

Features and Benefits

AutoCAD® Map 3D software is the leading engineering solution for creating and managing spatial data. Bridging the gap between CAD and GIS, AutoCAD Map 3D provides direct access to the leading data formats used in design and GIS. AutoCAD Map 3D enables the use of AutoCAD® tools for maintaining a broad variety of geospatial information and allows design processes to integrate GIS functions in a single environment for more efficient workflows. The results are better designs, increased productivity, and better data quality. When combined with Autodesk MapGuide® Enterprise software, AutoCAD Map 3D is the quickest way to publish data to the web or intranet.

This release is the most powerful ever for creating and managing precise spatial data. Explore how AutoCAD Map 3D 2009 software helps you work faster and more efficiently on the tasks you do every day.

See how AutoCAD Map 3D 2009 software stacks up against previous releases in the [AutoCAD Map 3D Release Comparison Matrix](#)

AUTOCAD MAP 3D FEATURES AND BENEFITS

Feature	Description	Benefit
<p>Built on the new AutoCAD® 2009 platform</p>	<p>AutoCAD Map 3D 2009 is built on the latest release of AutoCAD® software and is enhanced with a suite of geospatial tools. It contains all the features and functionality of AutoCAD 2009, which is automatically installed when you install AutoCAD Map 3D 2009, so you know you're working with proven, reliable, industry-leading software.</p> <p>To find out more about AutoCAD 2009 features, visit www.autodesk.com/autocad-features</p>	<ul style="list-style-type: none"> • Lower your cost of operation by using existing in-house expertise with Autodesk design software. • It is easy to find workforce skilled in Autodesk design software. They can quickly become productive and have shorter learning times when using AutoCAD Map 3D.
<p>Geographic Coordinate Systems</p>	<p>Work with more than 4,000 real-world coordinate systems or define your own custom coordinate system and use tools such as transform, rubber-sheeting and track coordinates to accurately geo-reference your AutoCAD® design data.</p>	<ul style="list-style-type: none"> • With geo-referenced design data you can quickly integrate data from a variety of sources to create accurate drawings, designs, and maps. • Distribute accurate data to field personnel, other departments, and other geospatial software applications.
<p>Direct Data Access</p>	<p>AutoCAD Map 3D software integrates computer-aided design (CAD) and geographic information system (GIS) data. Directly access and edit spatial data that resides in a variety of data sources including files and databases such as DWG™ and ESRI SHP, Oracle® and ESRI® ArcSDE® managed databases or use Oracle, Microsoft® SQL Server™ and MySQL to store spatial data without expensive middleware. Access raster imagery and connect to web services such as Web Map Services (WMS) and Web Feature Services (WFS) to take advantage of publicly available data sources. Direct access means no data translations, which helps ensure data integrity.</p>	<ul style="list-style-type: none"> • Work in hybrid IT environments with existing CAD and GIS systems and data. • Combining engineering and GIS data contributes to better decision making and results in more-efficient business processes across departments and job functions.

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<p>Data Exchange</p>	<p>AutoCAD Map 3D interoperates with all major design and GIS software, so you can 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.</p>	<ul style="list-style-type: none"> • Easily exchange data with colleagues, contractors and clients. • Provide GIS deliverables for government agencies.
<p>Data Clean up</p>	<p>Using Drawing Cleanup tools you can automate the often time-consuming correction of common drafting and digitizing errors. Delete duplicates, correct undershoots and dangling objects, and more. Help ease the integration of data into your GIS or mapping system with clean and accurate spatial data.</p>	<ul style="list-style-type: none"> • Ensure your design information is free of common drafting and digitizing errors. • Help maintain data accuracy throughout the Design, Build, Operate, and Maintenance (DBOM) lifecycle.
<p>DWG™ Query</p>	<p>Using DWG query functionality, multiple users can access, search and edit the same sets of DWG files or base maps simultaneously. This efficient and reliable way to work collaboratively with DWG based information reduces the need for version control and minimizes time wasted waiting for data.</p>	<ul style="list-style-type: none"> • Find the right project information for the task. • Increase productivity by enabling multiple users to work simultaneously while sharing design data.
<p>Lightweight COGO Tools</p>	<p>Input and Inquiry tools help you create and measure simple Coordinate Geometry (COGO) for lines, curves, closed polylines, and polygons. This functionally streamlines the process of drawing plats and existing conditions by allowing for the input of geometry in terms of bearing, direction, deflection and azimuth angle.</p>	<ul style="list-style-type: none"> • Save time entering survey data. • Easily verify the accuracy of your existing information.

