# Feature-based inspection in 2D

PolyWorks 2015 introduces a new user-friendly, well-integrated workflow to perform feature-based inspection in 2D. Inspecting in 2D along planar sections is useful for parts that are too flexible or deformed, such as plastic parts and castings, or for measuring geometry types that are difficult to measure in 3D, like fillet radius and wall thickness.

**The new three-step workflow consists of:**

**1** **Creating a planar section.**

**2** **Defining nominal features on the nominal component of the section (such as lines, arcs, distances, and angles).**

**3** **Extracting these features on the measured component of the section.**

The new 2D inspection workflow replaces a former manual process, unlocking significant productivity gains by its full compatibility with the PolyWorks automatic project update and DirectReplay™ multiple piece measurement technologies.
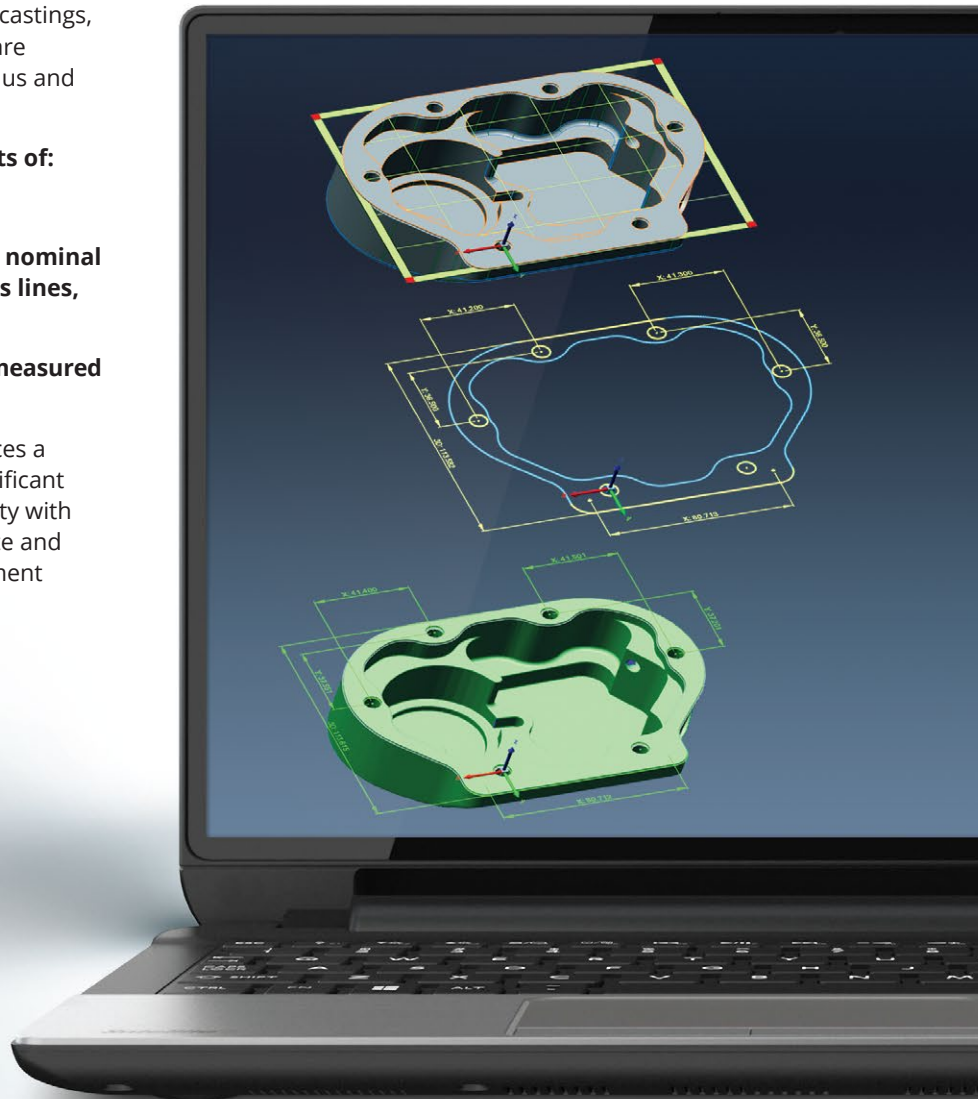
# Feature scanning guidance

