

# Questions and Answers for AutoCAD Map 3D Surveying Tools

AutoCAD® Map 3D software is one of the leading engineering platforms for creating and managing spatial data. AutoCAD Map 3D bridges CAD and GIS by providing direct access to data and enables the use of AutoCAD® software tools for maintaining a broad variety of design and geospatial information.

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# 1. General Product Information

## 1.1. What are the AutoCAD Map 3D 2009 Surveying Tools?

The AutoCAD® Map 3D 2009 Surveying Tools help users create, visualize and analyze terrain models and improve design and as-built update processes when working with point data collected by surveying, scanning and GPS instruments and devices. The Surveying Tools help planners, drafters, engineers, and designers better utilize survey, GPS and LIDAR data in AutoCAD Map 3D 2009. The Surveying Tools provide

- Improved point data support.
- Surface creation capabilities.
- Additional Coordinate Geometry (COGO) commands.
- Import and export support for LandXML.
- Preview Application Programming Interface (API).
- User documentation including User's Guide and Developer's Reference.

## 1.2. Where can I access the AutoCAD Map 3D Surveying Tools and how much do they cost?

The AutoCAD Map 3D Surveying Tools are provided as free\* downloads to AutoCAD® Map 3D 2009 Subscription customers. The Surveying Tools and other extensions are available from within Subscription Center at [www.autodesk.com/subscriptioncenter](http://www.autodesk.com/subscriptioncenter)

The AutoCAD Map 3D Surveying Tools are for use only with licensed AutoCAD Map 3D software, and are subject to the terms and conditions of the Autodesk Software License Agreement that accompanies that licensed software.

## 1.3. Who can use the AutoCAD Map 3D Surveying Tools?

The AutoCAD Map 3D Surveying Tools are available exclusively for users of AutoCAD Map 3D 2009. In particular, they enable utilities, government agencies and departments, surveying, engineering and planning firms to easily utilize GPS and survey point data to create 3D base maps and accurately update drawings, maps and databases to reflect the as-found locations in the field.

## 1.4. What are the benefits of using the AutoCAD Map 3D Surveying Tools?

By leveraging the Surveying Tools, organizations can easily integrate data collected by surveying, scanning and GPS instruments and devices to

- Create and visualize 3D surfaces that are useful during planning and site assessment phases of a project.
- Accurately update drawings, maps and databases to reflect the as-found locations in the field.
- Draft accurate boundary information and perform cadastral data updates.

## 1.5. How do the AutoCAD Map 3D Surveying Tools help me create and visualize 3D terrain models that are useful during planning and site assessment phases of a project?

The Surveying Tools enable you to easily integrate point and contour data to create surfaces (also referred to as digital terrain models) that provide 3D perspectives to site plans and base maps. By combining surface, CAD and GIS data with aerial imagery using AutoCAD Map 3D software functions, you can effectively visualize sites in 3D and perform spatial, elevation, aspect, and slope analysis as well as perform sunlight studies, enabling you to make better decisions about land development projects.

## 1.6. What type of data can I use with the AutoCAD Map 3D Surveying Tools?

The AutoCAD Map 3D Surveying Tools enable you to easily utilize point and contour data in a variety of formats including point data in ASCII files, point and contour data stored in FDO Data Access Technology (FDO) data sources (for example, Oracle®, ESRI® ArcSDE® and ESRI SHP files) and point objects that exist in DWG files. You can use a combination of these data sources to create surfaces or accurately map locations of assets such as utility poles and pipelines.

**1.7. How do the Surveying Tools help integrate data coming from surveying, scanning and GPS instruments and devices?**

Using the AutoCAD Map 3D Surveying Tools you can quickly and easily import survey and GPS ASCII point files using industry-standard point descriptions such as PNEZD (point-northing-easting-elevation-description). Point data can be imported as AutoCAD block objects with attributes (for example, Northing, Easting, and Elevation) for use in updating drawings, maps and databases with accurate location information or can be used to create surfaces.

**1.8. How do AutoCAD Map 3D and the Surveying Tools compare to AutoCAD Civil 3D?**

AutoCAD Map 3D software and AutoCAD® Civil 3D® software provide geospatial and civil engineering professionals a variety of design and analysis capabilities. To help determine the appropriate application for your workflow, please consult the following chart and your Authorized Autodesk Reseller. To locate one near you, visit [www.autodesk.com/reseller](http://www.autodesk.com/reseller).

