



## DISCOVER NEW LEIOS!

# Features

- 🟠 STREAMLINED WORKFLOW
- 🟠 FASTER TIME-TO-MARKET APPROACH
- 🟠 SCANNER INTEGRATION AND CAD FRIENDLY
- 🟠 OUTPUT 64BIT AND MULTICORE SUPPORT
- 🟠 SCULPTING TOOLS
- 🟠 LEIOS COMPONENTS: THE HEART OF IT ALL



Leios 2 provides the easiest, fastest, most powerful and affordable route from your 3d scanner to your CAD, making elaboration of 3D scans, editing of triangle meshes and fitting as easy as ever.

With Leios it's possible to acquire datasets from any kind of 3D scanner, to transform the point cloud into a NURBS mathematical model easy and quickly with complete control of each step and to analyze the results with powerful inspection tools.

Leios exports the datasets in many formats, both polygonal and CAD, suitable for several fields like: industrial design, engineering, simulation, archaeology, medical and dental industry, animation and so on.

EGSolutions introduces LeioScan, the new product for the scanner suites. The compact, modular solution dedicated to 3d scanner manufacturers. Available from Q1 2012.

Leios 2 and LeioScan are based on LMLib, EGSolutions geometric library for third-party applications.



### SCAN DATA

Import or acquire point clouds from several supported scanners;  
Point cloud enhancing and optimization;  
Scans alignment and merging.

### MESH ELABORATION

Mesh cleaning, smoothing, enhancing;  
Hole filling and mesh repair tools;  
Optimization for surfacing, milling and further processing.

### MESH MODELING

Mesh sculpting and free deformation;  
Offsetting/Shelling;  
Boolean operations, separation by clusters.

### RECONSTRUCTION BY FITTING

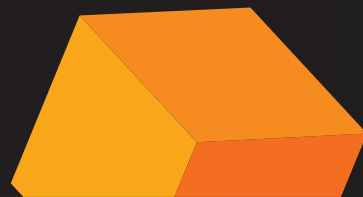
Character lines identification;  
Region dissection and curvature identification;  
Precise and fast analytic surfaces fitting.  
2D sketch fit of cross sections for rapid development.

### SURFACING AND INSPECTION

Automatic and semi automatic reconstruction by NURBS patches;  
Accurate continuity analysis on surfaces and curves;  
Compare NURBS and fitted surfaces against the mesh.

### EXPORT

Save for archiving, printing, rendering and analysis in the most common formats (STL, OBJ, PLY); Export to your CAD of choice in STEP, IGES, DXF format.



