# As-Built™ Modeler
The Most Direct Path from Reality into any Design System

FARO® As-Built™ Modeler is a software tool that enables AEC professionals to extract building information, such as CAD and BIM geometry, to be used from 3D data into any CAD system, even if it does not support point clouds. It allows users to display, manage and evaluate point cloud projects of unlimited size, independently from its source. Overall design productivity is greatly accelerated by using user friendly tooling to apply measurements, extract highly accurate CAD models and create photo realistic renderings.
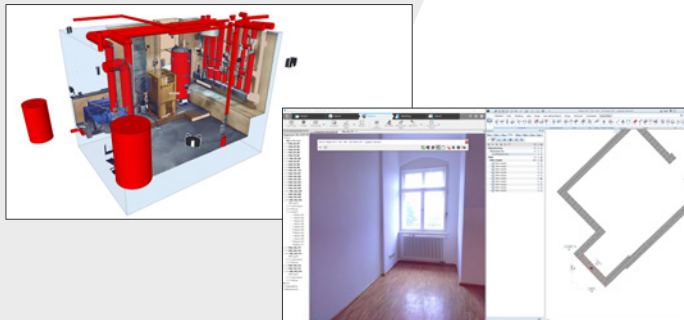
Features

Opens Workflows for Reality Capture Data
Import reality capture data as point clouds and meshes from FARO and other scanning solutions without constraints in data size. Use point cloud data captured from terrestrial scanners, handheld scanners, drones, mobile mapping systems and photogrammetry devices to import textured meshes and view them in 2D, 3D and Virtual Reality with the highest detail.

Stream Point Clouds Directly into any CAD System
Take measurements in point clouds easily and send them directly into Word, Excel or supported CAD programs. Send coordinates, distances and customisable macros into CAD from photo-realistic views of the 3D data. Generate results in three easy steps: Lead the project. Connect to application. Measure.

Evaluate 3D As-Built Data for any CAD System
Extract planar regions from the point cloud and intersect them to proofed and closed surface models, which can be exported into any CAD system supporting common file format conversion.

Use Simple and Intuitive Evaluation Tools
Create sections and slices from the point cloud and automatically extract line models and ortho-images to create floor, elevation and facade plans. Export CAD results into a preferred CAD system regardless of point cloud support.

Visualise Projects for Stakeholder
Create video renderings and fly-through videos from imported and modelled data. Visualise project status and retrofitted design with immersion and share these videos with stakeholders.

Benefits

Accelerated Productivity: Easy to learn, simple to use and affordable to implement amounts to a fast return on investment.

Seamless FARO Workflow: Combine the FARO Focus Laser Scanner, SCENE Software and As-Built™ Modeler to convert data into any preferred file format.

Decreased Costs: Save time and effort by avoiding multiple visits to the construction site.

Increased Efficiency: Get the job done in the shortest amount of time with proven quality. Execute fast, straightforward and accurate conversion of point clouds into meaningful deliverables with automatic extraction tools.

Delivered Proficiency: Provide accurate projects from true-to-fit CAD design models while avoiding rework and material waste by a design that perfectly fits into the asbuilt situation. Pre-simulation in the digital twin (3D, Virtual Reality) guarantees proof of right fit and concept.

Greatest Flexibility: Work with any point cloud data to deliver results to the client in their preferred CAD system.

Key Features

FARO Unlimited Engine

- Import of reality capture data as point clouds (ex. *.lsproj, *.fls, *.e57, *.pts, *.xyz) or meshes (ex. *.obj, *.vrml) from FARO and other scanning solutions and view them in 2D, 3D and Virtual Reality view with highest detail.

- Navigation via an overview map live in the 3D and Virtual Reality environment gives control about the project any time.

- Clipping tools and multi-clipping boxes help segment into areas of interest and ease up the navigation.

FARO Agile Modeling

- Extract planar regions of complex situations from the point cloud and intersect them to closed surface models, which can be exported into any CAD system supporting common exchange file formats (*.dxf, *.iges and *.step).

- Duplicate and fit: Extract similar objects efficiently. Once the first object is extracted, simply copy it to other locations where the same object needs to be located as well. The software will then fit the geometry into the point cloud perfectly.

- Cylinder Detection automatically attempts to find all cylindrical objects like pipes which fall into the specified diameter and length ranges.

- Manually create cylinders by picking two points from the point cloud. The software automatically calculates the exact diameter and maximum extension of the extracted cylinder.

FARO SendTo Interface

- Send measurements, coordinates and self defined commands (macros) directly into any compatible 3rd party application. Such applications could be:

  AutoCAD® and AutoCAD® LT (with As-Built for AutoCAD Software), Plant 3D®, Autodesk® Revit® (with As-Built for Autodesk Revit), Allplan®, BricsCAD®, Rhino 3D®, DraftSight®, Dietrichs CAD®, HiCAD®, GstarCAD®, Carlson®, IntelliCAD®, Trimble Business Center®, AViCAD®, ZWCAD®, IBS CAD®, MapScenes® and many more.

FARO Vectorizer

- Create slices and ortho-images from the point cloud and automatically extract line models for 2D floor, elevation and facade plans to be exported into any preferred design system. Post editing tools help users to clean up the automated result.

FARO Video Pro

- Create video renderings and fly-through videos from imported and modelled data using the included FARO Video Pro App.

FARO Smart Measure

- Versatile tools for measurements in point clouds include: Measure distances (3D, horizontal, vertical), multi-corner distances as well as areas and volumes using the Area & Volume Measurement App.

- Use documentation objects to add notes and attach external documents via hyperlink functionality.

FARO Ortho-Image

- Create true to scale orthogonal views from free configurable camera positions with full color detail and optional transparency. This allows quick creation of maps, floors and elevations plans from point cloud data and export as 2D or 3D *.dxf files.

FARO Easy Go Concept

- Users of FARO SCENE scan registration software will quickly become familiar with the clean and straightforward user interface.

- Easy managing of all existing data in a graphical project view with project histories to restore previous project states.

Industries

Surveying | Architecture | Engineering | Construction | Facility Management | Historical Preservation

Technical Requirements

Configuration for Maximum Performance	
Hardware	Intel Core i7/i9/Xeon or AMD equivalent more than 3 GHz, 8 physical cores, 64 GB RAM, 1 TB Solid State Drive + Regular HDD
Graphics Card	Dedicated graphics card, OpenGL 4.1 or higher, at least 16 GB Memory; For Stereo Rendering and Viewing: NVIDIA Quadro; For VR Rendering and Viewing: NVIDIA GTX 1080 or similar, SteamVR must be installed; Supported VR Headsets (optional): Oculus Rift or HTC Vive with Touch Controllers
Operating System	System 64-bit Windows™ 10
Recommended Hardware Requirements	Accessories 3D Connexion Space Mouse with latest drivers (settings described in the User Manual) Network card is required for licensing As-Built Modeler

Hardware requirements depend on the project size. For a 30 GB project (26 scan positions) with 500 As-Built Modeler objects (regions with 30 vertices) a computer with Intel Core i7-6920HQ CPU @ 2.90 GHz (4 physical cores), 32 GB RAM, NVIDIA Quadro M2000 (4 GB memory) and 1 TB SSD will work properly.