	<b>AutoCAD Map 3D 2009 +Surveying Tools</b>	<b>AutoCAD Civil 3D 2009</b>
<b>Target User</b>	Engineers, drafters, surveyors, GIS technicians and analysts	Civil engineers and designers
<b>Surveying</b>	<ul style="list-style-type: none"> <li>• Import raw survey data (ASCII)</li> <li>• Import point and contour data from FDO data sources</li> <li>• COGO</li> </ul>	<ul style="list-style-type: none"> <li>• Import raw survey data</li> <li>• Traverse and least squares adjustment</li> <li>• Survey figures</li> <li>• COGO</li> </ul>
<b>Design</b>	<ul style="list-style-type: none"> <li>• Surfaces (large datasets)</li> </ul>	<ul style="list-style-type: none"> <li>• Surfaces and grading</li> <li>• Parcels</li> <li>• Corridor modeling and road design</li> <li>• Pipe layout</li> </ul>
<b>Documentation</b>	<ul style="list-style-type: none"> <li>• Drafting standards (using AutoCAD Map 3D Industry Toolkits)</li> <li>• Reporting</li> </ul>	<ul style="list-style-type: none"> <li>• Plan production and drafting</li> <li>• Drafting styles and standards</li> <li>• Reporting</li> </ul>
<b>Data Exchange and Interoperability</b>	ESRI SHP, DGN, DWG™, MapInfo TAB, GML, LandXML, and SDF	Same as AutoCAD Map 3D
<b>Data Management and Team Coordination</b>	<ul style="list-style-type: none"> <li>• Multiuser drawing environment</li> <li>• Integration with data bases such as Oracle and Microsoft® SQL Server™</li> </ul>	<ul style="list-style-type: none"> <li>• Data shortcuts and xrefs</li> <li>• Advanced data management with Autodesk Vault (included)</li> </ul>
<b>Analysis and Simulation</b>	<ul style="list-style-type: none"> <li>• Geospatial analysis – spatial queries, thematic maps, buffers</li> <li>• Surfaces – elevation, slope, aspect</li> <li>• Sunlight studies</li> </ul>	<ul style="list-style-type: none"> <li>• Stormwater analysis and simulation with Hydraflow Storm Sewers Extension, Hydraflow Hydrographs Extension, and Hydraflow Express Extension</li> <li>• Geospatial analysis with AutoCAD Map 3D</li> </ul>

**1.9. How do I exchange surfaces created in AutoCAD Map 3D 2009 with other design and geospatial professionals using Autodesk, ESRI and other vendor’s software?**

The AutoCAD Map 3D Surveying Tools enable you to easily exchange DTMs in triangulated irregular network (TIN) format, including point and face data, via LandXML or GRID data in GeoTIFF format with other software packages such as AutoCAD Civil 3D and ESRI® ArcGIS®.

**1.10. What Coordinate Geometry (COGO) tools do the AutoCAD Map 3D 2009 Surveying Tools provide?**

AutoCAD Map 3D 2009 Surveying Tools provide additional coordinate geometry commands; Bearing/Bearing and Distance/Distance. These commands enable you to accurately set points based on projections from two existing lines or points and two bearings, and to specify a point based on two points and two distances to the new point.

### **1.11. Can I use LIDAR data with the Surveying Tools?**

Yes. AutoCAD Map 3D 2009 is engineered to handle large datasets. With the AutoCAD Map 3D 2009 Surveying Tools you can use LIDAR (Light Detection and Ranging) data to create surfaces. Surfaces can then be exported to GeoTIFF or LandXML files for use in other software packages.

### **1.12. What is the preview API that has been released with AutoCAD Map 3D 2009 Surveying Tools?**

The TIN Surface application programming interface (API) that has been released with the AutoCAD Map 3D Surveying Tools enables developers to extend the capabilities of the AutoCAD Map 3D Surveying Tools by extending and exposing software capabilities that aren't available through the graphic user interface (GUI). The TIN Surface API is a preview release and is subject to change in response to feedback Autodesk receives from application developers.

## **2. Product Users**

### **2.1. Who uses AutoCAD Map 3D?**

AutoCAD Map 3D software is intended for engineering and GIS professionals, mapping technicians, planners, and facilities/infrastructure designers and managers. It is intended for anyone who designs, creates, and maintains infrastructure; produces maps; and needs to use CAD and GIS data for design, planning, and management purposes. AutoCAD Map 3D integrates vector and raster data in a variety of design and GIS data formats.

The industries that can benefit most from AutoCAD Map 3D are utilities (electric, gas, water/wastewater), communications (telecommunications and cable), natural resources (for example, petroleum, mining, agriculture, environmental engineering and management, and water resources), and government agencies (for example, public works, land planning, and cadastral management). AutoCAD Map 3D is suitable for any application that requires creation and maintenance of infrastructure-related information in a precision graphical environment.