# Streamlined workflow



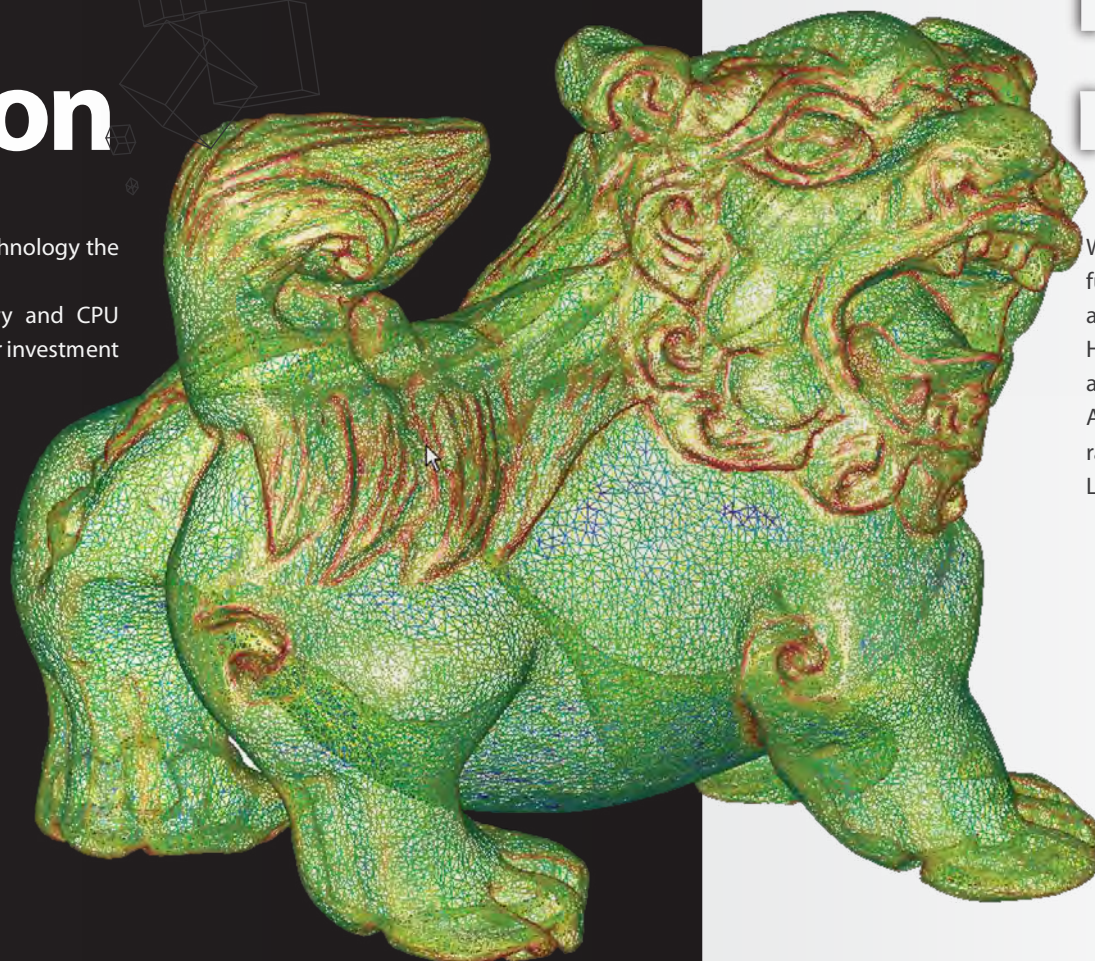


# Hardware optimization

Leios 2 is optimized for the latest cutting edge technology the market provides.

Leios 2 makes extended use of all the memory and CPU available in your workstation of choice, making your investment worth the time saved on processing data.

Enjoy hardware acceleration providing a never before seen boost in performance.



# Faster time-to-market approach

Wizard approach dramatically shortens time to market, providing one-click functions for the most common uses: prepare the meshes for prototyping, fitting, archiving and CAD software in a few steps.

Heavy hardware optimization lets you squeeze your hardware up to the last, to achieve results in the faster way possible.

A smarter and accessible UI gives you more time to concentrate in important tasks rather than wondering how to use the software.

Leios 2 is developed for delivering results in the fastest and most accurate way.



