

Questions and Answers

Bridging the gap between CAD and GIS, AutoCAD® Map 3D software enables engineering and GIS professionals to work with the same data in a single environment for more efficient workflows.

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1. General Product Information

1.1. What is AutoCAD Map 3D 2010?

AutoCAD® Map 3D software is a leading engineering platform for creating and managing spatial data. Using open-source Feature Data Object (FDO) technology, AutoCAD Map 3D 2010 provides direct access to the leading data formats used in design and geographic information systems (GIS) and enables the use of AutoCAD® software tools for maintaining a broad variety of spatial information. Bridging the gap between CAD and GIS, AutoCAD Map 3D makes it possible for engineering and GIS professionals to work with the same data and enables design processes to integrate geospatial functions in a single environment for more efficient workflows. The results are better designs, increased productivity, and better data quality.

1.2. What's new in AutoCAD Map 3D 2010?

In addition to the powerful AutoCAD Map 3D core functionality for accessing, creating, and maintaining precise geospatial information, the new features in AutoCAD Map 3D 2010 help you work faster and more efficiently on the tasks that you do every day:

- **AutoCAD 2010 software**—AutoCAD Map 3D 2010 software contains all the features and functionality of AutoCAD 2010, installed automatically—so you know you are working with proven, reliable, industry-leading software. To find out more about AutoCAD 2010 features, visit www.autodesk.com/autocad-features.
- **Easy-to-Use Ribbon Interface**—The new ribbon-style user interface (UI) can help increase overall productivity and reduce the number of steps to reach a command. This interface presents command options in a concise visual format, so you can quickly choose the commands you need. The ribbon is customizable and expandable, so it can adjust to fit each user.
- **Increased Options for Importing Survey Data**—AutoCAD Map 3D survey functionality focuses on asset data collection and mapping. This functionality helps you organize, manage, and integrate your field-collected data within the AutoCAD Map 3D environment. The functionality includes direct import of ASCII point and LandXML data, survey datastore and schema, point groups, and creation of FDO features from survey features.
- **New Options for Coordinate Geometry**—Additional coordinate geometry (COGO) tools are available for accurately locating and creating features captured via traditional survey methods. In addition to existing Bearing/Distance, Azimuth/Distance, Angle/Distance, and Deflection/Distance options, new methods include Orthogonal/Offset, Bearing/Bearing, Distance/Distance, and Inverse Report.
- **Enhanced Data Analysis Capabilities**—Seven new overlay operations enhance the analytical capabilities of AutoCAD Map 3D 2010 geospatial software. Compare or combine FDO-connected data stores for faster, better decision making. Enhancements to the Expression Builder enable you to construct composite queries you can apply across multiple FDO-accessed data sources.
- **New Workflow Framework**—Utilizing Windows® Workflow™ Foundation, AutoCAD Map 3D makes it easy to automate repetitive tasks using a new and powerful workflow framework and user interface. This framework makes it easy to build, save, and share simple and complex workflows using a visual editor. Workflows can include logic and initiate calls to other workflows—all with a single mouse click—helping improve efficiency and consistency in results.
- **More Data Creation and Editing Options**—Continued enhancements provide easier data creation and editing of features accessed via FDO. Improvements to object snap functionality include the addition of intersection, extension, apparent intersection, and parallel object snaps. In addition, multipart, multiring, and geospatial features with “m” or “z” values can be easily manipulated. With the Properties Palette, it's easy to edit feature attributes by changing data values for multiple features in a single operation.
- **Better Data Exchanges**—Improved Bulk Copy functionality enables you to use Display Manager layers and include calculated and joined data fields when copying data to new data stores. Bulk Copy can also use the map coordinate system with reprojected data. In addition, AutoCAD Map 3D 2010 includes new LandXML import and

export functionality that makes it easy to exchange data with AutoCAD® Civil 3D® software and other applications that support LandXML format.

- **Additional FDO Providers**—AutoCAD Map 3D 2010 includes support for Microsoft® SQL Server® 2008 Spatial, giving you another option for your spatial data storage needs. Additional Autodesk FDO providers, including the [Autodesk FDO Provider for GE Smallworld](#), are available to Autodesk® Subscription members at www.autodesk.com/subscription.
- **Better Raster reprojections**—Enhancements to reprojection algorithms provide more accurate reprojections of raster imagery accessed through FDO technology.
- **More Install Options with 64-bit Support**—Support for 64-bit operating systems provides more flexibility in operating system configurations and access to larger addressable memory space.

Go to www.autodesk.com/map3d-features to learn more about the benefits and advanced functionality of AutoCAD Map 3D 2010.

1.3. How does AutoCAD Map 3D integrate CAD, civil engineering, and GIS?

AutoCAD Map 3D is a premier tool for integrating CAD, civil engineering, and GIS. Its strength lies in the open and flexible environment that enables you to work with virtually any data, regardless of format. As a result, you can get the full value from your existing data investments. DWG™ and ESRI® SHP formats are among the most prevalent in the CAD, engineering, and GIS worlds, and with AutoCAD Map 3D you can create, edit, and distribute these and many other industry-standard format with the precision of a CAD system.

1.4. What level of interoperability can I expect between AutoCAD Map 3D and AutoCAD Civil 3D?

You can easily share parcels, alignments, structures, and other objects created in AutoCAD Civil 3D software. In addition, you can share surfaces created in AutoCAD Civil 3D with AutoCAD Map 3D by exporting the surface to a digital elevation model (DEM).

1.5. What is FDO data access technology?

Feature Data Objects (FDO) data access technology is the mechanism that enables Autodesk geospatial products and enterprise applications to work natively with spatial data stored in relational databases and files, and access web-based services. To help make it easier for developers to extend capabilities of FDO, Autodesk released the technology as an open source project (<http://fdo.osgeo.org>) under the Open Source Geospatial Foundation (OSGeo, www.osgeo.org). This initiative allows developers all over the world to tap into powerful geospatial data access technology. With the power FDO, AutoCAD Map 3D makes it easy for you to take advantage of the open source world by extending data access with third-party and open source FDO Providers for data stores not currently supported by Autodesk. FDO is included in AutoCAD Map 3D, AutoCAD Civil 3D, Autodesk MapGuide® Enterprise and Autodesk® and Topobase™. For more information, including documentation and product details, see www.autodesk.com/fdo.