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CAD editing on Geospatial Data	<p>Data accessed through FDO can be directly edited with standard AutoCAD commands such as Pedit, Trim, Break, Join, Offset, Extend, Rotate, Move, and Cut/Copy/Paste. Easily edit polygon objects with new split and merge functions and use the new Expression Builder to populate attributes with data calculations and intrinsic object properties.</p>	<ul style="list-style-type: none"> • Use accurate and precise CAD tools and CAD trained workforce to create and edit CAD and GIS data without conversion. • Split and merge functionality is ideal for cadastral management.
Classification	<p>Organize objects in your drawing by the real-world features that they represent (e.g. roads, parcels, cables or water pipes). When you create an object using object classification, the object automatically takes its properties and values from its object class, maintaining consistency and establishing standards in your drawing. By applying a classification to an existing or new object, you can be assured that it meets your standards for both data and display.</p> <p>To download free industry specific toolkits that can help fast-track the classification process, visit www.autodesk.com/map-downloads</p>	<ul style="list-style-type: none"> • New and experienced staff can improve productivity and drafting efficiency while maintaining data quality during the data creation and capture phases of a project. • Ease integration of design data from contractors by ensuring it matches your companies drafting standards.
Map Creation and Stylization	<p>Cartography tools enable you to create maps that in the past had to be created with additional GIS specific software. Easily create stylized maps that highlight specific features or information such as service areas, zoning districts, land usage, pipe and cable installation dates and diameters, and much more. Call out details with attribute driven labels that provide text along a curve and segment stitching functionality. Blend data using transparency, save and reuse styles in any project - saving time and streamlining map production. Move beyond basic CAD maps to advanced cartography and presentations.</p>	<ul style="list-style-type: none"> • Produce more professional designs, maps, plans, proposals, and reports. • Support decision making and effectively communicate your design intent quickly and clearly.

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<p>GIS Analysis</p>	<p>Answer questions about your data and make decisions. Utilize information in vector and tabular formats and link the data together. Perform data queries, create thematic maps, build topologies, create reports, and perform buffer and tracing analysis, and much more. With integrated GIS tools, AutoCAD Map 3D provides easy visualization and evaluation of design and asset management projects.</p>	<ul style="list-style-type: none"> • Quickly visualize, evaluate and validate spatial and non-spatial information. • Create better designs and improve infrastructure operation and maintenance decisions.
<p>GRID (Raster) Surfaces</p>	<p>Visualize and analyze large-scale topographic information—digital elevation models (DEM) and ESRI GRID files—for elevation, slope, and aspect, as well as create contours and perform sunlight studies with hillshading. Use draping functionality to combine topography data with aerial photographs and vector data for stunning and revealing 3D renderings that can be published to 3D DWF files for viewing in free Autodesk® Design Review software by non-technical users.</p>	<ul style="list-style-type: none"> • Your presentations and plans come to life with amazing accuracy, creating visuals that everyone can understand. • Submit proposals that have a lasting effect on project decision makers and your reputation.
<p>Database Integration</p>	<p>AutoCAD Map 3D provides open, standards-based database support. Easily join CAD objects to commonly used databases such as Microsoft® Access and easily store CAD and GIS data in popular relational database management systems (RDBMSs) including ESRI® ArcSDE® managed databases. Use existing data models or create your own schemas using straightforward tools and use databases such as Oracle®, Microsoft® SQL Server™ or MySQL® to store spatial data without expensive middleware.</p>	<ul style="list-style-type: none"> • Take advantage of information that resides in databases, enabling you to easily combine graphical design and GIS data with tabular information in one view. • Support planning and infrastructure asset management activities by searching, filtering, analyzing, and editing spatial and non-spatial information.

