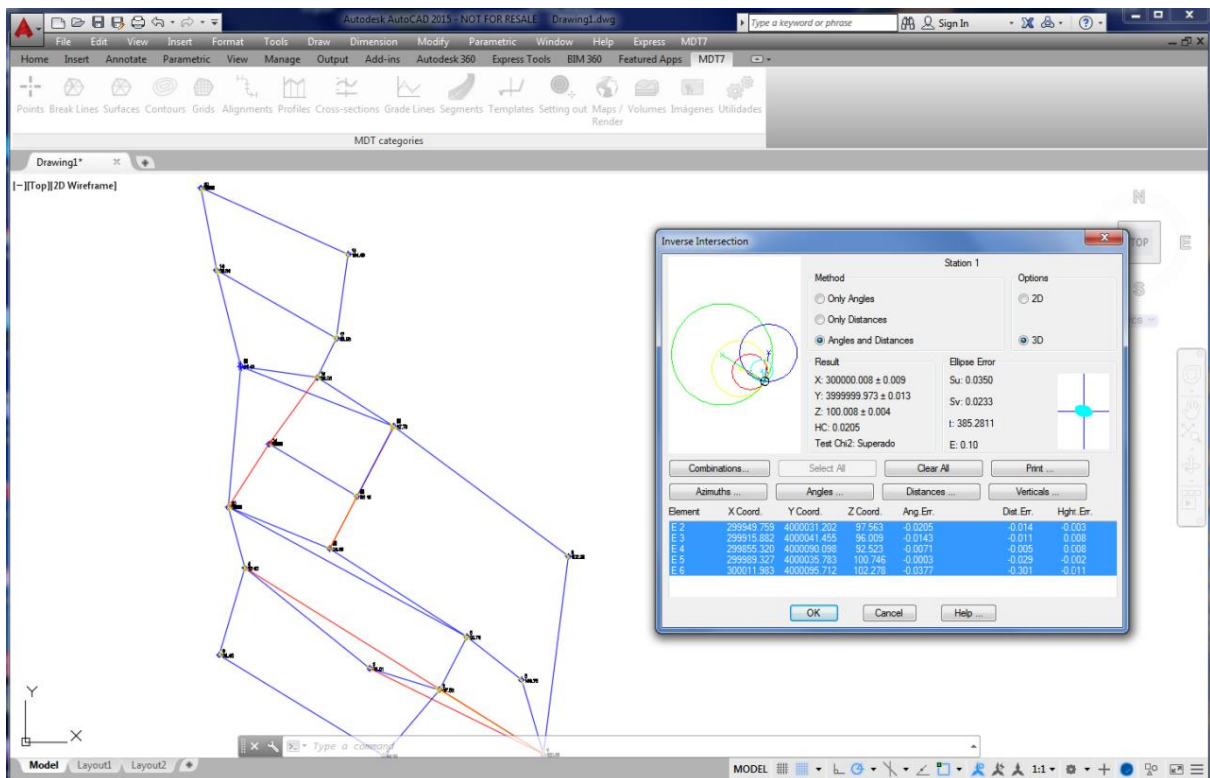
Digital Terrain Model - V7.5

Topography and Geodesy Module

Calculation of Total Stations Observations

The topography module allows the importing of files from total stations and the most usual data collectors on the market. Data can also be entered manually in tachymeter, theodolite-distancimeter or total station mode which can be defined by the user, selecting the horizontal or geometric distance, vertical angle or change in level etc.

Based on this information, the program provides all the tools required for the processing, calculation and drawing of stations and topographic points. Stations calculation can be carried out by radiation procedures, inverse bisection, direct and inverse intersections and levelling.