1.6. Which data stores can I access, edit, and convert in AutoCAD Map 3D?

Using open-source FDO technology, you can directly and simultaneously access multiple databases and files, including Oracle®, Microsoft SQL Server, ESRI ArcSDE, MySQL®, ODBC, ESRI SHP, Autodesk's spatial data file (SDF), and raster files (read-only for JPEG, JPG2K, MrSID®, TIFF, ECW, DEM, ESRI Grid, DTED, and NITF). AutoCAD Map 3D can also consume web services (OGC WMS and WFS). Direct read/write helps increase data access speed and help ensure accuracy of information by minimizing data conversion.

In addition, AutoCAD Map 3D enables you to read, write, and convert data between standard formats, including DWG, Arc/Info® coverages, SHP and E00 from ESRI, MapInfo MIF/MID™, MapInfo TAB, MicroStation® DGN (V7 and V8), Generalized Markup Language (GML 3.1.1), Ordnance Survey MasterMap (DNF) (GML2, read-only), Vector Product Format (VPF, read-only), Autodesk SDF, and Spatial Data Transfer Standard (SDTS, read-only). After working with the data, you can maintain it in a DWG file, convert it to an external file, or move it into a spatial database.

1.7. What raster image formats does AutoCAD Map 3D support?

AutoCAD Map 3D provides two methods for inserting imagery. Image format support depends on the method used.

Supported raster formats using the Image feature (_mapiinsert) include BIL(certain types), BMP, CAL, CALS-1, CG4, DEM*, DIB, DOQ*, DTED*, Earth Resource Mapping's ECW*, ESRI GRID*, FLI, FLC, GeoTIFF, GIF, GP4, IG4, JPG, JPEG, JPEG2K*, LizardTech's MrSID*, MIL, NITF*, PCT, PCX, PICT, PNG, RLC 1&2, RLE, RST, TGA, TIF, and TIFF (various compression types).

Supported raster formats using FDO technology (Display Manager) include DEM, TIFF (TIF), ECW, JP2, MrSID, GeoTIFF, DTED, and NITF.

*Requires installation of the AutoCAD® Raster Design object enabler.

1.8. Why do I need AutoCAD Raster Design software when AutoCAD Map 3D can view and display raster digital elevation models?

AutoCAD Map 3D software provides the ability to view and display DEMs. However, you can't edit or modify these and other images without the use of AutoCAD Raster Design software. Raster data functionality in AutoCAD, AutoCAD Map 3D, and AutoCAD Raster Design software is as follows:

Raster Functionality	AutoCAD	AutoCAD Map 3D	Raster Design	Image Type*
Cleanup Tools				
Despeckle			X	Bitonal
Deskew			X	All
Change Bias			X	All
Invert			X	All
Touch Up (pixel-level edit)			X	Bitonal
Raster to Vector Conversions				
Vectorize primitives and text			X	Bitonal
Raster entity manipulation			X	Bitonal
Optical character recognition			X	Bitonal
REM region operations			X	All
Image Management				
Save imagery in the DWG file			X	Bitonal
Image Insertion/Manipulation				
Correlate	X	X	X	All
Scale, Rotate	X	X	X	All
Mask	X	X	X	All
Mirror	X	X	X	All
Clip	X	X	X	All
Affine Transformation upon Insert	X	X	X	All
Edit color map (change data interpretation, value distribution, color assignment, create/save color palettes)		X	X	Digital Elevation Models

Edit color map (assign bands)			X	Multispectral
Raster Functionality	AutoCAD	AutoCAD Map 3D	Raster Design	Image Type*
Apply color ramps		X		Digital Elevation Models
Merge images		X	X	All
Merge vector to image			X	All
Crop			X	All
Remove			X	All
Export or save as other formats			X	All
Export World File Correlation			X	All
Coordinate Transform upon Insert		X	X	All
True (pixel by pixel) Coordinate Transform upon Insert			X	All
Rubbersheet			X	All
Capture (snapshot)			X	All
Raster data query			X	All
Edit multiresolution imagery			X	MrSID, ECW, JPEG2000
Image Enhancement				
Adjust brightness, contrast, and fade	X	X	X	All
Turn transparency on/off	X	X	X	Bitonal, Grayscale, Index Color, True Color
Change colors		X	X	Bitonal
Filter (smooth, thicken, thin, skeletonize)			X	Bitonal
Histogram edit of brightness and contrast			X	Grayscale, Index Color, True Color
Nonlinear contrast adjustment			X	Grayscale, Index Color, True Color
Equalize, Threshold, Convolve			X	Grayscale, Index Color, True Color
Convert to grayscale		X	X	Grayscale, Index Color, True Color
Combine or change colors			X	Grayscale, Index Color
Assign transparency to a specific color			X	Grayscale, Index Color, True Color
Export and import palettes			X	Grayscale, Index Color
Change color depth			x	Bitonal, Grayscale, Index Color, True Color

*Image types include bitonal (1-bit), grayscale (4-bit or 8-bit), indexed color (8-bit), true color (24-bit or 32-bit), digital elevation model (floating point), and single-band integer (16-bit or 32-bit).

1.9. What are web mapping and web feature services?

Open Geospatial Consortium (OGC)–compliant Web Map Services (WMS) and Web Feature Services (WFS) provide digital maps (WMS) and geographic features (WFS) across the web. Using AutoCAD Map 3D and FDO technology, you can access these services via the Internet and add this web-based content to your designs and maps.

