

#### About Dassault Systèmes

As a world leader in 3D and Product Lifecycle Management (PLM) solutions, Dassault Systèmes brings value to more than 115,000 customers in 80 countries. A pioneer in the 3D software market since 1981, Dassault Systèmes applications provide a 3D vision of the entire lifecycle of products from conception to maintenance to recycling. The Dassault Systèmes portfolio consists of CATIA for designing the virtual product - SolidWorks for 3D mechanical design - DELMIA for virtual production - SIMULIA for virtual testing - ENOVIA for global collaborative lifecycle management, and 3DVIA for online 3D lifelike experiences.

For more information, visit <http://www.3ds.com>.

[www.3ds.com/catia](http://www.3ds.com/catia)

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# CATIA FOR CREATIVE DESIGNERS

 **DASSAULT  
SYSTEMES**

*See What You Mean*

 **CATIA**

# CATIA FOR CREATIVE DESIGNERS

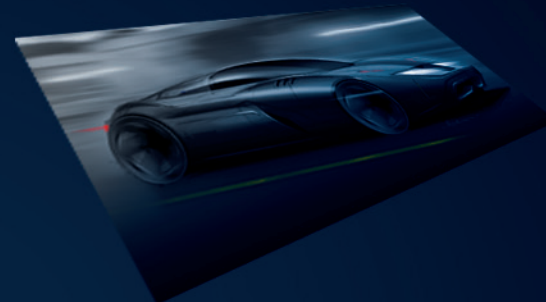
A unified industrial design workflow solution to imagine, create, share and experience.

Discover in the following pages the added value of CATIA can bring to your design process, from early ideation to product recycling in the following pages.

Beyond the synthetic information displayed here, you will find on the last page of this brochure the associated online address to learn much more. Enjoy your visit!

## Experience your design "live":

From concepts to production "go", place your products in lifelike conditions before they physically exist. Real time visualization and realistic renderings support design validation and empower your communication. Early simulations such as kinematics, stress, thermal, or vibration analysis lead you to unexplored innovative options. Build new product experiences and ensure customer satisfaction by preparing user manuals and maintenance guides in advance.



*create*

*imagine*

*experience*

## Further in detailed design:

You are in the driving seat to push your concept forward, taking advantage of CATIA best-in-class hybrid modeling up to Class-A surfaces to reach new summits. Detail your product in assembly context, with immediate access to movement simulations. Any new feature required by the marketing department? Perform the expected modifications on key components, and update impacted ones on-demand. Create production drawing as you go, with 3D design associativity when relevant.

## From ideation to concept:

Start your 3D ideation from scratch as well as from 2D sketches. Combine the virtual clay modeling approach of Imagine & Shape with free-form and parameter-controlled surfaces. Produce exact surfaces and solids outputs, for sharp and efficient communication within and throughout your project team, ensuring design intent is understood by all project actors.

## Share and collaborate:

3D becomes a common language both within and outside of your company. Establish your project-focused collaboration platform for all involved actors with a single and safe place to store product definition. Design, engineering and manufacturing data is accessible from anywhere, anytime and is always up-to-date! Your Company know-how is capitalized for re-use where relevant, in an optimized manner. And finally, 3D design can be shared beyond the design community using 3DXML format, by email!

*share*

imagine

## HAVE MORE IDEAS COMING TO LIFE... IN 3D !

Designed with :  
CATIA Industrial Designers Package

Rendered with :  
CATIA Real Time Rendering



### CATIA Freestyle Sketch Tracer

Leverage 2D design artwork, integrating it within CATIA 3D environment. Select your sketch, position it in the background, scale it to your needs, and start with CATIA 3D creative modeling!

### CATIA Imagine & Shape

Convey more emotions with a new vehicle that reaches unexplored territories. Way beyond traditional surface modeling, CATIA Imagine & Shape introduces a virtual clay paradigm to support rapid exploration in creative concept design. Its accurate surface definition represents one more competitive advantage, since all project actors can re-use it directly. Whatever your domain or product complexity, whatever your modeling skill level, from beginner to 3D expert, its intuitive user interface provides immediate access to professional results.

### CATIA Live Shape

New ideas popping-up? Start a 3D brainstorming session with CATIA Live Shape to explore them further! An amazing direct solid modeling approach makes you feel comfortable and productive in no time. Push and pull on faces, drag and drop features in a natural way. Need to start from a part generated in another 3D CAD package? Just start from this part as if it had been built in CATIA from the beginning. Immediate ease of use, for immediate benefits.

### CATIA Live Compose

Your concept parts and standard components are virtually laying on the table, right in front of you, ready for an interactive test and try session. Select the ones you want, cut, copy, paste, group and ungroup, making it simple and quick to structure new assemblies and combine them with existing ones, directly in 3D. Try more options intuitively, in no time!

