



# PolyWorks®

## The POWER of an industrial strength solution in the hands of surveyors

PolyWorks® is a powerful point cloud software solution that processes data obtained from any short-range, mid-range, or long-range 3D scanner. Originally developed to perform point-cloud-based inspection and reverse-engineering tasks for manufacturing applications, PolyWorks has now become the "No.1" point cloud software system within the automotive industry thanks to the accuracy and robustness of its tools.

Since 2000, InnovMetric has been working in close collaboration with surveyors and scanner manufacturers, applying its vast experience in processing very large point clouds to meet the specific needs of the surveying community. Today, surveyors and engineers using PolyWorks in their daily work benefit from outstanding scan alignment, geo-referencing, measurement, feature extraction, and visualization capabilities to produce survey-accurate results and to efficiently deliver valuable extracted elements to downstream software suites such as AutoCAD® and MicroStation®.

### PolyWorks' strengths

PolyWorks is a flexible software solution optimized to efficiently work with **any 3D scanner**.



PolyWorks efficiently processes very large data sets of up to **100 million data points**.



PolyWorks' "scan alignment" technology is based on the geometrical shape of the entire scanned scenes, and **does not require the use of physical markers** in the field.



PolyWorks has a wide set of **measurement tools**, and **automatic feature extraction** capabilities.



PolyWorks offers user-friendly, yet powerful **macro-programming** capabilities.



PolyWorks has the ability to automatically transform very large point clouds into **accurate 3D polygonal models**, which may be decimated and texture-colored.



### Benefits for surveyors and engineers

Surveyors can use the laser scanner that is the most adapted to their digitizing tasks, or combine scans produced by different scanner brands on the same project. PolyWorks **will get the most out of any type of point cloud data**.

PolyWorks' robust algorithms are perfectly adapted to **processing typical surveying scenes** like terrains, mines, roads, bridges, buildings, and other large structures.

PolyWorks' approach significantly **reduces the time** for on-site data collection and **eliminates the sometimes hazardous task** of setting up targets.

Quickly obtain lengths, heights, angles, radii, volumes, and more, directly on point clouds. For increased productivity, surveyors can use automated tools to extract key features such as **cross-sections, sharp edges, and other feature lines** (e.g. road lines, pipe center lines, electrical cables) directly on point clouds. These extracted elements can then be directly **exported to DXF and IGES** and/or **imported into MicroStation V7 and V8**.

Surveyors can increase productivity by recording complete alignment, measurements, and extraction routines, and executing them later in **just one click of the mouse**.

Surveyors can use these accurate polygonal models of scanned scenes for multiple **visualization applications**. The models can be shared with clients and colleagues, or made available for **"public-access" libraries and virtual museum sites**.