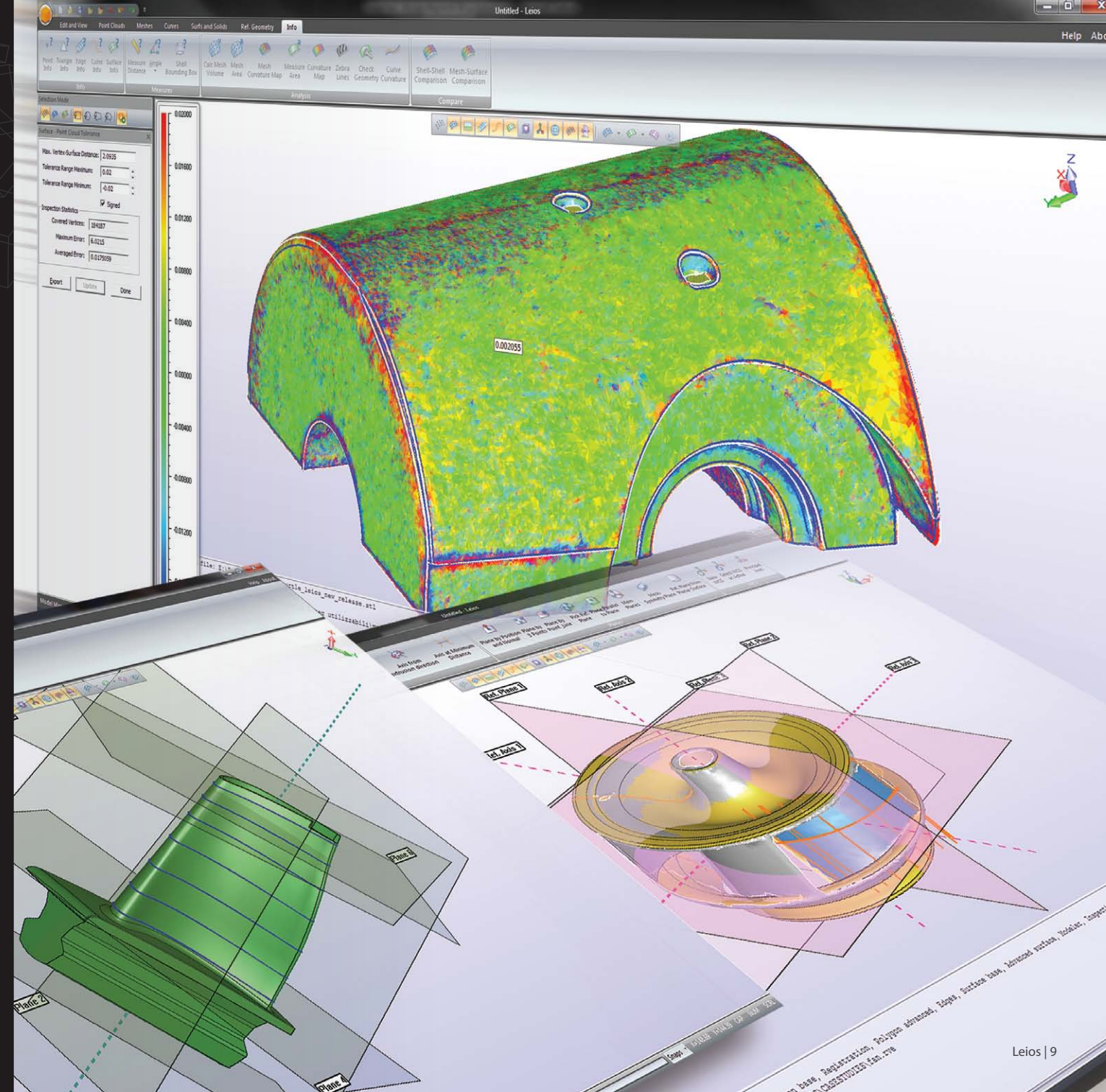
# Scanner integration and CAD friendly output

Direct integration with the most popular 3d scanners on the market with dedicated tools for quick point clouds and mesh optimization and full support for textures and huge raw datasets.

One click procedures to optimize your point clouds and meshes for CAD processing, export your fitted or automatic surfaces in IGES and STEP formats, with direct integration with the majority of CAD solutions on the market.

Brand new fit 2D sketch function, to allow direct editing of cross section into finite elements to create precise profiles.

Leios 2 is the perfect link between your scanner and your cad of choice.



# Sculpting tools

Let your creativity run free: direct sculpting on meshes for prototyping, archiving and mesh enhancements.

Available tools are:

**ADD:** add material to the mesh controlling area of influence and density of the added material

**REMOVE:** remove material from the mesh controlling area of influence and weight of the scalpel

**SMOOTH:** smooth the whole mesh, a selection, or locally by paintbrush

**FREEFORM DEFORMATION:** deform the mesh dynamically, using an elliptic tool

**DEFORMATION BY GRID:** deform the mesh using control points ordered by a grid, allowing for precise deformation of the model

**EDGE OPTIMIZATION:** optimize and reconstruct damaged edges on the mesh, priceless when working with mechanical parts



# LMLib – The Leios Mesh Libraries

Leios Components is a set of C/C++ libraries created by EGSolutions as geometric engine for our solutions and custom projects.

Leios Components is provided as SDK for companies in need of powerful new tools of mesh optimization, surfacing, edge recognition and fitting for their solutions. Leios Components is the heart of our software solutions, and features all the tools implemented in Leios 2 and much more!

Leios Components include:

**LMLib:** point cloud and mesh library;

**SFLib:** surface fitting library;

**SELib:** sharp edges library;

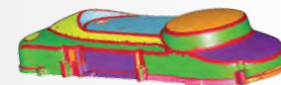
**LMMModel:** full 3d document management;

**LMView:** advanced OpenGL visualization tools;

**LMPython:** components interface for scripting;  
Components for biomedical applications.

Leios Components is currently distributed in the form of dynamic-load library (DLL) for both 32 and 64bit architectures.

