

TCP – MDT

Digital Terrain Model – V 5.3

Standard Version

Introduction

The Standard version is suitable to carry out all kinds of surveying, terrain profile, volume calculation, etc. projects. Its main users include the public administration, construction companies, engineering firms, architects, town planners, companies dedicated to earthworks, quarries, mining firms, environmental companies, etc., as well as independent professionals.

In addition to offering high performance, it is very easy to use. It runs with all versions of the AutoCAD family, ranging from 14 up to 2011, in addition to IntelliCAD, over Windows 2000, XP, Vista y Windows 7 in 32 and 64 bits operating systems.

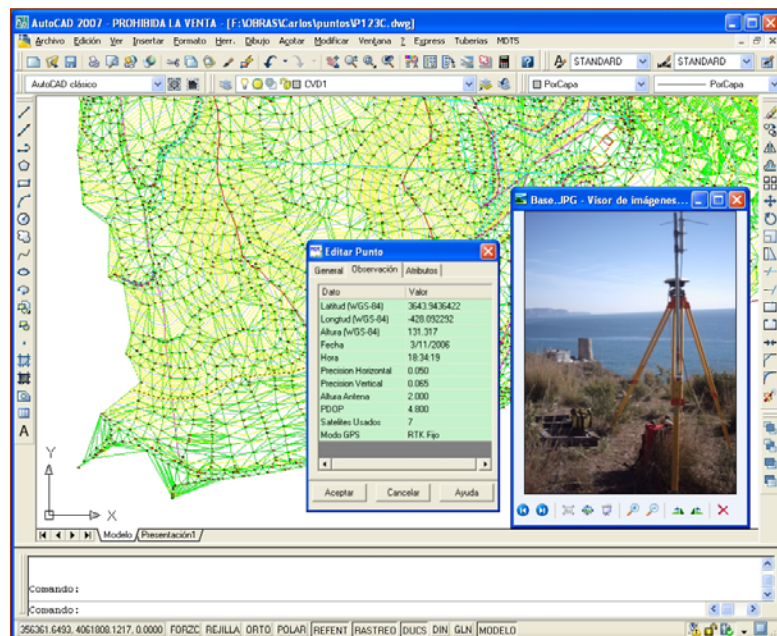
It includes import and export of standard ASCII and LandXML files. The results can be generated in HTML, Word, Excel or PDF.

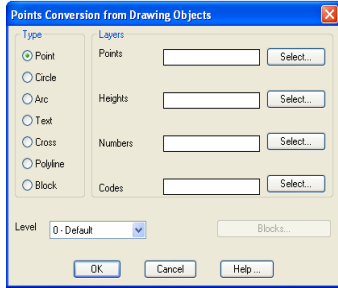
Surveying Points

The program starts to run from the coordinates obtained at any total or GPS station by converting files from data-gathering stations or from any other application through a powerful format manager.

Points are intelligent CAD objects, which is why they can be deleted, moved, changed to another layer, etc. using conventional commands or blocks having attributes, thereby facilitating compatibility with other CAD applications or systems. Additionally, any kind of editing operation can be executed like: interpolating, changing heights, sorting by levels, filtering, assigning codes, labeling coordinates, grouping points, changing their visibility, etc. Coordinates can be changed using an editor similar to an electronic sheet. Selection can be done by number, level, height, group, code or graphically. It can be related to every point a document, drawing or picture as an hyperlink.

Points can have alphanumeric names and it is possible to display points with different shapes and colors within the same drawing.





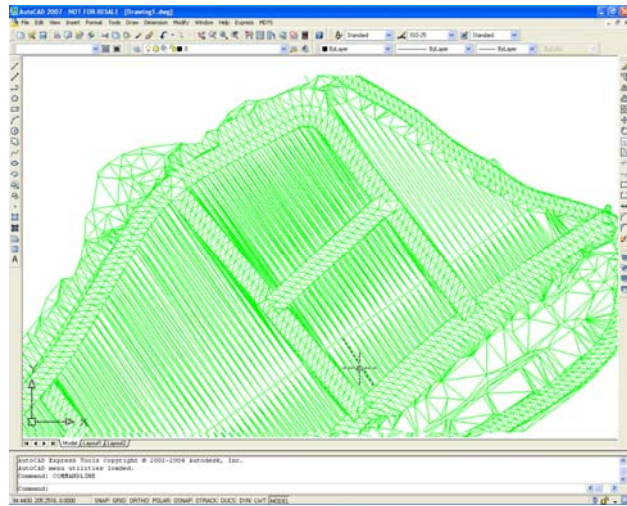
New points can also be obtained from AutoCAD objects drawn by other programs (points, circles, crosses, blocks with or without attributes, etc.). The program then automatically draws the planimetry and slope change lines using its codes database, in which layers, colors, types of lines, thickness and point code ranges can be defined.

