



TCP – MDT

Digital Terrain Model - V7.5

Standard Version

Introduction

The Standard Version is suitable for carrying out all kinds of topographical survey projects, terrain profiles, volume calculations etc. Its main users are public administrations, construction companies, engineering, architecture and town planning studies and companies involved in earthworks, running quarries, mining, the environment etc. as well as free-lance professionals.

It is very easy to operate and affords high performance as well as working with a wide variety of CAD system versions, facilitating the exchange of information between users by means of DWG format drawings.

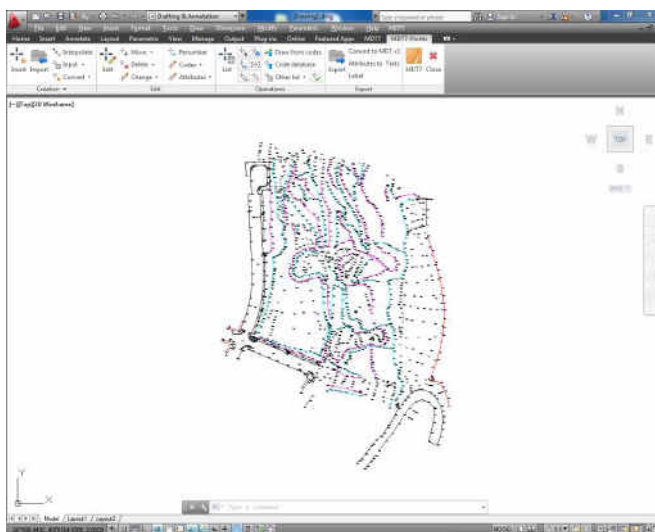
It demonstrates great versatility through the import and export of files in the most common formats on the market, including generic LandXML and KML, and generation of results as text, HTML, Word, Excel and PDF.

It provides periodic notification of the improvements and updates available, showing the list of changes and allowing them to be installed at the chosen time.

Topographic Points

The program starts working from coordinates obtained from any total station or GPS, converting files from its data collectors or from any application by means of a powerful format manager.

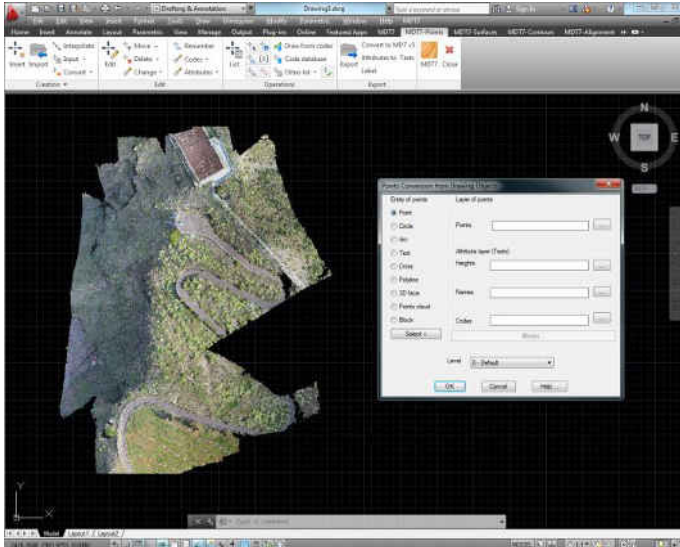
It is endowed with a points viewer which is independent of CAD with viewing controls, 3D orbit etc.



The points are intelligent objects so they can be deleted, moved or changed of layer using conventional commands, or blocks with attributes which makes easier compatibility with other CAD systems or applications.

Furthermore, we will be able to execute all kinds of editing operations such as: interpolating, changing dimensions, classifying by levels, filtering, assigning codes, labelling their coordinates, grouping them together, changing their visibility etc. The coordinates may be modified using an editor similar to a spreadsheet. The selection is made by number, level, dimension, group, code or graphically.

It is also possible to obtain new points from CAD entities drawn by other programs (points, circles, crosses, blocks with or without attributes, point clouds etc.) with the possibility of detecting the entity type by means of a graphic designation.