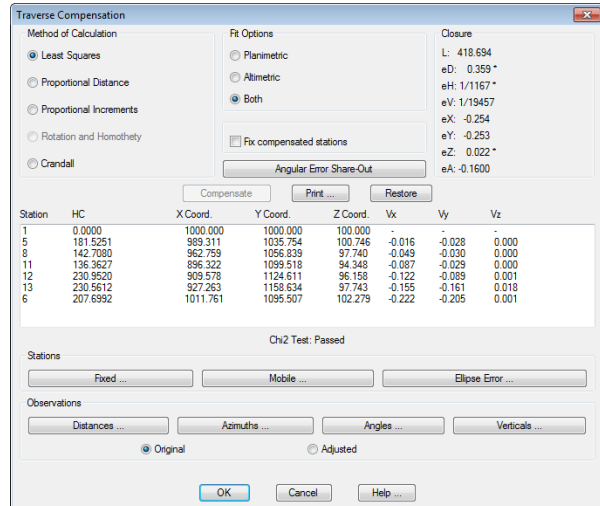
The program compensates the mean distances and slopes in the calculation of points and stations. Optionally, corrections may be considered by refraction and sphericity, reduction to ellipsoid and combined scale factor.

It also includes the automatic correction of disorientations of mutual observations and instrument angular errors in direct-inverse circle observations. Finally, in order for these calculations to be more precise, a table is included with the precisions and characteristics of the most usual instruments.

Traverses and Networks

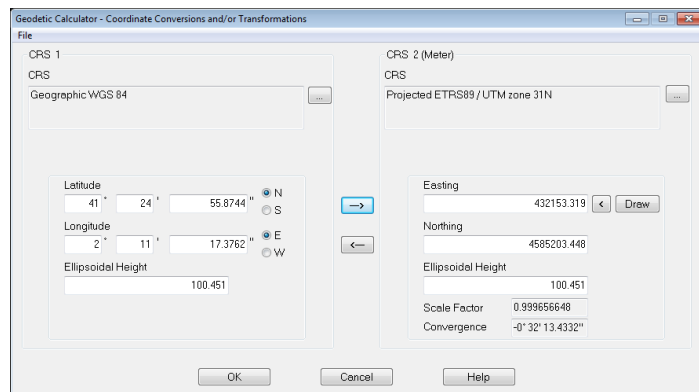
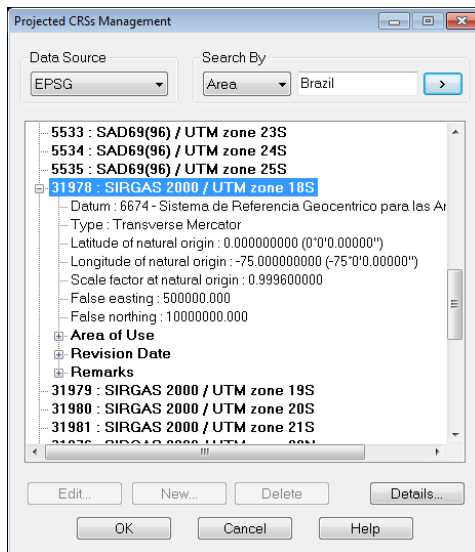
MDT includes the compensation of networks and traverses (closed, open and tied to one or more fixed points) by Least Squares, proportional to the distances, coordinates' increases, Crandall rule or rotation and dilation.

The program allows the configuration of admissible errors and for calculation methods which use Least Squares, the tests can be activated which assess the reliability of the observations and of the adjustment made.



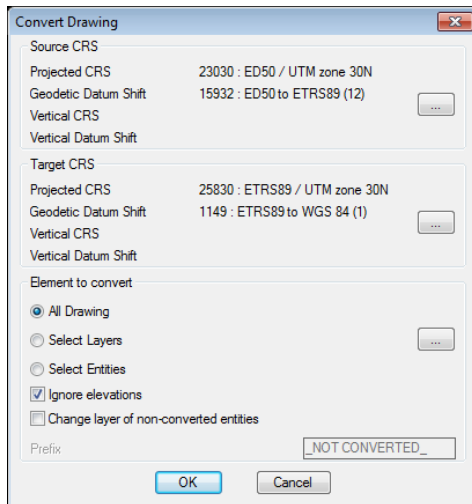
Geodesy

The program includes the **EPSG** data base which incorporates hundreds of coordinates' systems and vertical and geodesic datum transformations from all around the world, including an adaptation to the Geocentric Reference System for the Americas (SIRGAS). This data is used by the mapping projections library **PROJ.4** to carry out conversions of coordinates between the different systems. The coordinates' units may be metres, miles, American feet etc. The most usual systems can be selected from a list of favourites.