It is possible to assign each code to different blocks for ground plans, elevation drawings and 3D rendering for subsequent realistic viewing.

Surfaces

Break lines can be graphically defined through point sequences, codes or by importing files. Tools are available to detect loose vertices, points on a line, crosses and surface inconsistencies, and to repair and mark the errors. Advanced polyline editing commands.

Automatic triangulation from points or taking into account break lines. Triangulation from curves with length and angle controls as well as the minimization of triangle planes. Drawing as lines, 3D faces or polyfaces. Quick View.



Creation of surfaces using multiple boundaries or selecting areas of action. Interactive triangulation editing, allowing one to insert, delete or invert joints.

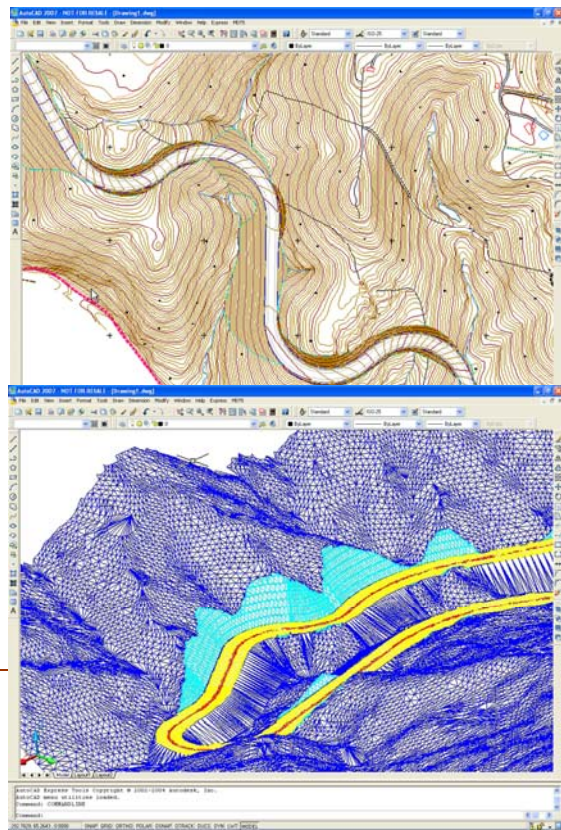
Boundary lines and islands. Including new points into the model. Multiple surfaces in a drawing.

Generating Contour Lines

Generating contour lines as polylines or curved objects. Contours at special heights. Automatic contour line modifications after changes in triangulation.

Intelligent labeling without cutting contours, controlling style, size, layer, etc. in manual, automatic or by direction line mode. Additional height labeling.

Commands to add vertices, edit contour lines, discretize polylines and splines, etc.



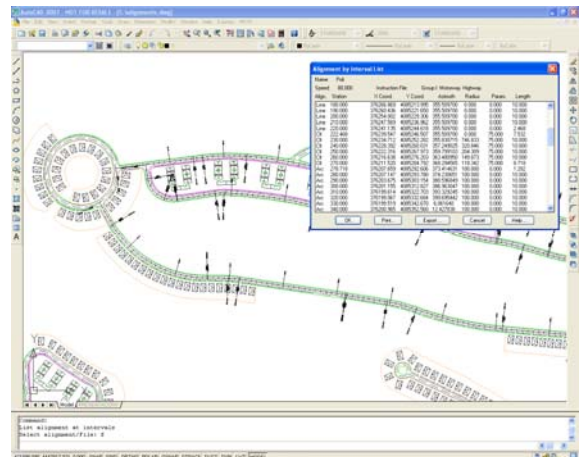
Grids

Creating grids from a surface, contour lines or from a drawing which has been previously processed with AutoCAD. Possibility of converting grids to the most common formats available in the market. Representation through 3D faces or polyface grid, which are suitable to export to rendering and animation programs.