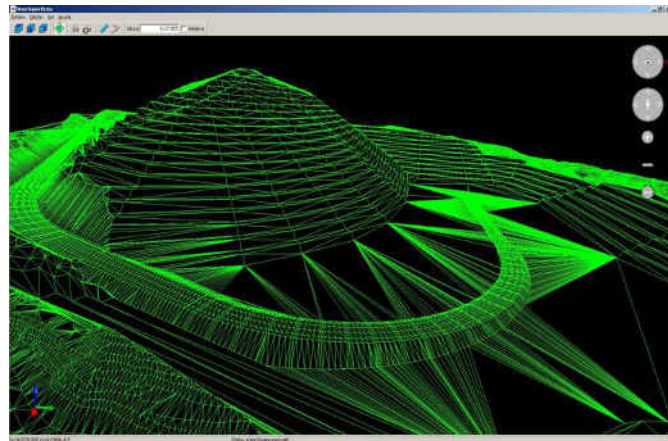
The points may be represented by different shapes and colours on the same drawing. The program will automatically draw the planimetry and the slope change lines, using its code data base on which layers, colours, line types, thicknesses and point code patterns can be defined. Each code can be assigned to a different block for the ground plan, elevation and 3D aiming at a subsequent realistic view.

Finally, each point can be associated with a document, drawing or picture file by means of a hyperlink.

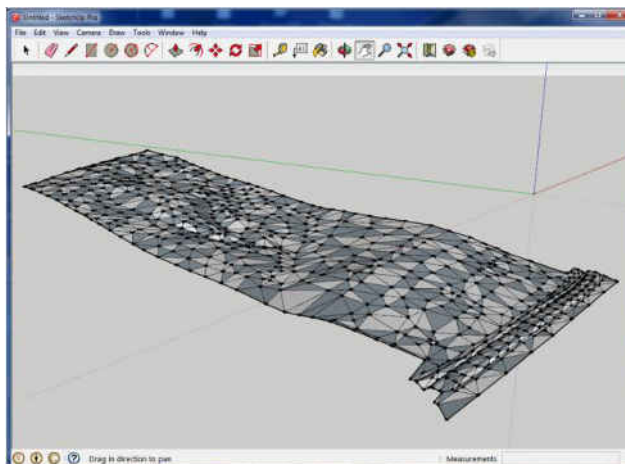
Surfaces

Break lines can be defined graphically by means of a points sequence, codes or by importing files. It provides tools for detecting good vertices, linear points, crosses and inconsistencies with the surface, repairing or marking the errors.

Triangulation can be created from points, with or without break lines and applying angle controls, maximum length, minimisation of flat triangles and gap repair.



The surfaces may have multiple contours or islands and they may be drawn as lines, 3D faces or polyfaces in CAD itself or in a separate viewer.

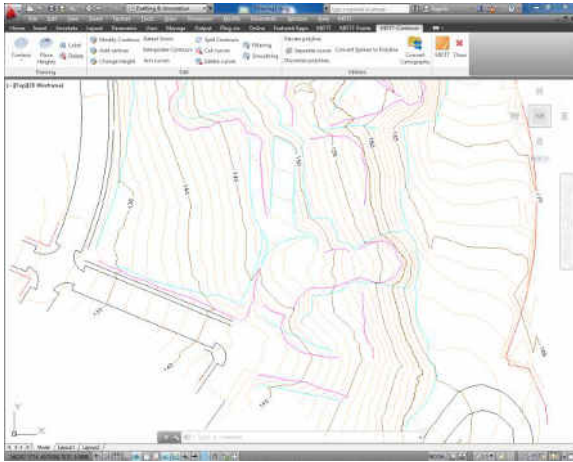


There are various commands for the interactive editing of the surface, allowing the insertion, deletion and inverting joints as well as deleting and inserting new points.

The program encompasses the importing of the most regular formats, including terrain point clouds in LIDAR (LAS) format and also exporting to the formats 3D Studio (3DS), Collada (DAE) and Google SketchUp (SKP), affording the possibility of carrying out realistic images from MDT processed data.

Contours Generation

MDT can generate contours with an interval or at special elevations and they are updated automatically with each change in triangulation.



The curves can be labelled manually or automatically with style, size and layer customization. Another command allows additional labels to be placed anywhere on the surface.

There are also other commands for interpolating, breaking and joining contours, adding vertices, editing contours, discretizing polylines and splines, detecting elevation errors etc.