1.10. What is a spatial data file?

The spatial data file is a portable geo-enabled open data format that provides constraint-based attribute creation and allows you to take full advantage of FDO-based capabilities in Autodesk geospatial software. SDF is the native file format for FDO and leverages all of its strengths: open API (application programming interface), high performance, database-like table architecture, and large data set sizes. This easy-to-manage file-based data repository is a smart choice when an enterprise database doesn't make sense. SDF supports rich geometry, multiple tables, and spatial indexing, and provides a solid foundation for a smooth transition to an RDBMS in the future if the need arises. SDF lets you organize and manage your data as real-world features and is ideal for storing medium-to-large (5 to 500 MB) data sets such as cadastral fabrics, building outlines, roads, and utility networks.

1.11. What are MapGuide Open Source, Autodesk MapGuide Enterprise, and Autodesk MapGuide® Studio?

Autodesk MapGuide Enterprise software offers one of the most flexible web mapping platform for distributing design and spatial information quickly, easily, and cost-effectively via the web. MapGuide Open Source software shares a great deal of its code base with Autodesk MapGuide Enterprise, but since its release to OSGeo by Autodesk in late 2005, it has been further developed and extended by developers in the Open Source community.

MapGuide Open Source software, an application made available through OSGeo, provides a fast, easy, low-cost way to get started developing and deploying web-mapping applications. Users of MapGuide Open Source software benefit from the innovation, rapid release cycles, and large ecosystem of web-mapping applications driven by the Open Source geospatial development community.

Autodesk MapGuide Enterprise software leverages all the innovation benefits of MapGuide Open Source as the base software product, but is backed by commercial-grade support, services, and quality assurance from an established software vendor.

Autodesk MapGuide® Studio software, the authoring environment designed for use with Autodesk MapGuide Enterprise and MapGuide Open Source, helps manage all aspects of preparing maps and geospatial data for distribution on the Internet. Upload data files, connect to databases, and stylize maps over the web. Both web designers and application developers can easily create rich Web 2.0–type mapping applications using a modular system of flexible layout templates and application widgets.

1.12. Why use Autodesk MapGuide Enterprise with AutoCAD Map 3D?

When used together, AutoCAD Map 3D and Autodesk MapGuide Enterprise can help organizations use data from initial design to web deployment more effectively—without translation or data loss. The result is a powerful foundation for meeting core geospatial needs.

Work done in AutoCAD Map 3D is directly compatible with Autodesk MapGuide Enterprise because of shared common FDO data access technology. When you build a map in AutoCAD Map 3D, you can access and use information stored in different formats (for example, ESRI ArcSDE and SHP, Oracle format) via direct FDO connectivity. Therefore the same map with the same stylization is instantly available online to web users when published to Autodesk MapGuide Enterprise. So regardless of whether the data consists of files from your desktop or from a database, Autodesk MapGuide Enterprise can quickly make the data available via the web.

You can also maximize the full value of information created in AutoCAD Map 3D by easily building custom applications with the flexible Autodesk MapGuide development platforms (PHP, Java®, and .NET) and powerful APIs. Users can work with your data in a streamlined manner, helping you get the most value from your work—inside and outside your organization.

By turning to AutoCAD Map 3D and Autodesk MapGuide Enterprise, organizations can

- Integrate spatial data for all geospatial, engineering, and online needs
- Streamline the process of creating, maintaining, and disseminating data

- Leverage CAD-trained staff to keep GIS data current
- Accelerate business processes with easy-to-use, real-time information
- Realize more value from all investments in GIS technology and data

For more information, including documentation and product details, see www.mapguide.com.

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 (petroleum, mining, agriculture, environmental engineering and management, and water resources), and government (public works, land planning, and cadastral management). AutoCAD Map 3D is suitable for almost any application that requires creation and maintenance of infrastructure-related information in a precision graphical environment.

2.2. If I am using AutoCAD software, why should I upgrade to AutoCAD Map 3D?

AutoCAD Map 3D 2010 has the strengths of AutoCAD software but also gives you the power to efficiently manage design and geospatial data. AutoCAD Map 3D provides innovative engineering design and drafting tools that are familiar for the AutoCAD user.

- **Directly access and exchange data**

Access and exchange the leading data formats used in design and GIS—no matter how the data is stored. For example, access road, cadastral, topographic, and environmental data in the most commonly used formats and integrate data collected in the field via survey and GPS devices. Work in hybrid IT environments with existing CAD and GIS systems and data by enabling CAD users to access and edit spatial information in a familiar CAD environment. Combine engineering and GIS data for better decision making and more efficient business processes across departments and job functions.

- **Give designs real-world context**

Work with more than 4,000 real-world coordinate systems, or define your own custom coordinate system. Perform coordinate transformations and use tools such as Transform, Rubbersheeting, and Track Coordinates to accurately georeference your AutoCAD design data. This enables you to quickly integrate data from a variety of sources in order to create accurate drawings, designs, and maps that can be used by field personnel, other departments, and other geospatial software applications.

- **Create cleaner, more accurate designs and data**

Automate the correction of common drafting and digitizing errors using powerful Drawing Cleanup tools. Delete duplicates, including text objects; correct undershoots, dangling objects, and more. Help reduce common errors in your design information, supporting data accuracy throughout the design, build, operate, and maintenance lifecycle.

- **Use powerful mapping, analysis, and visualization tools**

When you need to create maps or visualize and analyze data in a clear, effective way, AutoCAD Map 3D is your best solution. Support better decision making and produce more professional designs, maps, plans, proposals, and reports that communicate your design intent quickly and effectively.

- **Easily distribute maps and design data**

AutoCAD Map 3D helps you easily distribute geospatial and design data in a variety of ways to help meet your organization's needs. Quickly publish designs, plans, and maps to the Internet using Autodesk MapGuide Enterprise software, or distribute them as individual georeferenced DWF™ files, multisheet DWF map books, and paper plots. Provide teams throughout your organization, including mobile field force, with the latest information. Improve communication with contractors, clients, and customers by more securely providing them the information they require while helping save printing costs and valuable time.