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Data Management Tools	Easily and effectively manage spatial data in virtually any format. Use intuitive tools to quickly and easily create users, define schemas (databases and files) or load data models via XML Metadata Interchange (XMI) from industry standard modeling programs. Easily move and convert data that resides in one data store to another (e.g., SDF/SHP to Oracle). AutoCAD Map 3D acts as a hub for managing large amounts of spatial data, allowing you to unlock legacy spatial information and streamline workflow.	<ul style="list-style-type: none"> • Easily manage and convert information between differing data stores supporting design and as-built data flow to GIS and asset management solutions. • Save valuable IT resources by enabling an administrator with little database expertise to define users and data storage parameters.
Spatial Data File (SDF)	The spatial data file (SDF) enables you to organize and manage your data as real-world features. Increased storage capacity and faster performance compared to DWG make this easy-to-manage file-based data repository 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.	<ul style="list-style-type: none"> • SDF is a portable geo-enabled open data format that provides constraint based attribute creation and allows you to take full advantage of Autodesk Geospatial software FDO based capabilities. • SDF is ideal for storing medium to large (5-500 MB) data sets such as cadastral fabrics, building outlines, roads and utility networks.
Metadata	Maintain your investment in spatial data with tools to create and edit metadata (the who, what, when, where, why, and how) about your spatial information and publish it in standard formats including International Organization for Standardization (ISO) (19115 and 19139) and Federal Geographic Data Committee (FGDC). With automatic metadata creation it is easy for you to share your data with other people in your organization or externally with contractors and regulatory agencies.	<ul style="list-style-type: none"> • Ease data transfer and interpretation by new users. • Mitigate effect of staff turnover and knowledge loss. • Search information to support multidepartment and interdisciplinary usage. • Easily track data changes over time.

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<p>Publishing Tools</p>	<p>Distribute your geospatial data, maps and designs in a variety of ways to meet your organizations needs. For instance, create and design maps within AutoCAD Map 3D and quickly publish them to the internet using Autodesk MapGuide® Enterprise software, or distribute them as individual geo-referenced DWF™ files, multisheet DWF Map Books and paper plots. Help ensure that customers and teams throughout the organization are using the latest information.</p>	<ul style="list-style-type: none"> • Cost-effectively distribute spatial information across and beyond your organization while save printing costs and valuable time. • Enable customer service agents, managers, field operations and external contractors to access the information they require to make better decisions and improve effectiveness. • Using free* Autodesk Design Review software, team members can digitally review, measure, mark up, and comment on 2D and 3D designs, plans and maps while protecting your intellectual property.
<p>Extensibility via Open Source</p>	<p>With the power of FDO Data Access Technology (FDO) on the desktop, 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 (e.g., ESRI Personal Geodatabase and PostGIS).</p> <p>To help make it easier for developers to extend capabilities of FDO, Autodesk released FDO as an open source project (http://fdo.osgeo.org) under the Open Source Geospatial Foundation (OSGeo) www.osgeo.org. This initiative enables developers all over the world to tap into powerful geospatial data access technology.</p>	<ul style="list-style-type: none"> • Get additional return on your investment in software and spatial information by using free and low cost solutions to access data that resides in existing enterprise and GIS systems.

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Robust API	<p>AutoCAD Map 3D comes with robust .NET application programming interfaces (APIs) that organizations can use to create custom tools and automate common procedures.</p> <p>Additionally, AutoCAD Map 3D and Autodesk MapGuide Enterprise software share a unified geospatial API as well as unified FDO data access technology that can be used to build custom applications which share business logic and common code.</p>	<ul style="list-style-type: none">• Further enhance the capabilities of the software and cost-effectively create custom applications for specific functions within the organization.• Easily deliver geospatial applications on the desktop and over the Web.

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