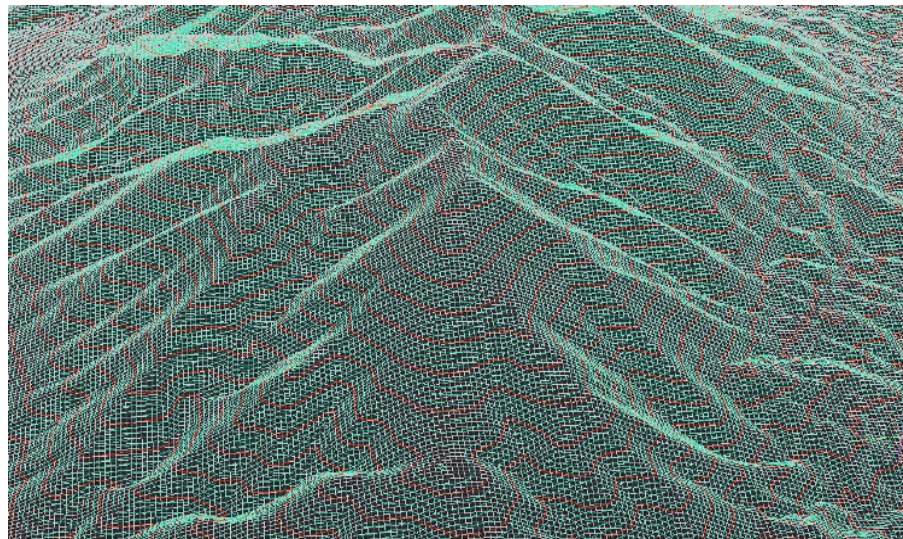
Other tools make it possible to import files in shape and other formats.

Meshes

Meshes may be created from a surface, contours, 3D entities or mesh files in various known formats (Arc/Info, LAS etc.).

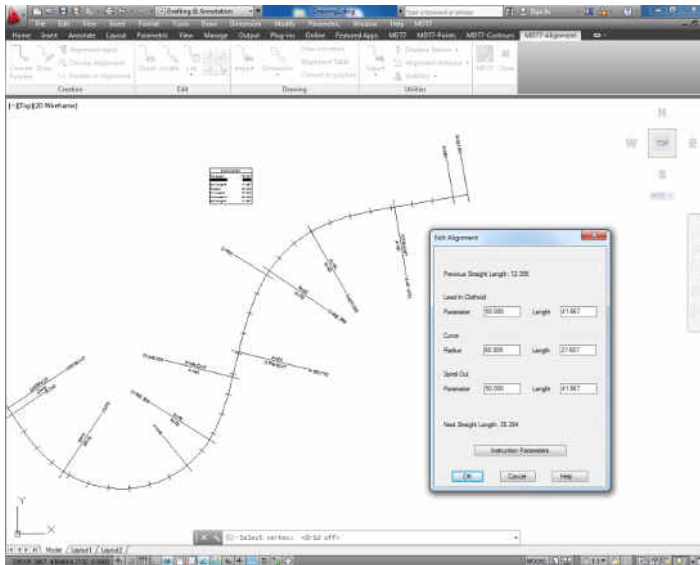
They may be represented as 3D faces, polyface mesh or image, all being suitable for export to realism and animation programs.

It also has commands for mesh processing such as joins, filtering and resampling, conversions etc.



With MDT 7 a mesh can be defined as the present surface and it may be used to identify elevations, quick profile, generation of contours, longitudinal profiles and cross sections etc. This is particularly useful for working simply with terrain data from LIDAR or digital models downloaded from public or private entities.

Alignments



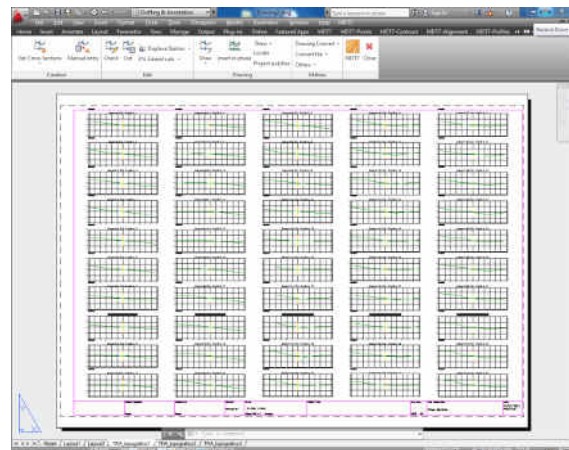
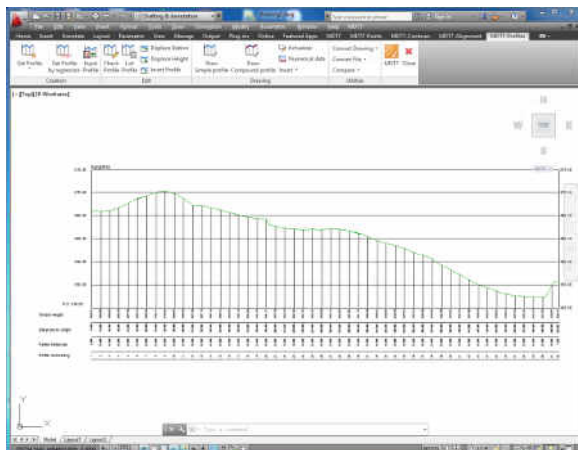
The horizontal alignments which will be used on longitudinal profiles and cross sections may be created interactively by means of lines, circular arc or clothoid segments and also from polylines, numeric input or importing files in the most usual commercial formats.