My main focus is auto design, but I sometimes need to escape to crazier worlds. Toys are more and more present in consumer products. For this docking station, I wanted something friendly and fun.

I am usually not a 3D guy, and the virtual clay modeling approach of CATIA Imagine & Shape helped me to go straight to the point and try many wild options. To tell you the truth I have been through a whole bunch of pets before converging on this rabbit!



**Charles Pasquier,**  
Transportation Designer  
at Dassault Systèmes  
Design Studio

Designed with:  
CATIA Industrial Designers Package  
Rendered with:  
CATIA Real Time Rendering



**Sebastien Rosel,**  
Design Manager at Dassault  
Systèmes Design Studio

This new 3D scanner project was a great opportunity for a holistic design approach. From the early stage, the user experience was set as a top priority. Iterations started with the Noomeo engineering team to address technical constraints, with manufacturability in mind. With CATIA as our common 3D language, I have to say that design convergence went pretty straightforward. Several key ideas were implemented very late. For example, we had to add an unexpected inner rubber padding to protect internal components. Despite the impact on the external body and the coherent style change we had to apply, we managed to stick to the initial schedule. Will you believe me if I tell you that the detailed proposal was finalized in just 4 weeks?

### **CATIA Freestyle**

A powerful and easy to use set of surface-based applications helps you define all kinds of shapes to build-up your product lines. Create, combine, smooth, trim curves and surfaces. Check their quality on the fly, with real time extensive and advanced diagnostic tools.

### **CATIA Generative Shape Design**

Assemble multiple wireframe and surface features altogether to design simple to complex hybrid parts. An extensive set of tools supports the highest quality standards. Set-up associativity on-demand for easy and efficient design change propagation. Concentrate on high value-added tasks using advanced knowledge-based capabilities like powercopy to capture and re-use frequently used elements.

*create*

## **FURTHER IN DETAILED DESIGN**

### **CATIA Functional 3D Modeling**

Experience a history-free approach in solid modeling! Reach unmatched productivity and flexibility to design cast, molded and forged parts. Set-up the complete functional specification both for your parts and their associated tooling, and you are done. Feature creation order no longer has any impact on part structure, so that you can concentrate on key functional objectives.

### **CATIA Part Design**

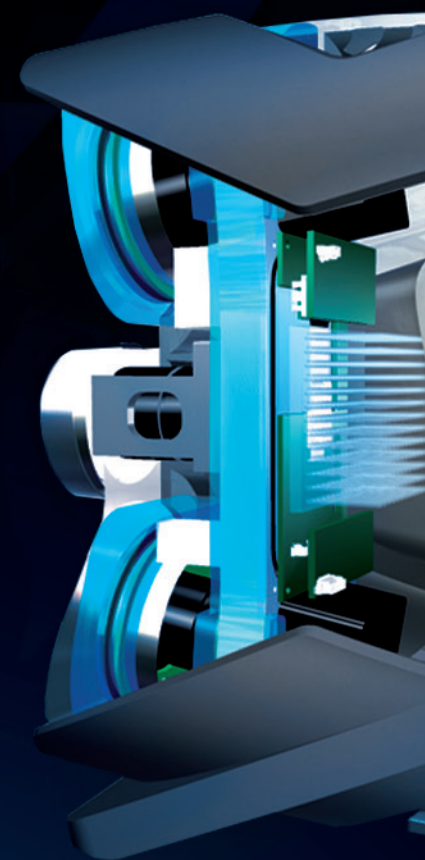
A unique "Smart Solid" design engine combines feature-based design with a boolean approach for more flexibility. Whatever your preferred design methodology, it offers a highly productive and intuitive mechanical design platform. Any CATIA applications such as Assembly Design or Generative Drafting take advantage of CATIA Part Design data as you move forward with your project.

### **CATIA Assembly Design**

Design in assembly context and manage your assemblies in a collaborative spirit. Start from your product structure (top-down), or assemble individual components (bottom-up). Dynamically drag parts into position, reorder them, place assembly constraints, check collisions and clearances. Stay focused on design and innovation by accessing your standard components through catalogs. Key outputs such as exploded views and bill-of-materials are generated automatically.

### **CATIA Generative Drafting**

Generate associative drawings from your CATIA 3D design in a single-click operation, no matter what it's made of (surfaces, solids, hybrid parts, assemblies, etc.). Generate 3D dimensions automatically with placement control. Add your annotations and dress-up features when needed. Drawings associativity with 3D design provides additional flexibility for concurrent design and drawing production.



create

## EXCELLENCE IN SURFACE QUALITY

How about integrating key concerns such as energy efficiency, emissions, and product recycling specifications from the early stages of the product development process?

