

Evolute GmbH
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Austria

To whom it may concern

Vienna, 2nd May 2016

EvoluteTools for Rhino – Plugin Suite Description

EvoluteTools for Rhino is an advanced geometry optimization tool for freeform surfaces with a user friendly interface. Established computational tools from Evolute's core software library as well as ground breaking technology from our cutting edge research results provide you with optimization functionality not offered by any other CAD system.

EvoluteTools has been applied in practice for numerous projects, please visit our website www.evolute.at for examples. Our support provides you with access to top-notch geometry consultants.

EvoluteTools D.LOFT

Single curved surfaces, also known as developable surfaces, are extremely important to modelling in various fields like marine design, architecture, product design, and art works. They help reduce manufacturing costs and tooling, yet no other software allowed designers to use them in a straightforward way with a high degree of precision and control. Things changed! EvoluteTools D.LOFT enables users to create developable surfaces between arbitrary 3d curves with a push of a button, hassle free. Includes a component for Grasshopper.

Benefits:

- Overcome the limitations of Rhino's built-in developable lofting.
- Create perfectly developable surfaces.
- Used and recommended by numerous naval architects and metalworking companies.

Further information: www.evolutetools.com/D.LOFT

EvoluteTools T.MAP

EvoluteTools T.MAP is a tool for computing parametrizations on any type of input surface. It supports surfaces, polysurfaces, and meshes as input. A parametrization is a continuous embedding of the surface in a two-dimensional space. To put it simple, T.MAP provides a clearly defined geography of the surface, which can then conveniently and easily be explored. There are numerous applications which are enabled based on a good parametrization. Currently T.MAP provides the following benefits to you:

Benefits:

- Re-meshing using pure quad or pure triangle meshes.
- Texture mapping of quadrangular or triangular patterns with minimum distortion.
- Design of smooth curve networks on freeform surfaces.
- User-guided alignment with curves or principal curvature directions.
- Combines perfectly with EvoluteTools PRO for fine-grained mesh optimization.

Further information: www.evolutetools.com/T.MAP

EvoluteTools PRO

Multi-resolution mesh modeling, global and local subdivision rules, mesh editing tools, mesh optimization for various goals (closeness, planarity, fairness, coplanarity, edge length repetition, ballpacking), specification of vertices as anchor/corner points, specification of optimization constraints (floor slabs, general co-planarity constraints, reference curves, fine grained fairing), closeness analysis, planarity analysis, edge length analysis, principal curvature and asymptotic line analysis, pattern mapping, NURBS fitting. Offers an interface for scripting using RhinoScript. The freely available EvoluteTools PRO Primers give an extensive introduction and examples.

This module adds all the mesh optimization features that are restricted in the freely available version EvoluteTools LITE, i.e. you will be able to design planar quad panelisations, hybrid panelisations (mixed planar quad and triangles), use reference curves or point clouds in addition to reference surfaces, constrain vertices to planes (e.g. floor slabs), create meshes from curves, map patterns, optimize edge lengths, etc.

Benefits:

- Overcome the limitations of Rhino's PanelingTools.
- Quickly create, optimize, and evaluate panelisations, without the need to use Grasshopper.
- Comes with support of top-notch geometry consultants.
- Practically proven at hand of numerous reference projects.

Further information: www.evolute.at/consulting/services/panelisation-optimization.html

EvoluteTools FIT

NURBS patches, meshes, point clouds, curves, or a collection of such geometric objects can be used as input, while the output are best-fit simplified panel surfaces. Supported types include cylinders, cones, general polynomial cylinders, polynomial translational surfaces, polynomial ruled surfaces, general polynomial surfaces. Panels are fit locally (non-coupled), i.e. one by one, to the given input objects. Costs can be assigned to panel types, allowing to choose the cheapest panel type within tolerance. Extensive options are available. Please note that maximum quality panel fitting for architectural purposes might be achievable by global (coupled) panel fitting, which is not included in this module and currently only available as a consulting service.