Commands to process grids, joints, filtering and re-sampling in order to improve the viewing of orthophotos on the terrain.

Ground Plan Alignments

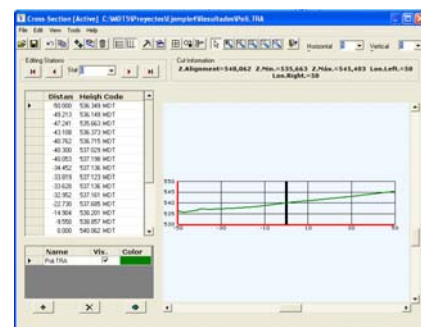
Graphic and/or numerical definition of horizontal alignments and converting an alignment status to be used in the process of obtaining longitudinal and cross-section profiles. Interactive vertex editing. Identification of each horizontal alignment by name. Automatic dimensioning with control over all drawing parameters. Point interval list. Conversion of horizontal alignments from other applications available in the market. Intersection lists and distances between horizontal alignments.



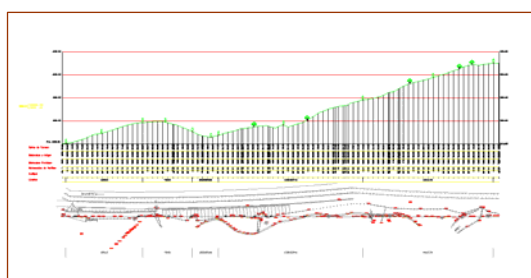
Commands to locate the position of a specific station on the horizontal alignment and viewing through an independent window.

Profiles

Calculation and simple views of longitudinal and cross-section profiles from triangulation, digital 3D cartography or section files. Profiles by regression. Manual input. Quick profile from a surface.



AutoCAD-independent editing of longitudinal and cross-section profiles with the possibility of viewing multiple profiles at the same time. Interactive modifications. Tools to process and modify profiles.



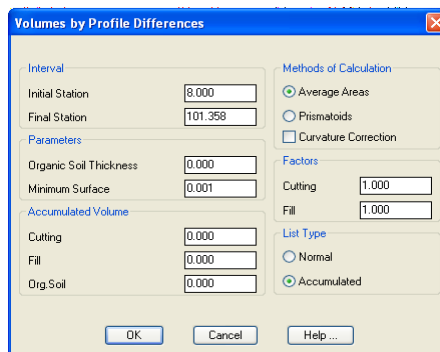
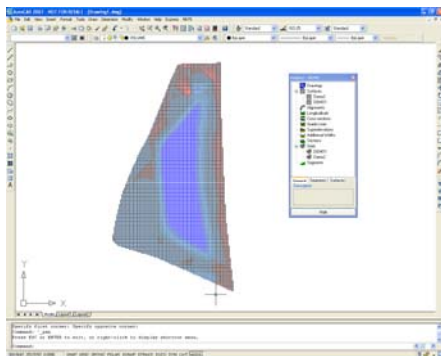
Drawing of customizable profiles with the possibility of changing drawing order, text style and size, labels, justification, etc. Use of model and paper space. Inserting cross-section profiles into a terrain's different phases of development. Projecting 3D polylines onto longitudinal profiles and cross-sections. Drawing customized blocks

on the terrain or numerical data. Representing cartography as a numerical data element.

Dynamic viewing of section files with quick profile, longitudinal profile and obtaining a point's height.

Volumes

Calculating volumes from grid, surface or cross-section profile comparisons. Graphic representation of cutting and fill areas with color-coded gradients. Possibility of applying curvature correction depending on project's horizontal alignment. Cross sections interval for volume calculation can be selected.



