Orbit™

Manage, Extract, and Share 3D Mapping Data

For engineers, geospatial professionals, and infrastructure owner-operators to benefit from reality models and 4D digital twins, they must be accurate, versatile, manageable, and embedded to best address project needs. 4D surveying facilitated by Bentley's Orbit solutions helps users manage, extract, and share vast amounts of imagery, point cloud, and 3D mapping data to get the best performance from reality modeling and digital twins.

Smart 3D Mapping

Orbit 3DM™ Content Manager enables users to access, update, and manage massive amounts of scanned data, imagery, 3D vectors, meshes, and 2D GIS/CAD data. You can ensure the accuracy and detail of your aboveground or belowground 3D city models with data acquired from street-level mobile, oblique, UAS, aerial, terrestrial, and indoor mapping. With templates tuned to each vehicle setup, Orbit 3DM Content Manager simplifies importing your 3D mapping data and saves you time when exporting views or creating accurate reports. Hardware-neutral, Orbit gives users the full 3D 360° view of the world by enabling real-time fusion of image data collection of any size from any system.

Advanced Feature Extraction

Orbit 3DM Feature Extraction allows you to quickly and efficiently navigate through all types and sizes of 3D mapping data in a full 3D view. Orbit 3DM Feature Extraction supports all known mobile, UAS, aerial oblique, indoor, and terrestrial mapping hardware systems, translating different device setups and specifications into a single user-friendly environment. With templates tuned to each vehicle setup, Orbit 3DM Feature Extraction makes importing your mapping data simple and saves you time when exporting views or creating accurate reports.

There are three versions of Orbit 3DM Feature Extraction software – Orbit 3DM Feature Extraction Basic, Standard, and Pro (see comparison at www.Bentley.com/Orbit). The Orbit 3DM Feature Extraction Standard edition is available in a client-server setup that enables professional modeling teams to organize and manage the production workflow according to team-specific requirements.

Options for Publishing and Sharing

Orbit allows you to efficiently share 360°, planar, nadir, street view, and oblique imagery with anyone. The software allows you to publish unlimited volumes of planar/panoramic imageries, meshes, and point clouds of your mapping data, no matter the source. You have the option of on-premises publishing with Orbit 3DM Publisher or cloud-based publishing with Orbit 3DM Cloud.

Orbit 3DM Feature Extraction allows you to efficiently measure, extract, and detect assets. You can process cross-sectionsalong the trajectory, create a profile along a 3D path, calculate mapping data and analyze volumes over time, export views and features, and create accurate reports.

Both environments provide a user-friendly online configuration console with import and setup tools to manage your 3D mapping content. Available using local servers or cloud-based services, you can define user credentials and share your mapping data over the internet to web browsers, mobile devices, and embedded viewers, allowing the integration of the data into any workflow.

Integrate 3D Mapping Data with Third-party Software

Orbit 3DM SDK and Plug-ins connect to online shared 3D mapping data from any vendor or any system, at any size or any coverage for direct integration into your existing workflow. Using the SDK allows access to any published 3D mapping data and seamlessly displays images and point cloud data in third-party software. The plug-ins fully integrate with software from Esri, Autodesk, and QGIS.

Orbit At-A-Glance

All Orbit Software Products

- Import data of any size from any mapping system
- Navigate mapping data in full 2D or 3D view
- Display point cloud, mesh, and vector data in full 3D View
- Display Spherical images
- Display Oblique or Nadir images
- Overlay vector data and point cloud on imagery
- Show footprints on reference view
- Create 3D fly-through movies
- Slice horizontally and vertically
- Set skyline backdrops in 3D View
- Measure points, lines, areas and simple volumes
- Measurements by point cloud, mesh, dem, reference planes, and forward intersection
- Automatically recognize points, surfaces, ridges, and corners

Orbit 3DM Content Manager

- Catalog, correct, consolidate, merge, and archive mapping data
- Load ground control points and measure constraints
- Analyze and correct positional accuracy of mapping data
- Clean multiple passes of mapping data
- Clean noise and ghosts from point cloud data
- Optimize and colorize point cloud data
- Upload resources to 3DM Cloud and 3DM Publisher
- Georeferenced data
- GIS vector data toolbox

Orbit 3DM Feature Extraction

- Measure and extract features on imagery and point cloud
- Save measurement in GIS, export to CAD
- Generate fast and efficient feature extraction workflows
- Organize feature extraction teamwork with client-server setup
- Advanced tools for feature extraction point cloud data
- Apply assisted and automated measurements
- Auto detect poles and traffic signs
- Create 2D floor plans
- Calculate and report 2.5D volumes
- Generate and export profiles and cross sections
- GIS vector data toolbox

Orbit 3DM Cloud and Orbit 3DM Publisher

- Share GIS and mapping data over the web
- Publish on the web with 3D Mapping Viewer
- Publish to third-party workflows with 3D Mapping Viewer Plug-ins
- Use ready to use plug-ins for ArcGIS (Map, Pro, Online), AutoCAD Map, and MicroStation®
- Build your own plug-in using the 3D Mapping Viewer SDK for .NET, JavaScript, and Python
- Organize mapping data e.g. multiple years, floors, and timelines
- Catalog, group, and archive mapping data
- Request and display resource metadata
- Create easy-to-use publications combining various resources
- Store and share data with Software as a Service (Orbit 3DM Cloud only)
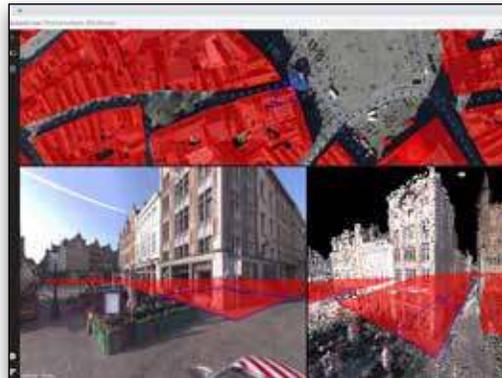
Orbit 3DM Publisher and Orbit 3DM Cloud enable users to publish vector data together with mobile mapping and other 3D data and dynamically switch each layer on or off in map, spherical, and all other views.
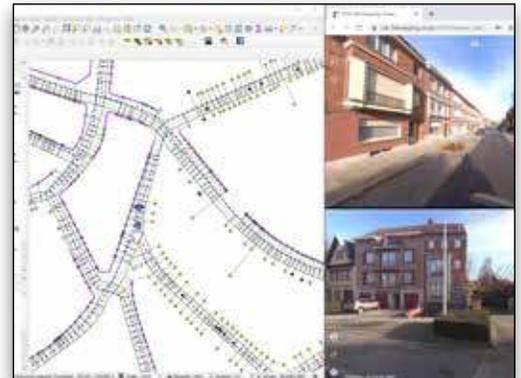
Orbit 3DM SDK enables users to build a plug-in for 3D mapping. Users can integrate into any website, business software, workflows, standard GIS, and CAD products.

Bentley
Advancing Infrastructure