Benefits:

- Simplify curved panels at the click of a button.
- Choose the cheapest available panel type within tolerance.
- Works for diverse kinds of input data.
- No need to use Grasshopper.
- Fast and very stable optimization, practically proven at hand of numerous reference projects.

Further information: www.evolute.at/consulting/services/panel-fitting.html

EvoluteTools CLUSTERING

This module can be used for post processing panelisations consisting of flat convex panels (triangles, quads, pentagons, hexagons, ...), and computing groups of panels. Groups are determined using a tolerance that can be specified by the user. Possibilities for input:

- 1) Meshes resulting from using the module *Panel design and optimisation*
- 2) Closed polylines (triangles, quads, pentagons, hexagons, ...), resulting from any other panelisation technique (e.g. output of Grasshopper or Rhino's PanelingTools).

Please note that it is crucial to allow a tolerance, otherwise it is theoretically impossible to find groups of panels on a freeform surface. This results in a workflow requiring a design-loop (design and optimize panelisation, compute panel groups, go back to design and optimize panelisation, and so on).

Benefits:

- Evaluate your design for repetition within minutes.
- Combines perfectly with EvoluteTools PRO and T.MAP.
- Fast and very stable optimization, practically proven at hand of numerous reference projects.

Further information: www.evolute.at/consulting/services/panel-repetition-maximization.html

EvoluteTools GRIDSHELL

EvoluteTools GRIDSHELL for Rhino enables you to rapidly plan steel and glass gridshells based on a reference axes mesh. EvoluteTools GRIDSHELL solves all complex geometry cases, resolves conflicts, and creates nodes, beams, glass connectors, and panels. Production data for all of these elements can be exported rapidly, using your specific drawing templates. Specific node systems will be implemented on request.

EvoluteTools GRIDSHELL is built upon EvoluteTools PRO and combines perfectly with its mesh design and optimization features. EvoluteTools CLUSTER can be used in addition to cluster panel shapes and minimize the number of unique panels.

Benefits:

- Model, simplify, and output your steel and glass gridshell structure for production all within Rhino.
- Includes interface to and from Microsoft Excel, allowing to combine it with almost any software for structural calculations.
- Combines perfectly with EvoluteTools PRO, T.MAP, and CLUSTER.

Further information: www.evolute.at/consulting/services/sub-structure-optimization.html

Commercial proposal

Prices do not include value added tax or other taxes that might apply.

Perpetual licenses, node-locked	
Perpetual node-locked license for EvoluteTools D.LOFT	EUR 260
Perpetual node-locked license for EvoluteTools T.MAP	EUR 395
Perpetual node-locked license for EvoluteTools PRO	EUR 495
Perpetual licenses, floating	
Perpetual floating license for EvoluteTools D.LOFT	EUR 520
Perpetual floating license for EvoluteTools T.MAP	EUR 790
Perpetual floating license for EvoluteTools PRO	EUR 990
Yearly subscription licenses, floating	
Yearly floating license for EvoluteTools FIT	Request for quotation
Yearly floating license for EvoluteTools CLUSTER	Request for quotation
Yearly floating license for EvoluteTools GRIDSHELL	Request for quotation

All updates are included in yearly license fees. Perpetual licenses contain updates for the first year from date of purchase, later updates will be offered at a reduced rate. We will quote for project-specific licenses or volume discounts on request. A proposal for extension of yearly licenses will be sent one month prior to their termination.

Prices do not include value added tax or other taxes that might apply. This offer is valid for 4 weeks from date of issue. We will issue an invoice upon receipt of order. License fees are to be paid in advance to

Bank name: Raiffeisen Regionalbank Mödling

Account number: 00011999596

Name of account: Evolute GmbH

IBAN: AT423225000011999596

BIC/SWIFT-Code: RLNWATWWGTD

Upon receipt of payment, EvoluteTools will be delivered electronically and / or via post.