To find out more about moving from AutoCAD to AutoCAD Map 3D software, visit www.autodesk.com/map3d.

2.3. What is the Autodesk geospatial value chain and how do I know at what stage my organization is?

The Autodesk geospatial value chain provides a useful model to help understand how organizations currently use geospatial technology, and provides a deliberate path for growing and extending capabilities over time. Autodesk geospatial software bridges CAD and GIS systems and can extend the value of spatial information by using existing resources, reducing redundancy and error propagation, and increasing operational efficiency. From CAD design to enterprise solutions, Autodesk geospatial solutions can be used in various configurations to integrate geospatial data with that of other departments, organizations, and applications.

Stage 1

At Stage 1, organizations use a CAD product such as AutoCAD or AutoCAD LT® software to design and manage their infrastructure data. These organizations have often migrated from paper-based, Mylar, or vellum files, and store their infrastructure data in CAD files—such as DWG drawings—in a file directory on a server. AutoCAD software is a world-leading design tool used to create much of the world's infrastructure design data. However, AutoCAD does not support geographic projections, the ability to access, search, and edit the same sets of DWG files, or read/write access to geospatial data formats. When an organization using AutoCAD needs to add location intelligence to its data, bring in geospatial data from other sources, or permit multiple users to search through and edit the same data, it has outgrown Stage 1 and may be ready for Stage 2 or Stage 3.

Stage 2

Autodesk Geospatial makes it easy for engineers and designers to manage and share mapping data—such as regional scale data sets, cadastral information, and utility network data. At Stage 2, an organization uses CAD files as its primary data source and an engineering solution such as AutoCAD Map 3D to collaborate and share this infrastructure information. With AutoCAD Map 3D software, multiple people can easily access CAD data and work across multiple drawing files. Because more than one person can work on a drawing simultaneously, AutoCAD Map 3D makes it easier to share data or split the workload. In addition, teams can access data sets from many different CAD and GIS file formats—such as ESRI Shapefiles, MapInfo® TAB files, MicroStation® DGN, and raster data from multiple coordinate systems—and combine it with DWG files, and the information will overlay properly. Using AutoCAD Map 3D software, project teams can use their AutoCAD skills and training while taking advantage of traditional GIS tools and functions. When an organization wants to extend its CAD information to more people and leverage analysis capabilities—to know, for example, where there are undeveloped parcels or how many manholes are on new roads—they are ready to move to Stage 3.

Stage 3

In Stage 3, an organization can increase the value of its data by applying standards and organizing data. By structuring and cleaning up CAD and geospatial data, what is known as *classification*, an organization begins to define data as real-world features with standard allowable attributes. Classification helps to ensure data consistency for all users and can increase the value and potential uses of that data. This is where CAD and GIS truly work together. By classifying data and leveraging FDO technology—the Autodesk geospatial software data access platform—organizations can enhance access to large data sets and use their CAD and geospatial data together to make business decisions, check inventories, or identify specific items, such as the number of cables, valves, or new roads they must maintain.

In Stage 3, organizations store feature data in a structured file format such as Autodesk spatial data file (SDF) or SHP. With SDF, organizations can benefit from organizing and managing data as real-world features without the cost or management overhead of a spatial database. At Stage 3, organizations can easily extend the reach of their information by using a web mapping application such as Autodesk MapGuide Enterprise to deliver powerful, easy-to-use online maps and related information to audiences of all sizes.

Stage 4

To extend the use of their information, organizations move from Stage 3 to Stage 4. They move from a file-based environment using DWG, SHP, or SDF format to a spatial database environment using the full functionality of a relational database management system (RDBMS). With an RDBMS, hundreds or even thousands of people can create, edit, and manage the same data and organizations can help improve security and create more sophisticated data models. Using FDO technology, Autodesk geospatial products work natively with spatial data stored in Oracle, SQL Server, and MySQL, as well as with ESRI ArcSDE middleware. As a result, organizations are able to fully use the security, scalability, sophisticated data models, and multiuser read/write power of an RDBMS. AutoCAD Map 3D provides tools that make data and schema migration from SDF or SHP files to an RDBMS easy. While the information in Stage 3 and Stage 4 may be the same, organizations in Stage 4 utilize the added power of an RDBMS to scale the availability and management of their geospatial information.

Stage 5

When an organization moves from Stage 4 to Stage 5, it shares spatial data with other departments and applications, making spatial data a central part of its IT ecosystem. In this stage, geospatial data and functionality get woven into other business systems, integrating with assessor databases, permitting systems, enterprise resource planning (ERP) systems, and more. The spatial application server supplies geospatial intelligence and data to these other applications. Autodesk, resellers, partners, and system integrators build powerful solutions to meet the organization's specific business goals and processes. Autodesk Topobase provides sophisticated solution modules that make it easy for organizations to establish and manage a Stage 5 deployment.

By moving up the geospatial value chain, organizations increasingly harness their geospatial data for a variety of business functions. By making the transition from Stages 1 to 3, organizations gain the ability to organize data effectively, implement real-world coordinate systems, and work with larger data sets. Moving from Stages 3 to 5 delivers increased scalability and security, the ability to complete long transactions, and integration with other systems.

For more information about Autodesk geospatial software visit www.autodesk.com/geospatial.

3. Purchase Information

3.1. Where can I purchase AutoCAD Map 3D?

AutoCAD Map 3D 2010 is available worldwide. Contact your local Autodesk Authorized Reseller for more information. To locate one near you, visit www.autodesk.com/reseller.

3.2. Can I try AutoCAD Map 3D 2010 software before I buy it?

Yes, you can try it out by requesting the AutoCAD Map 3D 2010 software trial version. This fully functioning version of AutoCAD Map 3D 2010 is available as a free* 30-day trial. You can download a trial version or order a trial DVD from your Autodesk Authorized Reseller or online at www.autodesk.com/autocadmap3d-trial.

Note: The trial version of AutoCAD Map 3D software allows only a single user to run the application and cannot be run in a multiuser Citrix® environment.

