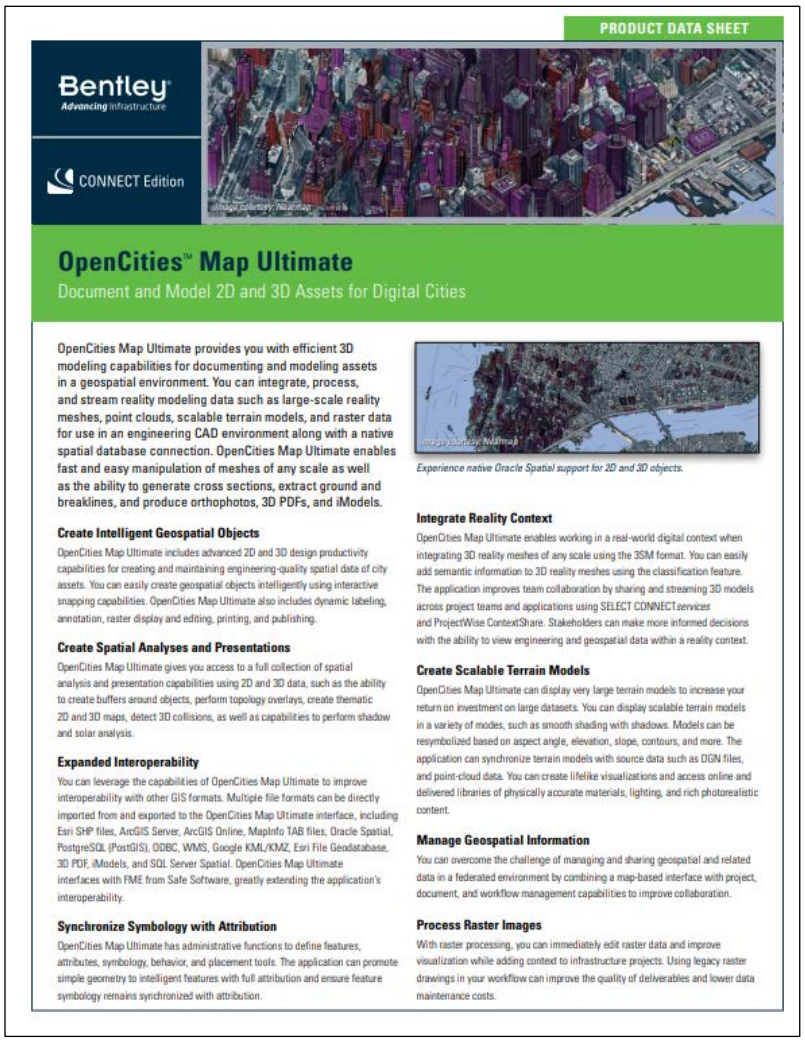
Bentley
Advancing Infrastructure

OpenCities™ Map Ultimate Document and Model 2D and 3D Assets for Digital Cities



PRODUCT DATA SHEET

Bentley
Advancing Infrastructure

CONNECT Edition

OpenCities™ Map Ultimate

Document and Model 2D and 3D Assets for Digital Cities

OpenCities Map Ultimate provides you with efficient 3D modeling capabilities for documenting and modeling assets in a geospatial environment. You can integrate, process, and stream reality modeling data such as large-scale reality meshes, point clouds, scalable terrain models, and raster data for use in an engineering CAD environment along with a native spatial database connection. OpenCities Map Ultimate enables fast and easy manipulation of meshes of any scale as well as the ability to generate cross sections, extract ground and breaklines, and produce orthophotos, 3D PDFs, and iModels.

Experience native Oracle Spatial support for 2D and 3D objects.

Create Intelligent Geospatial Objects

OpenCities Map Ultimate includes advanced 2D and 3D design productivity capabilities for creating and maintaining engineering-quality spatial data of city assets. You can easily create geospatial objects intelligently using interactive snapping capabilities. OpenCities Map Ultimate also includes dynamic labeling, annotation, raster display and editing, printing, and publishing.

Create Spatial Analyses and Presentations

OpenCities Map Ultimate gives you access to a full collection of spatial analysis and presentation capabilities using 2D and 3D data, such as the ability to create buffers around objects, perform topology overlays, create thematic 2D and 3D maps, detect 3D collisions, as well as capabilities to perform shadow and solar analysis.