MDT includes tools for interactive editing as well as for dimensioning alignments with customisable styles, labelling of alignment data etc.

It also includes options for obtaining reports of points at intervals, calculating distances and intersections between alignment etc.

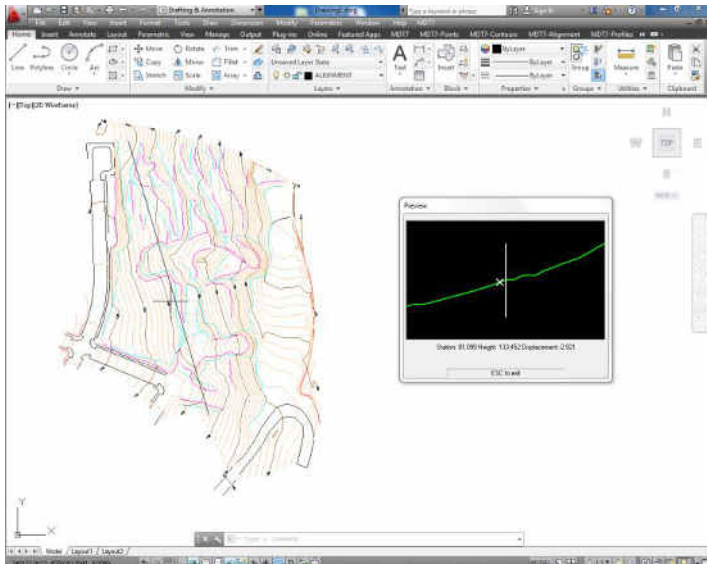
Profiles

Longitudinal profiles and cross sections may be calculated from a surface, 3D cartography or by regression of points near the alignment. The quick profile command allows the user to draw a line on the surface and rapidly show the profile.



The profiles may be updated automatically when the original alignment or surface have changed. Furthermore, it has a powerful CAD independent profile editor which allows graphic and numerical editing.

The drawing is totally customisable: model or paper space, sheet templates, text style and size, labels and numeric data, customised blocks etc.



Another interesting command simultaneously draws several profiles on different layers to show the different evolution stages of a terrain.

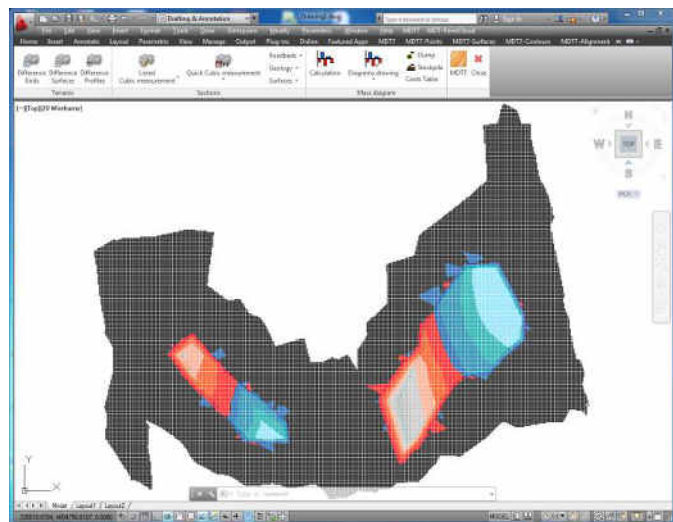
It also has tools for projecting 3D polylines or points in the profiles and the viewing in real time of cross sections based on the position of the cursor on the ground plan.

Volumes

Cut and fill volumes can be calculated from a comparison between meshes, surfaces or cross sections.

The results of meshes and surfaces are represented by areas using colour palettes, with a customisable legend and interval.