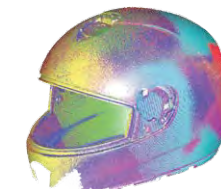
Available for Microsoft Visual Studio 2005, 2008, 2010;



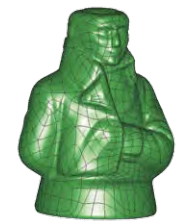
Sharp Edges Library



Components for biomedical applications



Points cloud and mesh library



Surface fitting library

collaboration of 3D  
editing scans  
triangle is a fast  
reliable and  
user-friendly  
new leios version  
user interface  
new performance  
boosts and  
productivity  
usability  
simulation designing  
acquire datasets  
any kind of 3D scanner  
the point cloud  
MURBS  
reverse engineering  
heritage  
preservation  
archaeology  
dental industries  
architecture  
entertainment media



# Discover a world of possibilities

## Comparison Chart

For makers\* Premium\* Professional\*

Common Operations			
File Common Operations	•	•	•
Screen Capture	•	•	•
Transforms: Move, Scale, Mirror, WCS to WCS	•	•	•
Mouse 3D option	•	•	•
Point Cloud			
Point Cloud Editing: Curvature, Filtering, Clean Noise, Clean Outlier, Uniform Sample Smoothing, Offset, etc		•	•
Manual/Global Registration and Merge	•	•	•
Point Cloud from Surface		•	•
Meshes			
Triangulation: Point Cloud to Mesh, 2d, Volumetric		•	•
Mesh from Surface		•	•
Healing: Find Abnormal Faces, Clean mesh, Check Intersection, Peak Removal, Flip/Fix normals, etc	•	•	•
Editing: Smooth, Decimation, Refinement, Fill Holes, Defeature	•	•	•
Divide Cut Mesh by Plane and Curve	•	•	•
Mesh Freeform Deformation	•	•	•
Fit area to: Plane, Cylinder, Sphere		•	•
Select mesh by crease angle, by cluster	•	•	•
Fine/Global Registration and Merge	•	•	•
Fit Mesh boundary to curve	•	•	•
Advanced Editing Tools: Local Smooth, Undercut Analysis, Mesh Extension, Feature Decomposition, Smooth Boundaries, Sew, etc	•	•	•
Remesh 3d Scanning or Cad Model		•	•
Boolean Operations	•	•	•
Select mesh by curvature	•	•	•
Select mesh by face		•	•
Texture: convert mesh texture to Vertex colors	•	•	•
Manual/Global Registration and Merge	•	•	•
Curves			
Basic Curves	•	•	•
Curve on Mesh Approximation	•	•	•
Editing Tools: Edit, Join, Bridge, Match, Composite, Resample, Smooth, etc	•	•	•
Cross Sections: By Plane, Radial, Along Curve	•	•	•
Curves from Mesh Boundaries	•	•	•
Advanced Editing: Split and Trim by surface, Extend on surface, Project Curve, Offset, etc		•	•
Intersections		•	•
2D Sketcher			•
Surface and Solids			
Autosurfacing by Patches		•	•
Manual Patches Creation with Curvature Map		•	•
NURBS surface fit over Mesh			•
Surface Creation by Points on Mesh			•
Modeler: Loft, Sweep, Revolve, Extend, Cover- Standard Shapes, etc			•
Hybrid Modeler Editing: Offset, Split, Trim, Untrim, Revert, Stich, Unstich Blend, Heal, etc			•
STEP import/export converter			•
IGES import/export converter		•	•
Entities creation: Plane, Cylinder, Sphere, Cone, Block			•
Ref. Geometry			
Points: by coordinates, at curve ends, intersection curve-curve, etc	•	•	•
Axes	•	•	•
Planes	•	•	•
WCS	•	•	•
Info			
Distance, Angle, Volume, etc	•	•	•
Mesh-Surface comparison		•	•
Mesh Curvature Map	•	•	•
Shell Bounding Box with Info	•	•	•
Curve Curvature			•
Mesh-Mesh comparison	•	•	•
Zebra Lines, Curvature Map, Measure Area, Check Geometry			•
	•	•	•
*Edges Creation and Editing (plugin option)			
Select Sharp Edge Reconstruction	•	•	•
Shape Analysis	•	•	•
Curves from Edges	•	•	•
Edge Creation and Editing	•	•	•
Mesh Dissection By Edges	•	•	•
Character Lines Extraction	•	•	•



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