P.K. Actual	Intervalo	Cubicar
104.907	15.050"	SI
120.000	3.878"	SI
123.878	16.122"	SI
140.000	20.000"	SI
160.000	20.000"	SI
180.000	3.513"	SI
183.513	6.327"	SI
189.840	770.1652"	NO
960.000	1.284"	SI
961.284		

Maps - Rendering

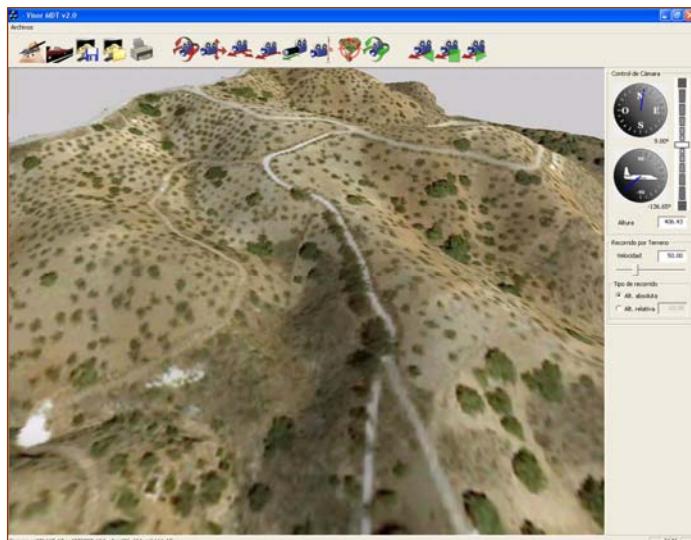
Three-dimensional terrain grid from a surface or contour lines. Slope map, directions, height map and visibility. Drawing of solids.

Terrain viewing and high-quality video generation commands

Libraries containing different realistic textures. 3D objects in 3DStudio format are included to enhance presentations.

Possibility of defining new textures, including the possibility of using orthophotos as another texture.

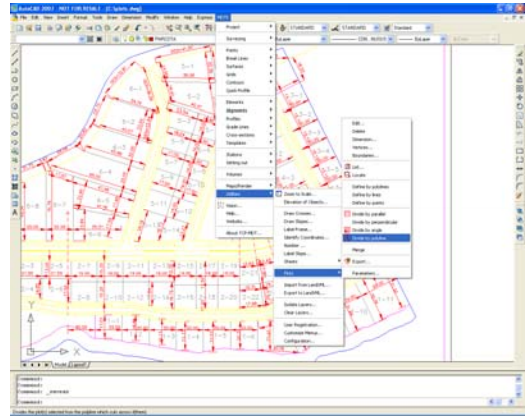
Insertion of geo-referenced images and image geo-referencing tool.



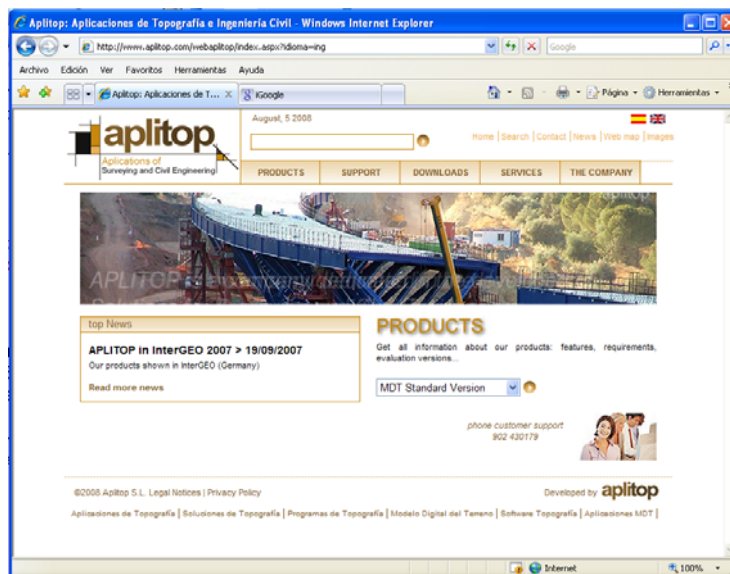
Utilities

Plan finalization tools: drawing of crosses, slopes, division of sheets, etc. Layer control tools. Elevation of objects.

Plot delimitation options to assign surfaces parallel or perpendicular to a side, vertex, rotation, etc. Dimensioning. Identification, lists and exporting to databases.



Other commands for coordinate labelling, object numbering, support web access, downloading of updates, sending of drawing and related files, etc.



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