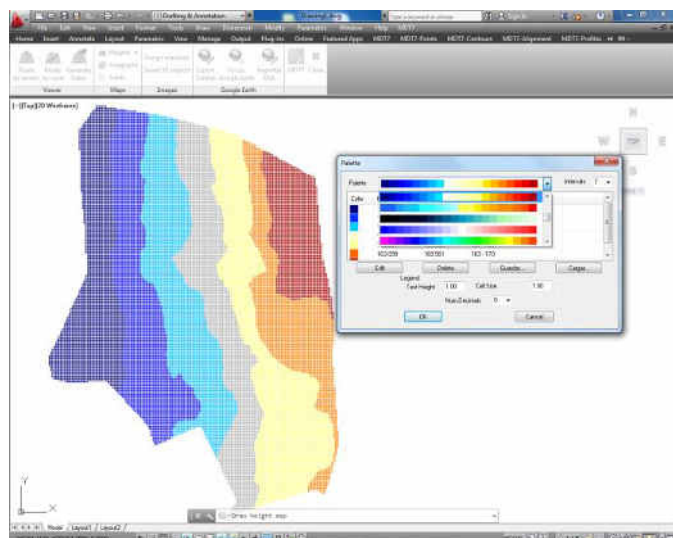
Calculation by profiles allows the application of the curvature corrections in line with the geometry of the alignment on the ground plan and excluding intervals that do not take part of the measurement.



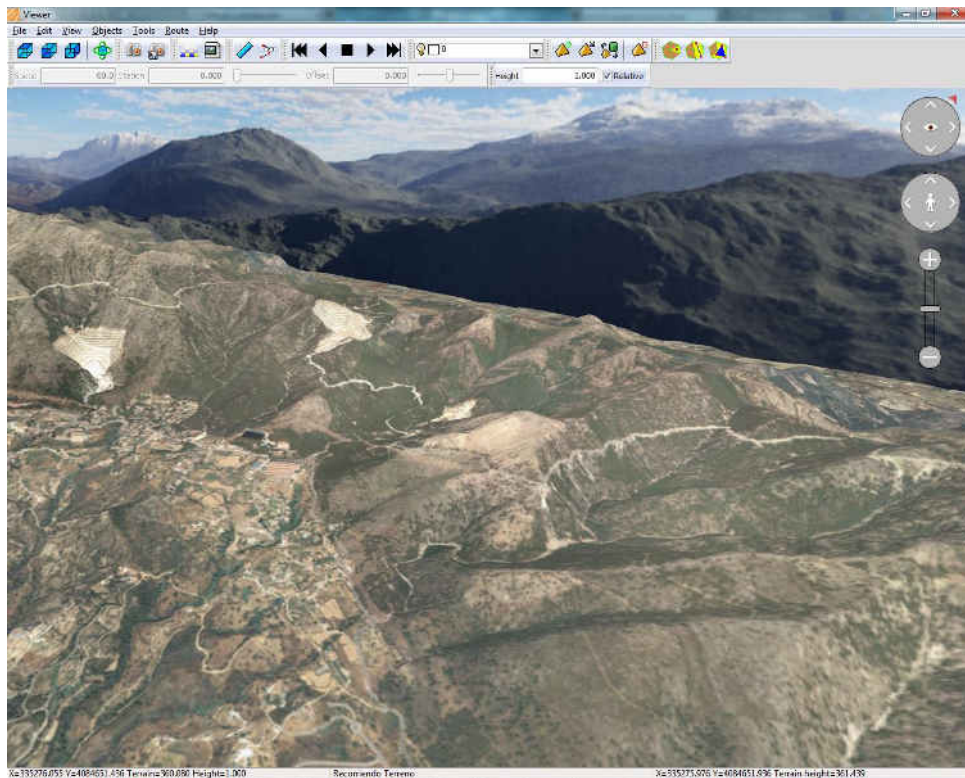
Maps – Realism

MDT can draw a 3-D mesh based on contours or surface and maps of heights, slopes, orientations or visibility from a point can be generated.

