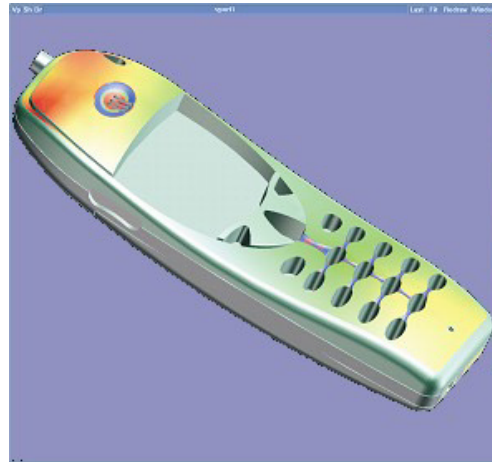


OneSpace Designer Modeling

Surfacing

The Surfacing module supports designers in creating highly styled and ergonomic products in an easy and intuitive way. With a wealth of creation, modification, and analysis capabilities, designers can create ergonomic products with confidence.



Modeling Foundation

OneSpace Designer Modeling is a collaborative modeling solution whose hybrid modeling foundations support the creation of both accurate analytic and highly sculptured surfaces (NURBS). Building on these foundations, the Surfacing module features modeling operations that either create a set of topological trimmed surfaces (face parts) or a complete topological solid model as appropriate. OneSpace Designer Modeling's unified data structure not only supports wire parts, face parts (trimmed surfaces) and solids, but also allows the integration of different part types into a single assembly model. Wire parts or face parts can also be easily converted to solid parts.

Benefits of Surfacing

The Surfacing module extends OneSpace Designer Modeling's rich set of collaborative modeling operations to allow complex sculptured shapes to be created, allowing both stylistic and ergonomic considerations to be incorporated into the design. With Surfacing, the designer can easily describe parts with sculptured shapes by merely referencing planar or non-planar curves. Solid or surface models can be generated, and surfaces can easily be used to manipulate the solid model. Imported incomplete solids can also be easily manipulated in order to create valid solid models.

Key Features

Existing free-form modeling operations and tools to repair incomplete solids within OneSpace Designer Modeling are:

- **Loft** – to generate a solid using cross-sections with tangency control.
- **Insert face by boundary** – to create a face using 2D or 3D edges.

- **Helix** – to generate or remove material by moving a 2D closed profile along a user-defined helical curve.
- **Sweep** – to generate a solid by moving a 2D closed profile along an arbitrary 2D or 3D curve.
- **Untrim/grow** – to modify a face by untrimming and extending a given surface.
- **Trim Face** – to modify a face by trimming a given face with another face.

Additional features provided with Surfacing are:

- **Curve operations** – to define curves in space. Used for example, when designing complex sculptured shapes.
- **Skin** – to create a sculptured face from a set of 2D or 3D edges defining a mesh.
- **Cap** – to create a smooth cap on top of an existing closed loop of edges.
- **Advanced Sweep** – to create sculptured faces by sweeping an open profile along a given guiding spine. A second spine can control orientation or scaling of the profile.
- **Multi-Profile Sweep** – to create sculptured faces by multiple profiles and a guiding spine. Multi-Profile Sweep is based on the Skin operation.
- **Dynamic Surface Styling** – to manipulate dynamically any styled surface of any model independent of creation tools and history.
- **Curvature analysis** – to analyze curvature of selected curves to detect possible quality issues.
- **Surface analysis** – to analyze surface curvature of selected faces to detect quality issues.
- **Surface smoothing** – to smooth existing surfaces interactively to improve quality of shape.

OneSpace Designer Modeling

Surfacing

The creation of a solid from a face part is supported by advanced operations such as:

- **Thicken** – to create a solid out of a given face part and a user-defined offset.
- **Extrude** – extrusion of a face part through a user-defined distance in order to create a solid.
- **Offset** – to manipulate an existing face part using a user-defined offset.

Specific Product Features

- Add-on module to OneSpace Designer Modeling
- Fully integrated within the OneSpace Designer Modeling user interface
- Provides an easy, intuitive way to create highly complex sculptured models
- Supports the repair of imported incomplete solids
- Completely integrated, unified data structure for wireframe, surfaces, trimmed surfaces, and solids
- Advanced set of operations including:
 - 3D Curve creation and modification.
 - Skin.
 - Advanced Sweep.
 - Multi-Profile Sweep.

- Bridge Surface.
- Cap.
- Thicken.
- Offset.
- Dynamic Surface Styling.
- Surface Smoothing.
- Surface analysis allows detection of possible surface quality issues by analyzing the surface curvature of selected faces
- Curvature analysis allows detection of possible curve deficiencies by analyzing curvature of selected curves

System Requirements

OneSpace 2002 and later.

Runs on the same platforms as OneSpace Designer Modeling:

- HP-UX® 11.0/11i (ACE 1199)
- Windows NT™ 4.0
- Windows 2000™
- Windows XP™ professional

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Ordering Information	
Surfacing	C250
Surfacing Support	C250A
Prerequisites	C200
Modeling	
Electronic manuals are available on the OneSpace media.	

Co|Create

For more information, please contact the following CoCreate offices or visit
www.cocreate.com
www.cocreate.com/eSupport

Germany
Phone: +49 (7031) 951-0

**United Kingdom
and other European countries**
Phone: +44 (1789) 778549

USA
Phone: +1 (970) 267-8000
Toll free: +1 (888) CoCreate

France and Spain
Phone: +33 (1) 69189-113

Italy
Phone: +39 (02) 924425-21

Singapore
Phone: +65 (550) 9665

Japan
Phone: +81 (42) 352-5654

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