3.3. Can I crossgrade from AutoCAD?

Yes, you can crossgrade to AutoCAD Map 3D 2010 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 2010 software is for you.

3.4. 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 product upgrades of the software. 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.

3.5. What benefits does an AutoCAD Map 3D software subscription offer?

Get the benefits of increased productivity, predictable budgeting, and flexible license management with the Autodesk® Subscription program. You get new upgrades of your Autodesk software and incremental product enhancements, if these are released during your subscription term, and exclusive license terms that are available only to Subscription members. A range of community resources, including web support direct from Autodesk product support specialists and self-paced training to extend your skills, make Autodesk Subscription the best way to optimize your investment in (insert product name here) software.

The annual fee includes:

- Autodesk Subscription offers a way to make your AutoCAD Map 3D software costs predictable. Whether you opt for a one-year subscription or a multiyear contract, the costs are known for the entire term of your contract.
- Product enhancements may include extensions, bonus packs or other rich content for (insert product name here) – exclusive to Subscription members. Only Subscription members can access these new product downloads that add new functionality and/or features to your AutoCAD Map 3D software. Easily adaptable into your current workflows, apply them immediately to your new projects to help you stay competitive.
- Autodesk Subscription makes managing software licensing hassle-free and flexible. You have added flexibility to allow your employees to use their AutoCAD Map 3D software—in the office or at home. Better yet, designers are entitled to run previous versions of the AutoCAD Map 3D software concurrently with the latest release (under certain conditions), so updates won't cause disruptions to ongoing projects where clients or partners are running previous versions.
- Get what you need to stay productive with AutoCAD Map 3D software. With web support you get direct, one-to-one communication with Autodesk product support specialists for answers to your installation, configuration, and troubleshooting questions. And you don't need to keep track of support records and email trails, because we'll do it for you!
- Get your team up to speed quickly with access to a complete library of interactive training tools and high-quality, self-paced e-Learning lessons that allow users to increase their productivity and master new skills. E-Learning lessons give you a quick and easy way to learn about the features and functionality of AutoCAD Map 3D software. These short lessons are available on demand and complement more in-depth training provided through www.autodesk.com/atc or Autodesk Authorized Resellers.

To learn more, take the Subscription tour at www.autodesk.com/subscription

3.6. What product downloads are available for AutoCAD Map 3D for Subscription members?

For the latest product downloads, please visit www.autodesk.com/map3dsubscription. Product downloads may include the latest release of the software, extensions, bonus packs, or other rich content for AutoCAD Map 3D – exclusive to Subscription members and can be downloaded from the Subscription Center www.autodesk.com/subscriptionlogin.

3.7. Where can I purchase data for my projects?

Autodesk has teamed up with leading geospatial data providers to offer geospatial data to users. To find a wide range of geospatial data, including aerial, vector, and weather, visit www.autodesk.com/geodata.

4. Compatibility

4.1. Does AutoCAD Map 3D 2010 software support the Windows Vista® operating system?

AutoCAD Map 3D 2010 software supports Windows Vista Ultimate, Business, and Enterprise operating systems. In addition, AutoCAD Map 3D 2010 takes advantage of some Windows Vista capabilities, specifically Windows Vista thumbnail

previews for DWG and DWF files in the Windows Internet Explorer® browser, display of AutoCAD properties in the detail tab of Internet Explorer, and ability to employ Windows Vista search tools using text strings found in drawing properties, text, mtext, and so forth, in the DWG file.

4.2. Is a native 64-bit version of AutoCAD Map 3D 2010 software available?

Yes, a native AutoCAD Map 3D 2010 software 64-bit version is available.

Note: You cannot install AutoCAD 2009 64-bit on a 32-bit operating system or AutoCAD 2009 32-bit on a 64-bit operating system.

4.3. Is AutoCAD 2010 included with AutoCAD Map 3D 2010?

Yes. AutoCAD Map 3D 2010 is built on AutoCAD 2010 software and is enhanced with a suite of data creation, editing, and mapping tools. It contains all the features and functionality of AutoCAD 2010, which is automatically installed when you install AutoCAD Map 3D 2010.

4.4. Does AutoCAD Map 3D 2010 work with AutoCAD 2010?

Yes. Because AutoCAD Map 3D 2010 has the same file format as AutoCAD 2010, AutoCAD Map 3D 2010 can read AutoCAD 2010 files. In addition, any maps created in AutoCAD Map 3D 2010 can easily be shared with AutoCAD 2010 by saving the AutoCAD Map 3D file as a DWG file using the `Mapexportcurrentmaptodwg` command.

4.5. Has the AutoCAD 2010 DWG file format changed from the AutoCAD 2004, 2005, 2006, 2007, 2008, and 2009 products?

The AutoCAD 2010 DWG file format has been updated from the AutoCAD 2007, 2008, and 2009 format. The AutoCAD 2007 file format was updated and is different from the DWG format of AutoCAD 2004, 2005, and 2006. The AutoCAD 2010 DWG file format is also the same DWG format used in the latest releases of Autodesk's industry-specific products such as AutoCAD® Architecture, AutoCAD Map 3D, AutoCAD Civil 3D, AutoCAD® Electrical, and AutoCAD® Mechanical software applications. Nonetheless, you can still easily share files between design teams using any previous version of AutoCAD software. As in the past, this new AutoCAD version opens DWG files created by any Autodesk products in all earlier DWG versions.

4.6. Does AutoCAD Map 3D 2010 read and save drawings created by earlier releases of AutoCAD Map 3D?

Yes. AutoCAD Map 3D 2010 reads drawing files from all previous versions of AutoCAD Map 3D and AutoCAD software. AutoCAD Map 3D 2010 has a built-in SaveAs function so you can save drawings to and from AutoCAD releases using the 14, 2000, 2004, and 2007 DWG formats. In addition, you can use the `SaveAs AutoCAD Release 12 DXF™` command to support releases prior to AutoCAD Release 14.