Expanded Interoperability

You can leverage the capabilities of OpenCities Map Ultimate to improve interoperability with other GIS formats. Multiple file formats can be directly imported from and exported to the OpenCities Map Ultimate interface, including Esri SHP files, ArcGIS Server, ArcGIS Online, MapInfo TAB files, Oracle Spatial, PostgreSQL (PostGIS), ODBC, WMS, Google KML/KMZ, Esri File Geodatabase, 3D PDF, iModels, and SQL Server Spatial. OpenCities Map Ultimate interfaces with FME from Safe Software, greatly extending the application's interoperability.

Synchronize Symbology with Attribution

OpenCities Map Ultimate has administrative functions to define features, attributes, symbology, behavior, and placement tools. The application can promote simple geometry to intelligent features with full attribution and ensure feature symbology remains synchronized with attribution.

Integrate Reality Context

OpenCities Map Ultimate enables working in a real-world digital context when integrating 3D reality meshes of any scale using the 3SM format. You can easily add semantic information to 3D reality meshes using the classification feature. The application improves team collaboration by sharing and streaming 3D models across project teams and applications using SELECT CONNECT*services* and ProjectWise ContextShare. Stakeholders can make more informed decisions with the ability to view engineering and geospatial data within a reality context.

Create Scalable Terrain Models

OpenCities Map Ultimate can display very large terrain models to increase your return on investment on large datasets. You can display scalable terrain models in a variety of modes, such as smooth shading with shadows. Models can be resymbolized based on aspect angle, elevation, slope, contours, and more. The application can synchronize terrain models with source data such as DGN files, and point-cloud data. You can create lifelike visualizations and access online and delivered libraries of physically accurate materials, lighting, and rich photorealistic content.

Manage Geospatial Information

You can overcome the challenge of managing and sharing geospatial and related data in a federated environment by combining a map-based interface with project, document, and workflow management capabilities to improve collaboration.

Process Raster Images

With raster processing, you can immediately edit raster data and improve visualization while adding context to infrastructure projects. Using legacy raster drawings in your workflow can improve the quality of deliverables and lower data maintenance costs.

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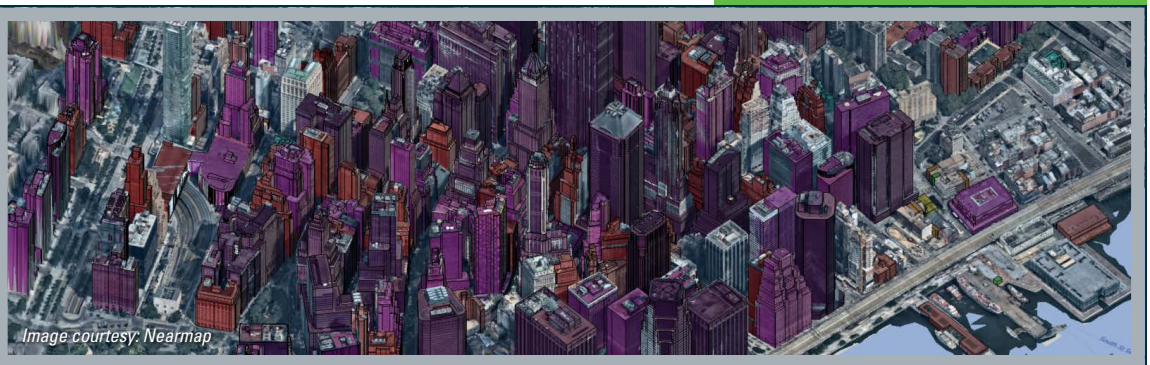

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System Requirements

Operating System
Windows 10, Windows 8.1, Windows Server 2016 (64 bit), Windows Server 2012 R2 (64 bit)

Virtualized Environments
Citrix XenApp 7.15 64-bit on Windows Server 2012 R2

Processor
Intel® or AMD® processor 1.0 GHz or greater. MicroStation is not supported on a CPU that does not support SSE2

Memory
4 GB minimum, 16 GB recommended

Connectivity
Internet connectivity is required to use some features and install software pre-requisites