Environmental protection is one of our shared objectives. CATIA federates your corporate assets, enabling all project actors to capitalize and re-use company practices for sustainable innovation, all the way from the first project ideas to product recycling.

### CATIA ICEM Shape Design

Class-A surfacing often takes place within an isolated explicit modeling environment. Shape refinement requires multiple iterations, with related design updates and time consuming data exchange with mainstream PLM CAD systems. CATIA ICEM Shape Design provides a new level of integrated products to create, analyze and edit aesthetic and ergonomic shapes up to the highest Class-A surface quality.

The more demanding your industry is, the better productivity gains you will experience.

The hybrid world of both explicit, direct surface modeling techniques and associative feature-based methodology becomes yours, for an even more streamlined product development process.

### CATIA Reverse Engineering

Import digitized data, perform clean up, tessellation, cross sections, character line, shape and quality checking with real time diagnosis. Choose your preferred strategy for surface reconstruction, and manage your inspection process, comparing clouds of points with design models.

Discover a new milestone in restyling, leveraging the CATIA unified modeling environment: you can now generate subdivision surfaces from clouds of points, and develop new style options with CATIA Imagine & Shape. Give it a try!

## EXCELLENCE IN SMART DESIGN

### CATIA Knowledge Expert

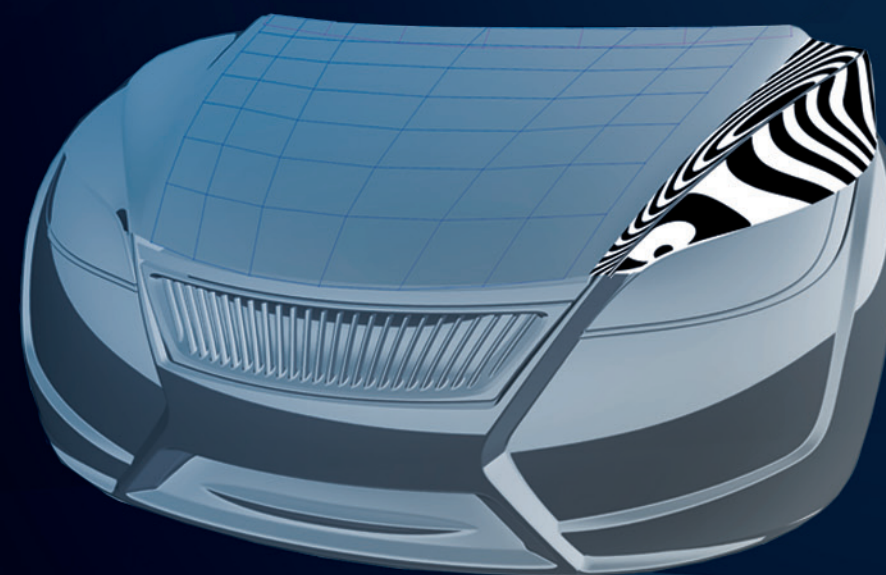
Capture and re-use company practices and standards to take advantage of them when and where relevant, ensuring design compliance with established standards. This rule base automates knowledge re-use processes such as department or company best practices, and design compliance to company quality standards. The report outputs identify standards violations and help to implement necessary corrections.

### CATIA Product Knowledge Templates

Create your own CATIA smart features, parts and assemblies templates, instantiate them in a fully adaptive way, and perform associative modifications in context.

Access to resulting instances and templates references is streamlined by the CATIA Catalog infrastructure.

Other groups within your company can re-use such encapsulated knowledge, with full control of the intellectual property, securing critical know-how when needed. Whatever your industry, CATIA - Product Knowledge Template adds value to your design, improves your design process efficiency, and federates your best practices sharing.



# 3D AS A UNIVERSAL COLLABORATION LANGUAGE

## A Global Collaborative Innovation Platform

Collaborative innovation is about managing intellectual property lifecycle and harnessing the extended enterprise collective intelligence. ENOVIA V6 provides you with an open, online collaborative environment involving creators, collaborators, and consumers, on a single IP management platform, for all product lifecycle activities. It federates your product-related data and knowledge, no matter where they reside. Ground-breaking collaboration tools enable 3D brainstorming within the extended product design and development community, to reach a new level of innovation. Broaden CATIA usage to additional team members and to casual contributors within your design and engineering departments, and beyond.

## 3D Live

Provide global teams with a shared 3D workspace for all product-related data. Product details are easier to understand for all project collaborators. Because issues are easier to detect, they can be solved earlier in the lifecycle, improving time to market and reducing costs. Leverage intellectual property from all contributors for faster innovation, higher quality, and regulatory compliance. Productivity soars as geographic and organizational boundaries disappear, with stakeholders sharing data via a single, secure, and interactive 3D environment.