4.7. Can I run AutoCAD Map 3D 2010 side by side with other AutoCAD platform-based applications?

Yes, AutoCAD Map 3D 2010 can be installed side by side with any other AutoCAD or Autodesk industry-specific solution, including AutoCAD 2010-based products. These products include AutoCAD, AutoCAD Architecture, AutoCAD Civil 3D, AutoCAD Electrical, AutoCAD Mechanical, AutoCAD® Inventor® Suite products, AutoCAD® Revit® Suite products, Autodesk® Revit® Structure, AutoCAD® MEP, Autodesk® 3ds Max®, Autodesk Topobase, Autodesk® VIZ, and AutoCAD LT software applications.

4.8. Does AutoCAD Map 2010 support multiple CPU systems?

Yes, AutoCAD Map 3D 2010 supports multiple CPU systems. The performance of AutoCAD graphics and rendering systems will benefit from multiple CPU systems.

4.9. Does AutoCAD Map 3D 2010 include Autodesk® Design Review?

Yes. Autodesk® Design Review software is an optional component that can be selected during the installation process.

4.10. Does AutoCAD Map 3D 2010 software work with Autodesk® Vault technology?

No. AutoCAD Map 3D 2010 does not support the Autodesk® Vault application.

4.11. Does AutoCAD Map 3D 2010 include Autodesk® Impression?

No. AutoCAD Map 3D 2010 does not include Autodesk® Impression software in the box, but Autodesk Impression software can be downloaded from the Autodesk Subscription Center by subscription customers for the following products: AutoCAD, AutoCAD Architecture, AutoCAD Civil 3D, AutoCAD Map 3D, and AutoCAD MEP software.

4.12. Does AutoCAD Map 3D 2010 work with Microsoft SQL Server 2008?

Yes. AutoCAD Map 3D 2010 software includes a new FDO Provider for Microsoft SQL Server 2008 that enables customers to take full advantage of new spatial functionality in the Microsoft SQL Server 2008 product release. AutoCAD Map 3D 2010 software provides direct read and write access to spatial data within the SQL Server 2008 database.

4.13. What are the system requirements for AutoCAD Map 3D 2010 software?

To find the latest systems requirements for AutoCAD Map 3D software, visit www.autodesk.com/map3d.

5. Licensing

5.1. Does AutoCAD Map 3D 2010 software use product activation for stand-alone licenses?

Yes, with AutoCAD Map 3D 2010 software the authorization process includes product activation.

5.2. What is product activation?

Product activation is a software-based license management technology incorporated into many Autodesk products. It is a secure and trouble-free process that authenticates licensed users running Autodesk software. The process verifies that the serial number is legitimate and has not been activated on more computers than are eligible. It does not affect the ability of licensed users to operate their software the way they have always done. It is similar to the authorization mechanism in Autodesk products in the past but provides additional capabilities for security and special product versions, such as student and trial versions.

5.3. Why is Autodesk requiring Autodesk customers to activate their software?

Product activation is a simple way to reduce and deter unauthorized use and casual copying of Autodesk products, with little to no impact on customers.

5.4. Which Autodesk products use this activation technology?

Almost all Autodesk products use or will use this technology, with the exception of Autodesk Design Review, AutoSketch[®], Autodesk MapGuide Studio, and Autodesk Media & Entertainment software products.

5.5. How do I activate my software?

Through the activation and registration interface, you can activate your product 24 hours a day, seven days a week over the Internet or by email. Either option takes only a few steps to complete and requires your product serial number and registration information.

5.6. What if I have more than one computer? Will product activation let me use the software on multiple machines?

Autodesk recognizes that some users may need to operate the software when they are away from their usual work location. To accommodate this need, the product activation technology and the AutoCAD End-User License Agreement allow an employee to install the software on a second computer owned by the employee's company, provided it is for use away from the employee's usual work location, the two copies are used only by that employee and no other, and only one copy of the software is ever in use at any one time.

5.7. Where can I find more information about software activation?

More information about product activation can be found at www.autodesk.com/activation.

6. Citrix Deployment

6.1. Can AutoCAD Map 3D be deployed on Citrix technology?

Yes. AutoCAD Map 3D 2009 and 2010 software completed validation testing with Citrix XenApp[™] software through the Citrix Ready[™] program. The Citrix Ready designation identifies products that are compatible with a Citrix application delivery environment, simplifying the selection process for Citrix customers.

6.2. What are the benefits of deploying AutoCAD Map 3D on Citrix XenApp?

According to Citrix, deploying AutoCAD Map 3D software on XenApp software organizations can

- Facilitate IT centralization efforts that can reduce costs through server consolidation and single-point management
- Help improve IT efficiency by reducing or eliminating the need to touch each user desktop
- Remotely troubleshoot through session shadowing over the network
- Centrally install and roll out upgrades and patches to users quickly and painlessly

For more information, visit www.autodesk.com/citrix.

6.3. Are other AutoCAD platform–based applications available that are Citrix Ready?

No. AutoCAD Map 3D is the only AutoCAD–based application that has been designated Citrix Ready.

6.4. Why is AutoCAD Map 3D the only AutoCAD platform–based application that is Citrix Ready?

In response to requests from customers, AutoCAD Map 3D was selected for the Citrix Ready certification program in 2008. Other Autodesk products may be added to the program at a later date as we evaluate customer satisfaction with AutoCAD Map 3D.

6.5. How does AutoCAD Map 3D performance in a Citrix environment compare to AutoCAD Map 3D installed in a stand-alone environment?

Performance of AutoCAD Map 3D on Citrix technology varies by task. The following guidelines are typical of applications deployed using Citrix technology:

- Access speeds to databases (for example, Oracle and ArcSDE) may show significant improvement because the data will likely reside on the same server or another server, resulting in reduced network traffic to client machines.
- Large drawing files (for example, DWG files) hosted on the server do not have to go through a local area network or wide area network so access speeds are often improved.
- Graphics performance may be affected because most servers are not configured with high-end graphics systems.

