Shape Design & Styling
CATIA - Generative Shape Design 2 (GSD)

CATIA V5R20
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CATIA - Generative Shape Design

Help to design advanced shapes that are based on a combination of wireframe and extensive multiple surfaces. It includes high-level features with full specification capture and reuse.

Product overview

CATIA - Generative Shape Design (GSD) helps to design advanced shapes based on a combination of wireframe and extensive multiple surface features, with full specification capture. CATIA - Generative Shape Design (GSD) includes all the functions and commands from the CATIA - Generative Shape Design 1 (GS1) product. It provides an extensive set of tools for creating and modifying mechanical surfaces used in the design of complex shapes or hybrid parts. Its feature-based approach offers a productive and intuitive design environment to capture and reuse design methodologies and specifications.

Knowledgeware and laws functionalities included in CATIA - Generative Shape Design (GSD) bring to the user the best in class tool to faster create complex surfaces. In addition of CATIA - Generative Shape Design (GSD) the new CATIA - Generative Shape Optimizer (GSO) product allows to access to powerful global deformation technologies.

Product Key Customer Benefits

GSD shape design features...

CATIA - Generative Shape Design 2 provides a comprehensive set of features for shape design. These include wireframe elements: point, line, angle, plane, curves, circle, (bi-tangent, tri-tangent, through and trimmed), spline, parallel curves, corner on plane, connect 3D, spiral sphere, intersection and projection.

Standard and advanced surface features include extrude, revolute, sweep, (including segment and circle), offset (including skin) and fill. Both standard and advanced combinations of elements use associative transformation, including symmetry, scaling, translation, affinity, extrapolation and fillet.

Product Highlights

- Comprehensive set of advanced associative shape design features
- Shape Structure Editor facilitates the capture of design intent and speeds up design changes
- Integrated with CATIA Part Design and CATIA FreeStyle products for hybrid design

Time-saving modifications management
Flexible post-design 3D parameterization
Reuses the same surface geometry in different parts allowing concurrent engineering
An other example of a smart modification system: The Adaptive sweep function. This functionality allows to create some high level and complex mechanical surfaces.

Combining Surfaces... GSD has features that are used to join several surfaces together while assembling, trimming and splitting them.

Shape Structure Editor... GSD's Shape Structure Editor facilitates the capture of design intent and accelerates design changes. Fast, specification driven design changes are done using Cut, Copy, Paste, Drag and Drop and Edit. The feature editor can zoom and pan the surface design specification. The surface design specification can be also displayed in various modes, such as the Windows Explorer tree style or CATIA V4 "V" shaped tree style, displaying all dependencies between features.

CATIA Integration... GSD surfaces and skins can be integrated with CATIA Part Design and CATIA FreeStyle products for hybrid part designing. Shapes can be designed using the part and assembly context. When design changes are required, the user can control the propagation of modifications. The FreeStyle capability is improved with the addition of wireframe function.

Surface Geometry Reuse... GSD can reuse the same surface geometry in multiple instances, allowing concurrent engineering to take place. It can reuse a surface geometry linked to an existing surface providing master model design methodologies.

Managing Changes... Several GSD features help for efficient management of design modifications. For example, a datum curve or skin (even non-isotopological) used in one feature can be replaced; A set of features can be isolated as a single feature (with no history) to facilitate design comprehension and accelerate design changes.

3D Post-Design... Flexible post-design 3D parameterization can be performed during the creation of a feature or after the design is completed, by adding 3D constraints to the features. Under-constrained designs are allowed and over-constrained designs can also be created. In such cases, CATIA will alert the user, asking for a decision on which constraint to remove.

User Interface... The Windows user interface reduces the learning curve for new users. An assistant helps create and modify wireframe elements in a 2D environment.

CATIA V4 Compatibility... GSD is with CATIA Version 4 data and its portfolio of applications. A surface created in CATIA Version 5 can be used by CATIA V4 applications. Existing CATIA V4 curves, surfaces, faces, skins and clouds of points can be migrated to CATIA V5 as necessary.
ABOUT CATIA V5R20

CATIA is Dassault Systemes’ PLM solution for digital product definition and simulation.

www.3ds.com/products/catia