### **2.2. Who will find the AutoCAD Map 3D Surveying Tools beneficial?**

The AutoCAD Map 3D Surveying Tools can help engineering, surveying and GIS professionals including mapping and surveying technicians, planners, and facilities/infrastructure designers and drafters more easily utilize point and contour data with AutoCAD Map 3D 2009. The AutoCAD Map 3D Surveying Tools are suitable for any project where accurate location data for objects such as poles, cables, pipes and manholes or surface information can aid decision making.

## **3. Autodesk Subscription**

### **3.1. What is Autodesk Subscription?**

Autodesk® Subscription is the best way to stay current with the latest design technology, while gaining the benefits of simplified software management, easy budgeting, e-Learning, and web support. For a fixed annual fee, you get access to software enhancements that keep your design tools up to date and make the most of your investment. Autodesk Subscription includes the following:

- Access to all upgrades released during the subscription term
- Download of extensions for products under subscription
- Use of e-Learning lessons and knowledge assessments
- Web support for your Autodesk products under subscription (if included in your contract)
- Access to the members-only Subscription Center
- Subscription contract administration tools

To learn more, contact your [Autodesk Authorized Reseller](#).

Note: Certain program features may vary according to the product under subscription.

### **3.2. Who is Autodesk Subscription for?**

Autodesk Subscription is available to all users worldwide for most Autodesk products. Check with your Autodesk Authorized Reseller for product availability or view the current list. Certain Autodesk products are offered exclusively through Autodesk Subscription.

### **3.3. What is the Subscription Center?**

The Subscription Center is a password-protected online application where subscription members access program benefits, downloads, exclusive community content, and Subscription Administration where you view your subscription coverage reports and maintain your contact information.

### **3.4. What are the benefits of Autodesk Subscription?**

Get the benefits of increased productivity, predictable budgeting, and simplified license management with Autodesk Subscription. Customers get new upgrades of their Autodesk software and any incremental product enhancements, if these are released during the subscription term, by electronic download or physical shipment; incremental product enhancements via extensions; and exclusive license terms available only to subscription members. A range of community resources, including web support direct from Autodesk technical experts and self-paced training to extend user skills, make Autodesk Subscription the best way to optimize the Autodesk software investment.

To learn more, visit [www.autodesk.com/subscription](http://www.autodesk.com/subscription). AutoCAD Map 3D subscription is sold by Autodesk Authorized Resellers on behalf of Autodesk.

## **4. Purchase Information**

### **4.1. Where can I purchase AutoCAD Map 3D?**

AutoCAD Map 3D 2009 is available worldwide. Contact your local Autodesk Authorized Reseller for more information. To locate one near you, visit [www.autodesk.com/reseller](http://www.autodesk.com/reseller).

### **4.2. Can I try AutoCAD Map 3D 2009 software before I buy it?**

Yes, you can try it out by requesting the AutoCAD Map 3D 2009 software trial version. This fully functioning version of AutoCAD Map 3D 2009 is available as a free\* 30-day trial. You can obtain a trial version of AutoCAD Map 3D from your Autodesk Authorized Reseller or online at [www.autodesk.com/map3d-trial](http://www.autodesk.com/map3d-trial).

### **4.3. Can I crossgrade from AutoCAD?**

Yes, you can crossgrade to AutoCAD Map 3D 2009 from AutoCAD software. If you are an engineering or GIS professional who needs to access and edit data in a variety of formats, AutoCAD Map 3D 2009 software is for you.

### **4.4. Do I have to purchase AutoCAD Map 3D with subscription?**

No, you do not have to purchase AutoCAD Map 3D with subscription. However, only current subscription customers receive automatic product upgrades. There are several subscription pricing options, including single and multiyear contracts, to best meet your needs. Contact your reseller for more information about Autodesk® Subscription.

## **5. Compatibility and System Requirements**

### **5.1. Can I install the AutoCAD Map 3D 2009 Surveying Tools on other AutoCAD platform-based applications?**

No, the AutoCAD Map 3D 2009 Surveying Tools can only be installed on AutoCAD Map 3D 2009 software.

### **5.2. Can I use English versions of the Surveying Tools with localized builds of AutoCAD Map 3D 2009 software?**

English versions of the AutoCAD Map 3D Surveying Tools will not install or run on localized versions of AutoCAD Map 3D 2009 software.

### 5.3. Which version of LandXML do the AutoCAD Map 3D 2009 Surveying Tools support?

The AutoCAD Map 3D 2009 Surveying Tools provide LandXML 1.1 import and export support for Surface data types.

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