For complete details about Citrix Ready AutoCAD Map 3D performance, refer to the *AutoCAD Map 3D Citrix XenApp 4.5 Scalability Analysis* benchmark test at www.autodesk.com/citrix.

6.6. Are there functional limitations for the Citrix Ready AutoCAD Map 3D version?

Yes, there may be certain functional limitations for both AutoCAD Map 3D when run on a Citrix server, as compared with running this application on a desktop. Go to www.autodesk.com/citrix to learn more about the results of Citrix Ready validation testing and any documented functional limitations.

6.7. What are the recommended user limits for Citrix Ready AutoCAD Map 3D?

User limits vary depending on hardware and network parameters. For more information, refer to the *AutoCAD Map 3D Citrix XenApp 4.5 Scalability Analysis* benchmark test at www.autodesk.com/citrix.

6.8. Can I customize the AutoCAD Map 3D user interface differently for individual users in a Citrix deployment?

Yes. For complete instructions, refer to the *Citrix Ready AutoCAD Map 3D Installation and Setup Guide* at www.autodesk.com/citrix.

6.9. What are recommended hardware configuration and network requirements for Citrix Ready AutoCAD Map 3D?

For complete details, refer to the *Citrix Ready AutoCAD Map 3D 2010 Installation and Setup Guide* at www.autodesk.com/citrix.

6.10. How is Citrix Ready AutoCAD Map 3D software licensed?

If you purchase the Citrix Ready version of AutoCAD Map 3D, a license addendum allows you to install one copy of the software on your Citrix server, providing access up to a number of concurrent users equal to the number of seats purchased. For more information, see the AutoCAD Map 3D Citrix Ready License Addendum available at www.autodesk.com/citrix.

6.11. How does Citrix Ready AutoCAD Map 3D licensing differ from AutoCAD Map 3D network licensing?

Network licensing is appropriate for environments in which a license server is fulfilling requests for licenses to AutoCAD Map 3D clients running on desktop systems. Citrix Ready licensing is appropriate for environments in which both the license server and the AutoCAD Map 3D application are running on a server system with Citrix XenApp 4.5 or 5.0. Network licensing and Citrix Ready licensing differ in the way licenses are granted to requests that originate from the same server. With network licensing, requests for a license from the same machine result in the same license returned to the user. With Citrix Ready licensing, requests for a license from the same machine (in this case the Citrix server) result in a different license returned to the user, up to the number of Citrix seats purchased.

6.12. Can I exchange single-user or network licensing for AutoCAD Map 3D Citrix licensing?

If you have already purchased an AutoCAD Map 3D single-user or network license, it may be crossgraded to an AutoCAD Map 3D Citrix license. For more information, contact your Autodesk Account Executive or your local Autodesk Authorized Reseller.

6.13. Where can I find more information about Citrix licensing?

More information about Citrix licensing can be found at www.autodesk.com/citrix

7. Consulting, Training, and Support

7.1. What consulting services are available for AutoCAD Map 3D 2010?

Autodesk Consulting provides customer consulting offerings for project assessments, process audits, opportunity assessments, networking setup, application porting, and other custom services to help you streamline business processes and get the best possible return on your investment in Autodesk technology. AutoCAD and AutoCAD Map 3D users planning to migrate to AutoCAD Map 3D 2010 can take advantage of these services. For more information about Autodesk Consulting, contact your Autodesk Account Executive or your local Autodesk Authorized Reseller; or visit www.autodesk.com/consulting.

7.2. Where do I find training courses for AutoCAD Map 3D 2010?

Training courses are available from both Autodesk Consulting as well as through the Autodesk Authorized Training Center (ATC[®]) network.

Training courses through Autodesk Consulting include custom training to match your organization's specific needs, Autodesk Classroom Training and AutoCAD certification. To obtain more information about Autodesk's training services, visit www.autodesk.com/map3d-training.

You can also enroll in instructor-led training at Autodesk Authorized Training Centers around the world. These training centers use Autodesk Official Training Courseware (AOTC) created by Autodesk to deliver comprehensive courses for new and intermediate AutoCAD Map 3D 2010 users. Autodesk Authorized Training Centers also deliver custom courses on AutoCAD 2010 and other Autodesk products. To learn more, visit www.autodesk.com/atc.

7.3. How can I find technical support information for AutoCAD Map 3D 2010?

Visit www.autodesk.com/map3d-hotissues to find a knowledge base of commonly asked support questions. Also, you can ask questions and read information about the use of Autodesk products in the peer-to-peer discussion groups at www.autodesk.com/discussion. Autodesk hosts topical discussion groups about specific products, including AutoCAD Map 3D 2010, and about general topics, such as drafting techniques and customization. Alternatively, Autodesk software manuals and documentation are a great source of answers to your support questions. Easy searching of documentation from within AutoCAD Map 3D can be accomplished via the InfoCenter.

7.4. How do I obtain direct technical support?

Direct technical support is available from both Autodesk and Autodesk Authorized Resellers.

In addition, Autodesk Subscription provides a complete software support, and training package that simplifies your technology upgrades and boosts your productivity. Purchase of Autodesk Subscription includes web support from Autodesk technical experts for all your installation, configuration, and troubleshooting questions. Web support via subscription

provides fast, complete answers to technical questions to help you get more from your investment in Autodesk software. Interactive contact with Autodesk product experts right at the desktop helps improve productivity and avoid expensive downtime.

To learn more about Autodesk Subscription, contact your Autodesk Account Executive or your Autodesk Authorized Reseller, or visit www.autodesk.com/subscription.

The Autodesk Enterprise Support program is a worldwide program that provides expert technical support by telephone for all major Autodesk products from a single source. Contact your Autodesk Account Executive or Autodesk Authorized Reseller for more details. Autodesk Preferred Solution Providers (PSPs) and Autodesk Authorized Resellers also provide telephone support services for AutoCAD Map 3D software and all other Autodesk products. In the United States and Canada, call 800-964-6432 to locate a PSP or reseller near you, or visit www.autodesk.com/reseller.