The groundbreaking innovation of PolyWorks 2014's real-time quality meshing technology was to compute and display quality metrics that guide laser scanner operators toward delivering high-quality scanned surfaces. PolyWorks 2015 expands these scanning guidance capabilities by computing and displaying quality metrics for features that need to be extracted on scanned data.
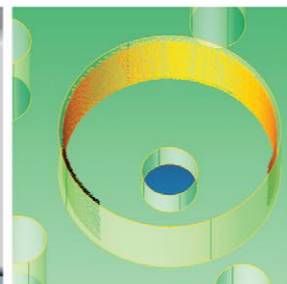
**The objective of the new feature scanning guidance tool is to answer the two following questions:**

**❶ Is there enough data to reliably fit this feature?**

**❷ If there is not enough data, where should the operator capture additional data?**

Three quality metrics analyze surface, curve, and circumference coverage and trigger the display of guidance graphics that indicate where an operator should perform additional scans. Once the quality is considered acceptable for a specific feature, its guidance graphics are no longer displayed.

Surface coverage metric (64%)
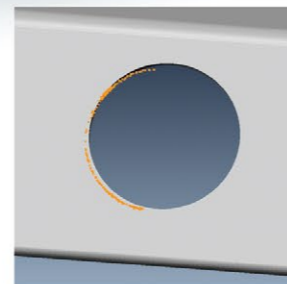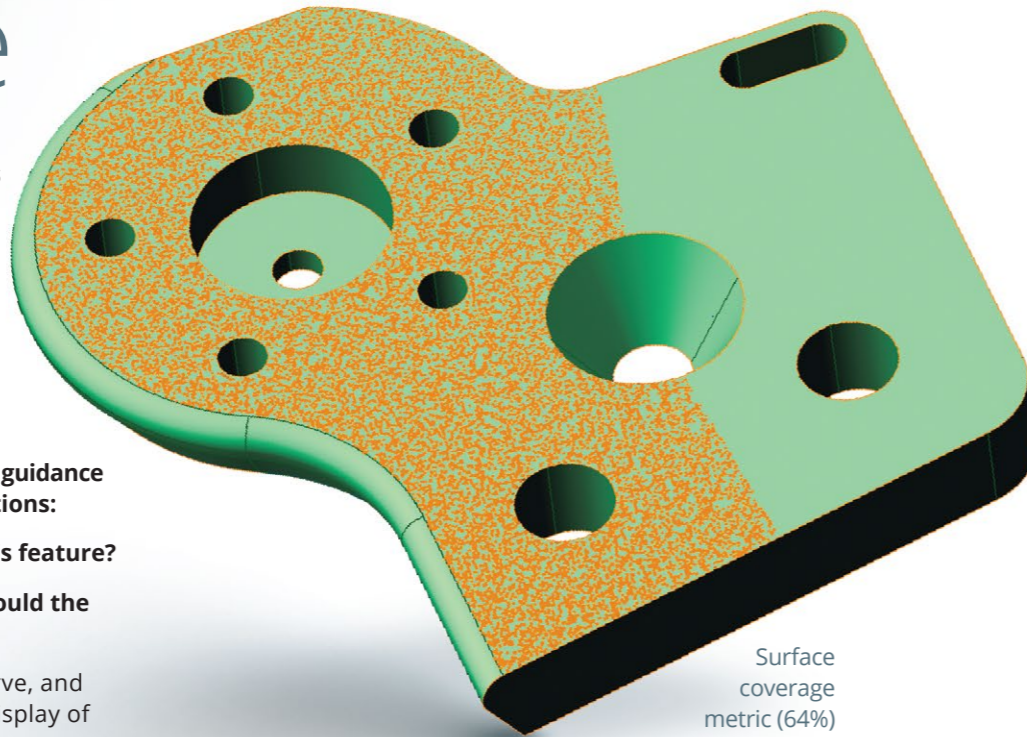
Curve coverage metric (48%)　　Circumference coverage metric (76%)

For round features for example, the quality metrics ensure that at least 270 degrees of a feature's circumference has been scanned, resulting in the enhanced quality and precision of fitted features; whereas for planar features, they ensure that at least 75% of the surface has been scanned, resulting in a balanced fit. The new feature scanning guidance tool also improves measurement repeatability and accelerates learning, as a team of laser scanner operators will be guided to measure the same parts in similar ways.