As an alternative, licenses can be purchased through our online-reseller based in the US, using diverse means of payment. We will issue customized online purchase links on request.

End User License Agreement

Please find attached the End User License Agreement (EULA). An internet connection is necessary to access the online license server for floating licenses. The license checking functionality can be tested prior to ordering using the freely available version EvoluteTools LITE.

Short-term evaluation licenses are available on request, results computed using evaluation licenses must not be used commercially.

Documentation

Extensive documentation is included by means of a help file, tutorial videos, and freely available primer documents which can be downloaded from

www.evolute.at/software/evolutetools-for-rhino/learning-center.html.

Customization

EvoluteTools PRO offers an interface for scripting using RhinoScript. The EvoluteTools PRO Scripting Primer gives an extensive introduction and examples. Upon request we will quote for the development of specific script functionality, e.g.

- automated drawing and production data output
- interfaces to other CAD or BIM packages
- quantity take-offs, geometric analysis, etc

Support

Support services are included, please refer to www.evolute.at/software/evolutetools-for-rhino/support.html for contact details. Evolute's top-notch consultants provide you with advice on how to get the most out of EvoluteTools for your specific projects, at unrivalled speed.

Training

We offer personal trainings or workshops based on a daily rate of EUR 1000. Trainings can be hosted in our offices in Vienna (Austria), or in other locations based on your preferences. Travel costs and compensation of travel time apply to trainings outside of Vienna.

Evolute is grateful for your interest in its products and is confident that EvoluteTools will prove very useful for your projects.

With best regards,

Evolute GmbH

Attachments:

1. List of plugin commands
2. Request form for evaluation licenses
3. End User License Agreement for EvoluteTools
4. General Terms and Conditions

To:
 Evolute GmbH
 Sonnbergstrasse 101/8
 2380 Perchtoldsdorf
 Austria

Request for evaluation license of EvoluteTools for Rhino

Please issue an evaluation license with a duration of 14 days to ...

Name Job title	
Company	
Address	

... for the following modules of EvoluteTools for Rhino:

EvoluteTools PRO	
EvoluteTools FIT	
EvoluteTools CLUSTER	
EvoluteTools GRIDSHELL	
EvoluteTools D.LOFT	(can be downloaded from www.evolutetools.com)
EvoluteTools T.MAP	(can be downloaded from www.evolutetools.com)

Start date of evaluation license:	
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I confirm to have read, understood, and to agree to the End User License Agreement (EULA) for EvoluteTools as attached below. I am aware of paragraph 1C of the EULA regarding the use of evaluation licenses.

Location:

Date:

Signature:

End User License Agreement for EvoluteTools for Rhino

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A contract between Evolute GmbH (“Evolute”) and a contracting party (“CP”) results either from Evolute and CP (“parties”) entering into a written contract or from an offer being made by Evolute and being confirmed without any changes by the CP. Should the order confirmation differ from the offer, these changes are only valid once explicitly confirmed in writing by Evolute.

Prices

Prices are based on the agreement between the parties. All prices are stated in Euro, net without VAT.

Payment Terms

Payment terms are as stipulated in the contract, or, if the contract does not include payment terms, one third of the order value is payable upon conclusion of the contract, one third at the start of the implementation phase, and one third upon completion of the project. Invoices are payable net within 21 days. Payments will always be offset against the oldest claim arising from overdue invoices, regardless whether the claim arose from this or another contract between the parties.

Waiver of Claim Offsetting

The CP must not withhold payments for received goods and services and offset them with claims against Evolute; this includes warranty and liability claims.

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The CP must give written notice of obvious defects within 14 days; hidden defects must be reported within 7 days of discovery. The CP acknowledges that failure to give notice of defects voids warranty claims, the right to challenge defects as well as entitlements for compensation. Notice of defects is also necessary in case of incorrect delivery or incomplete services; in this case the CP has to set a reasonable term for Evolute to provide the contracted services. The CP is not entitled to make any claims for compensation of damages or to terminate the contract.

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