Disk Space
25 GB minimum, up to 40 GB depending on additional installations such as companion features and companion products

Find out about Bentley at: www.bentley.com

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Global Office Listings
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OpenCities Map Ultimate At-A-Glance

Mapping and GIS
- Create and edit data GIS Features
- Build and publish maps and infrastructure models
- Enforce business rules
- Split and merge 3D polygons

Map Manager
- Intuitive, easy-to-use, persistent map definitions
- Drag and drop layers to control display order
- Control all aspects of map display
- Create thematic maps automatically from a template
- Export layers to MicroStation® elements

XML Feature Modeling
- XML metadata-driven GIS
- Property-based symbology and annotation
- Convert simple elements to smart GIS features

Geospatial Administrator
- Manage the XFM framework through one interface
- Runs outside MicroStation
- Define and maintain XFM project files
- Define features, properties, and the tools used to build those features
- Placement methods can leverage external applications

Choice of Data Stores
- Connection to spatial databases
- Self-contained XFM DGN files
- Support for RDBMS/DGN

Data Capture and Maintenance
- Digital terrain model support
- Dynamic domain lists

Spatial Database Support (Oracle)
- Oracle Spatial compliant
- Two-tier connection
- 3D object support
- Adherence to native Oracle Spatial models
- Long transactions, optimistic and pessimistic locking
- Valid time and historical tables

(SQL Server)
- Two-tier direct connection
- 3D object support

(PostGIS)
- Two-tier direct connection
- 3D object support

(ArcGIS Server/ArcGIS Online)
- Two-tier direct connection
- 3D object support

Reality Mesh Processing
- Displays large, photo-textured reality meshes
- Mesh editing capabilities
- Ground and breakline extraction
- Efficient 3D modeling using sections and templates
- Mesh classification to enrich mesh with data from many sources
- Orthoimage extraction on any axis
- Generation and manipulation of cross sections
- More flexibility for clipping reality meshes
- Support for draped images and breaklines in extracted terrain-scalable meshes
- Access free data sources indexed in GeoCoordination Service to generate terrain-scalable meshes
- Extract information from reality meshes

Point-cloud Processing
- Drape and snap elements
- Classification editing
- Smart snap
- Visual explorer
- Batch tile export
- Export to POD, LAS, and XYZ file formats
- Extraction of lines, pipes, and elbows
- Point-cloud clash detection

Image Editing Capabilities
- Clean up and vectorize scanned documents
- Convert, edge match, and rectify many formats of aerial imagery
- Display DEMs in various shading modes

Scalable Terrain Modeling (STM)
- Create and display very large digital terrain models
- High resolution image draping on STM
- Display modes: smooth shading with shadows, aspect angle, elevation, slope, and contours
- STM synchronization with DGN, civil DTMs, point clouds, and XYZ files
- Calculate view shed from point or path

Presentation and Analysis
- Spatial analysis
- Thematic display
- LumenRT to create animated visuals for stakeholders
- Buffer creation
- Dynamic labeling
- Direct database access (DDA) using the Data Browser
- Solar/shadow analysis

Map Generation and Printing
- Publish to intelligent PDF, PostScript
- Solve integrity problems with imported or legacy data
- Easily adopt XFM schema for imported or legacy data through dynamic feature scoring

Interoperability
- Directly reference geospatial formats
- Support for Bing Maps
- Import from:
  - » Most common spatial file formats
  - » Most Common spatial databases
  - » Web Feature Service (WFS) connection
- Inherit of Safe Software's FME import and export capabilities, if the software is installed and licensed.
- Publish features to iModels
- Spatial data streaming
- DGC2DB to upload your DGN to a spatial database
- Dynamic feature inference rules (tech preview)
- Export feature inference definition to OpenCities Map persistent schema (tech preview)

GIS Development Platform
- Utilize Open API, C/C++, C#, NET, VBA, and other modern programming languages

**Only applies to direct data access (DDA) graphical source connections (e.g. Oracle Spatial, SQL Server, WFS).*

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For additional resources:
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To set up a meeting:
Bentley@carahsoft.com
844-722-8436

To purchase, check out the contract vehicles available for procurement:
carah.io/BentleyContracts