7.5. How do I find out if a product update is available for AutoCAD Map 3D 2010?

If Autodesk releases a product update for AutoCAD Map 3D 2010, it will be easy to access and install it using the Communication Center in AutoCAD Map 3D 2010. Look at the top of the Communication Center window to see if an update is available. AutoCAD Map 3D 2010 automatically recognizes if you have the most up-to-date release and prompts you if there is an update available. When you click the link, AutoCAD Map 3D 2010 automatically downloads and installs the update. In addition, updates are available on the AutoCAD Map 3D website www.autodesk.com/map-downloads.

8. For Developers

8.1. Does AutoCAD Map 3D have an open architecture for add-on products?

Yes. AutoCAD Map 3D is the development platform of choice for AutoCAD-based mapping and GIS applications. With an extensive API, AutoCAD Map 3D provides third-party developers a platform to build top-quality, add-on application products. Many Autodesk-registered third-party application developers are shipping industry-specific applications that run on top of AutoCAD Map 3D software.

8.2. Where can I see examples of third-party add-ons for AutoCAD Map 3D?

Autodesk has many partners, ranging from Autodesk Developer Network members to Independent Software Vendors and Resellers, who build packaged add-ons for Autodesk products. Third-party software may be found to fit a wide variety of technical and information domains. BOSS International, for example, creates AutoCAD Map 3D-based software for hydrology modeling in municipal and utility engineering shops. Other partners sell data or services to complement the Autodesk-based geospatial data lifecycle.

Third-party partner products and services may be found through the Autodesk.com website. A searchable index is provided for locating partners by key words or you may choose to browse through the list of partners to find a solution that might fit your needs.

The partner catalog may be found at <http://partnerproducts.autodesk.com/catalog/default.asp>.

8.3. What Autodesk geospatial products can be customized by third-party developers?

Any of the products from the Autodesk geospatial product line may be customized by third-party developers for in house projects or to build commercial add-on products. More information about customizing each of the Autodesk geospatial products may be found on www.autodesk.com and in the product literature for each individual product.

8.4. Is AutoCAD Map 3D customizable?

Yes, AutoCAD Map 3D is highly customizable. APIs include AutoLISP[®], Microsoft[®] Visual Basic[®], ADSRX, C++ (ObjectARX[®] programming environment), ActiveX[®], and .NET.

8.5. What are the advantages of the .NET API in AutoCAD Map 3D?

With .NET API, you can create applications using the language you are familiar with (for example, C#, C++). .NET is easy to learn and use. In addition, .NET minimizes difficulties found in other programming languages, such as memory

allocation/deallocation problems in C++, reference counting in COM/ActiveX, and performance and limited user interface issues in VBA.

Refer to Microsoft .NET documentation for more advantages of using .NET.

8.6. What is the Geospatial Platform API that has been released with AutoCAD Map 3D 2010?

The Geospatial Platform API is a .NET API that shares common components between AutoCAD Map 3D 2009 and later, and Autodesk MapGuide Enterprise 2009 and later technology. With the Geospatial API you can build applications on top of AutoCAD Map 3D that use Autodesk's FDO technology. With the Geospatial Platform API you can

- Directly access data from various data sources using FDO
- Program against FDO-accessed features without worrying about AcDb constraints
- Use a highly scalable architecture to work with FDO accessed features
- Use the Display Manager API to create stylized views of feature data encapsulated in AutoCAD entities
- Use the FDO integration API to control how multiple data sources are aggregated, including controlling what kind of entity is created from that data
- Add data access and functionality enhancements through the open source developer community
- Use the FDO integration API to control how multiple data sources are aggregated
- Use AutoCAD/Map/Geospatial Platform API to convert existing feature data encapsulated in AutoCAD entities to FDO
- Utilize AutoCAD selection API in tandem to provide powerful interactive feature selection
- Build custom applications that share business logic and common code between AutoCAD Map 3D, Autodesk MapGuide Enterprise, and MapGuide Open Source

8.7. What benefits does ObjectARX bring to AutoCAD Map 3D?

Because the product contains the AutoCAD ObjectARX API, AutoCAD Map 3D software also supports most custom ObjectARX objects built by third-party developers. In addition, with ObjectARX technology you can

- Use the MapBooks API to programmatically create tiles and sheets, and then print or plot them or publish them to DWF files
- Create topologies that are custom ObjectARX objects. Users can then group, edit, and analyze multiple graphic entities that comprise a topology as a single entity (such as lines, polylines, and arcs in a network topology).
- Build cleanup and editing functions. This capability allows direct access to the database (as opposed to working through an API), resulting in faster operations.

Read and query multiple drawing databases (DWG files) and manipulate objects and data in those drawings. For example, query into a work session the objects that represent a fiber optic cable spanning multiple map sheets (source drawings). Then edit a portion of the entire cable, and save the edits back to the original source drawings.

8.8. What options are there for me to become an Autodesk developer business partner?

Autodesk offers a range of partner programs tailored to the technology and business needs of different kinds of third-party companies. The Autodesk Developer Network provides API-level support and introductory marketing support for developers who either need technical help with in-house projects or have a small product idea or would like to prove it out. The Independent Software Vendor program offers expanded sales and marketing support for companies exploring a business model based around Autodesk add-on product development, Autodesk-based geospatial consulting services, or who are selling complementary data or services in a heavily Autodesk-centric client environment. Visit the Autodesk Developer Network (ADN) website at www.autodesk.com/adn for more information.

Follow the links on the website for more information about how to become an official Autodesk partner.

8.9. What support is available for developers?

The Autodesk Developer Network is a worldwide business and technical network of independent companies, organizations, and individuals, which serves over 3 million users. Developers who are part of ADN are eligible for technical and marketing support. Visit the ADN website at www.autodesk.com/adn for more information.

*Free products are subject to the terms and conditions of the end-user license agreement that accompanies download of the software.

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