

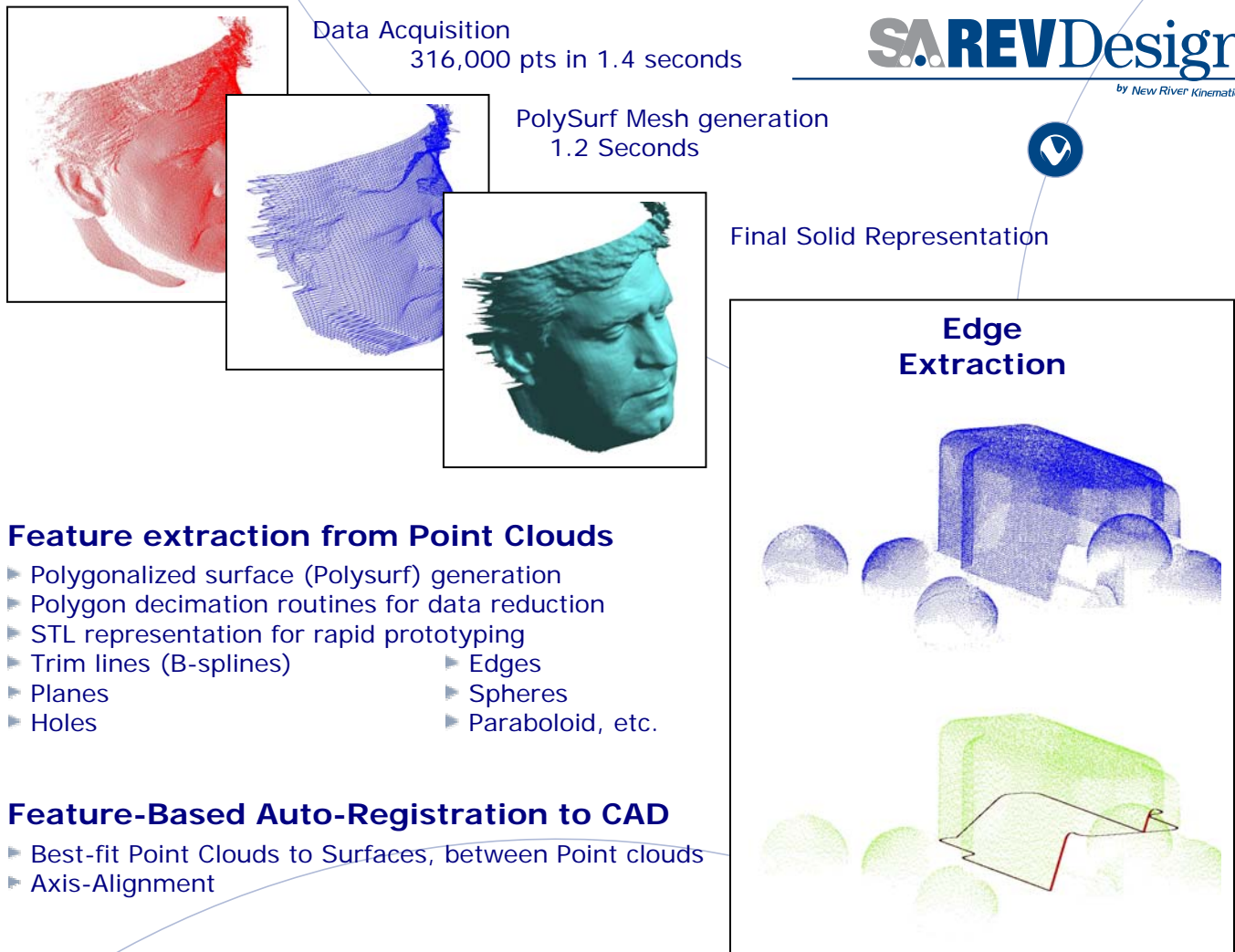
## SpatialAnalyzer's Reverse Design – *Forward Engineered for Extreme Measures*

SpatialAnalyzer's Reverse Design (SA RD) module provides a complete solution for feature extraction and analysis. By directly coupling data collection to surface creation SA's RD module delivers accurate 3D polygonal models with basic geometric shape creations. Visualize, recreate, redesign your critical components for manufacturing and production applications.

### Complete Re-Design Process

- ▶ Direct Control link to Raster and Ray-Directed Scanners and Laser Trackers
- ▶ Visualize and manipulate millions of data points with Cloud Viewer
- ▶ Integrated and programmable peripheral control (turn-tables, linear slides, auxiliary lighting)
- ▶ Programmable Data Collection, Filtering, Noise Reduction, and Feature Extraction
- ▶ Fast Polygonal Mesh Generation from Scanned Data
- ▶ Continuous NURBS surface generation from striped datasets.
- ▶ Manage more than 10 million points in real-time

### PolySurf Example



**SAREVDesign**  
by New River Kinematics

### Feature extraction from Point Clouds

- ▶ Polygonalized surface (Polysurf) generation
- ▶ Polygon decimation routines for data reduction
- ▶ STL representation for rapid prototyping
- ▶ Trim lines (B-splines)
- ▶ Planes
- ▶ Holes
- ▶ Edges
- ▶ Spheres
- ▶ Paraboloid, etc.

### Feature-Based Auto-Registration to CAD

- ▶ Best-fit Point Clouds to Surfaces, between Point clouds
- ▶ Axis-Alignment