# Productivity-related enhancements
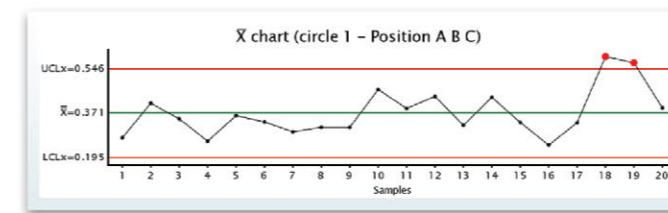
## Sample concept in SPC

Group pieces into samples and analyze these samples using four new statistical process control charts compliant with the industry standards.

## High-quality point cloud data object type

Convert a real-time mesh into a high-quality point cloud to improve performance when measuring a part from multiple device positions.
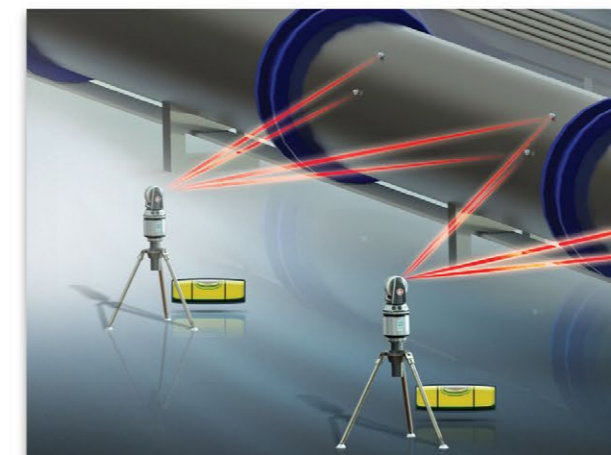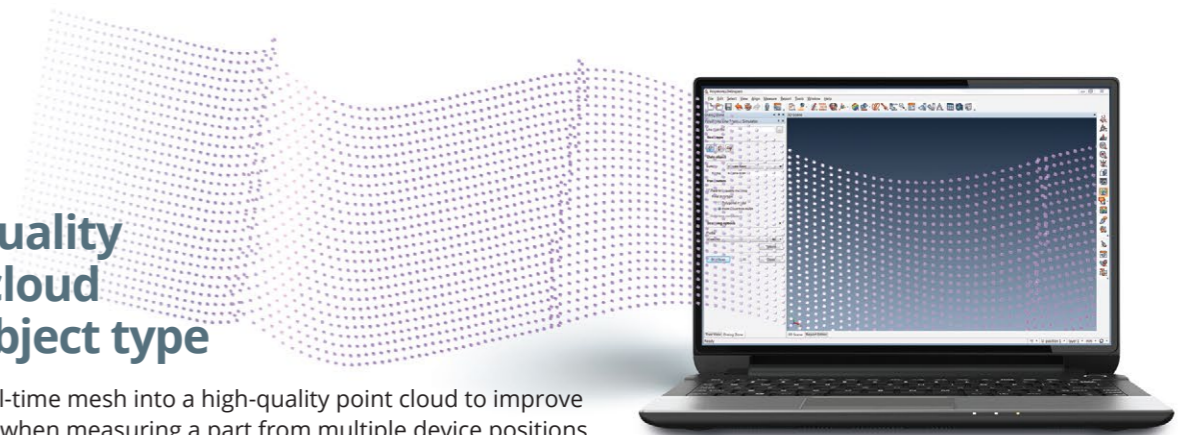
## Target-based device position alignment enhancements

Gain control over the use of measured target coordinates when measuring over a long period of time.

## Cloud-based delivery of node-locked license keys

Get your PolyWorks 2015 node-locked license keys directly from the cloud!

# PolyWorks® 2015

## Enhances measurement quality, repeatability, and productivity!

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