A powerful geodesic calculator allows the implementation of the most usual transformations and/or conversions between geographic, geocentric and projected systems.

Furthermore, those module includes options for converting projected coordinates' files into generic format X,Y,Z and geographic coordinates into KML formats from Google Earth, GPS exchange Format (GPX) and W84 from TcpGPS.



Finally, another command allows the projection of drawings opened in CAD, applying the transformations to the complete drawing, a list of layers or a selection of objects and being able to decide whether the elevations will be included in the calculations.

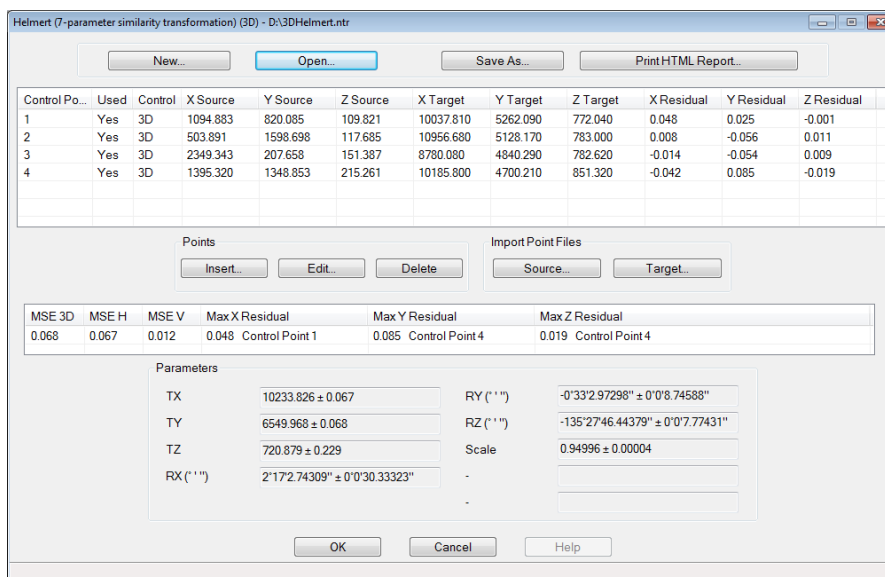
The selected transformation applies to all drawing entities (vertices of lines, arcs and polylines, text insertion points and blocks etc.).

It is also endowed with specific options for transforming a flat and projected coordinates' drawing and vice versa.

Local Coordinate Systems

This module also has options for local coordinate systems application and management with the following methods being available:

- 2D: XY Translations, Helmert 4 parameters, Similar and Projective.
- 3D: XY Translations and Helmert 7 parameters.
- 2D+1D: Helmert 4 parameters + Z Displacement and Helmert 4 parameters + Z Displacement and Slopes at XY.



To create a local coordinate system there are various possibilities: enter the value of the transformation parameters directly (rotations, translations etc), establish the pairs of source and target points involved or by importing a predefined file. The program generates a detailed report in which the parameters calculated, various statistics and the coordinates of the checkpoints involved are provided.

Once the local system has been created, recording can be carried out to subsequently carry out transformations of drawings and files of coordinates and it may also be used in the TcpGPS application for mobile devices.

Requirements ⁽¹⁾

CAD	AutoCAD versions 2007 to 2018 and compatible versions BricsCAD Pro/Platinum versions 12 to 17 ZWCAD Professional/Enterprise versions 2012+ to 2015+, Classic and 2017
Operating System	Windows XP / Vista / 7 / 8 / 8.1 / 10 in 32 and 64 bits ⁽²⁾
Peripherals	Mouse or pointing device CD-ROM Reader
Graphic Card	1024x768 pixels, compatible with OpenGL Nvidia or ATI chipset recommended
Drive	1 GB free space
Memory	Minimum 1 GB
Processor	Dual-core 2 Ghz or superior

(1) Consult the website for further details

(2) Generally speaking, operation via a remote desktop and similar services are not guaranteed, nor on virtualization platforms. Write to soporte@aplitop.com to ask about these special cases.

APLITOP S.L.
Sumatra,9 – Urb. El Atabal
E-29190 Málaga (Spain)
Tel.: +34 95 2439771
Fax: +34 95 2431371
e-mail: info@aplitop.com
website: www.aplitop.com