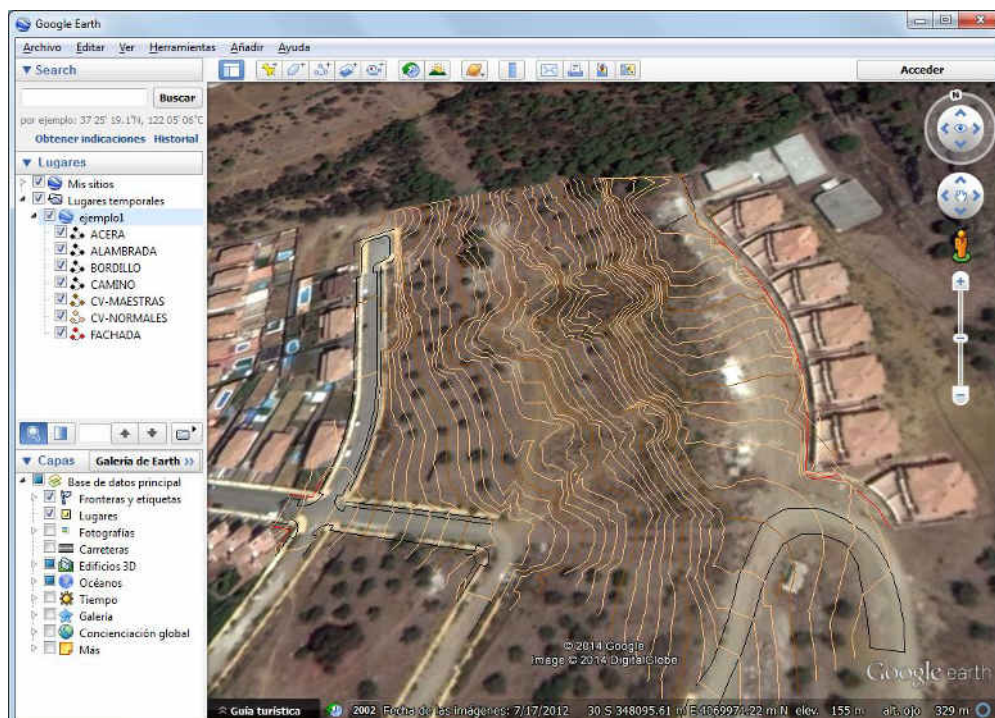
It includes commands for inserting georeferenced images and orthophotos in their real position on the terrain and assigning them to a surface or assigning predefined textures to different areas. The 3D objects library is also useful for improving presentations.



MDT includes a powerful terrain viewer which shows the surface with the textures applied and 3D objects with the possibility of customising the sky and the background. It also has options for measuring 3D distances, obtaining a quick profile, simulate flooding or generating a video based on the tour along a polyline.



On the other hand, MDT allows access to the web map services (WMS) provided by public and private entities in such a way that the user must only specify a window, choose the service and the program will automatically insert the image in the right place on the drawing. Another utility enables the user to export points, surface and layers of the drawing to Google Earth.

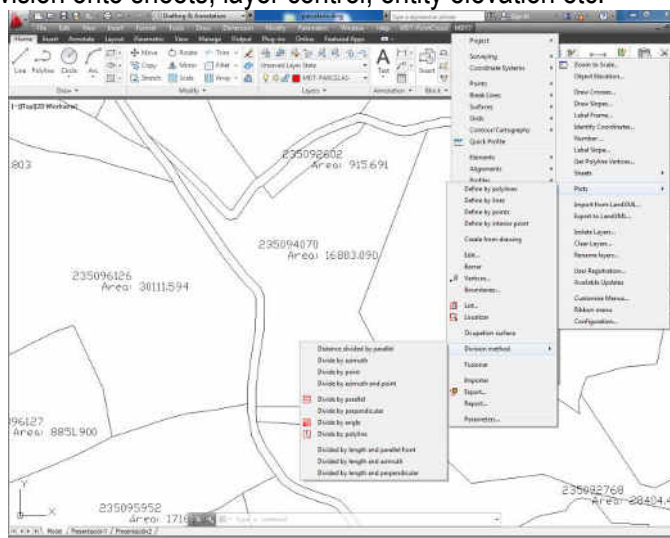


Utilities

MDT has multiple additional tools for the presentation of drawings such as the numbering of objects, draw coordinates and grids, slope drawing, division onto sheets, layer control, entity elevation etc.

The Plots menu includes options for creating plots from points, polylines or files in shape format and tools for division by surface, parallel and perpendicular to one side, azimuth, facade length etc. It may also generate various types of reports, export to data bases etc.

Other commands allow access to online support, downloading of updates, sending of drawings and associated files etc.



Requirements ⁽¹⁾

CAD	AutoCAD versions 2007 to 2019 and compatible versions BricsCAD Pro/Platinum versions 12 to 18 ZWCAD Professional/Enterprise versions 2012+ to 2015+, Classic, 2017 and 2018
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 support@aplitop.com to ask about these special cases.

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