## 3DXML format

The 3D XML format is the most efficient solution to share CATIA 3D data within and beyond the CATIA users community. Generate 3D XML files anytime from CATIA 3D models, and share them via email or via MS office documents. To experience easy viewing, rotation, zooming and manipulation, just download the 3DVIA player from the DS 3DVIA website and install it on your PC. Easy multi-purpose 3D data sharing and reuse stretches way beyond PLM applications.

## CATIA Distiller

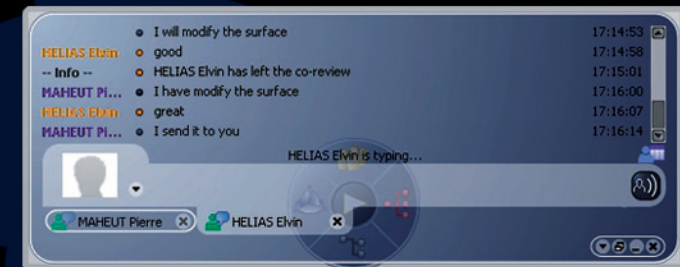
Optimize your CATIA 3D models for virtual reality experiences with 3DVIA solutions. Re-organize data, adjust tessellation, and suppress invisible areas. Store "distilled" 3DXML models in the V6 database, for future re-use and sharing with your online communities.

## CATIA Iges & Step Interface

CATIA IGES & STEP Interfaces help designers working in a heterogeneous design system environment to exchange data in a neutral format. Reliable bi-directional 2D and 3D data exchange can be performed between the different systems with direct and automated file access. CATIA offers a homogeneous user interface for all supported formats.

## CATIA STL Rapid Prototyping

Quickly and accurately create STL files from CATIA concepts and products. Import existing STL files, display the mesh for quality check, and improve the mesh quality with advanced tools. Thin offsets can be generated to obtain watertight solids. Your parts' meshes can be exported as standard binary STL files for rapid prototyping machines.



*Share*

During my design exploration for new headphones, I found quite common shapes. I wanted something different, more like an artist's sculpture. I did my best to express elegance and technology with a clear high-tech spirit. 3D modeling solutions sometimes limit designers' creativity but believe me, this is not the case with CATIA! I developed my first ideas directly in 3D, combining shapes and technical inputs altogether in an innovative assembly architecture. What do you think about the gray anodized aluminum I chose to finish the main covers? Can you feel its qualitative and pleasing touch in this rendering image?



**Jean Hong,**  
Product Designer at Dassault  
Systèmes Design Studio

Designed with :  
CATIA Industrial Designers Package  
Rendered with :  
CATIA Photo Studio

## LIFELIKE EXPERIENCE AS PART OF YOUR DESIGN



### CATIA Real Time Rendering

Develop your concepts and products in the dynamic context of real time realistic rendering. Create your textures from scratch, from imported digital images, or select them in the CATIA library. Apply materials through a specification-driven approach or through simple selection.

Improved reflections, ground and object-to-object shadows simplify volume and proportion understanding, for more efficient real-time design reviews and decision making sessions.

### CATIA Photo Studio

Generate top quality photo-realistic images from your digital products, taking advantage of Mental Ray® ray-tracing engine. Image realism benefits from global illumination, caustic effects, realistic soft shadows, accurate light reflections and refractions, providing added value for design validation sessions. CATIA Photo Studio leverages your concepts and products both for internal communications (decision making) and external ones (customer presentations, media and press communications, and websites).

### Live Human Solutions

As product usability influence grows in purchase decisions, the user-centered approach

### 3D VIA Composer

Create interactive product documentation, animation, technical illustrations and more! By reusing your 3D design data and bills-of-material information, 3DVIA Composer revolutionizes the product documentation process, and effectively automates your document-based processes such as: assembly instructions, customer service procedures, installation documents, field service repair manuals, user manuals and training, and marketing materials.

### 3D VIA Virtools

Develop exceptional interactive, real-time applications!

3DVIA Virtools is a complete development and deployment platform with an innovative approach to interactive 3D content creation. Its production process provides robust prototyping and development for immersive or online lifelike experience delivery. Breaking away from traditional environments, 3DVIA Virtools helps to meet your production requirements on schedule, with reduced production costs and minimized risks. 3DVIA Virtools addresses a wide range of needs, such as design reviews, shopping experiences, simulation-based training, adver gaming, sales configurators and more.



## DISCOVER MORE CONTENT ONLINE

- CATIA virtual design detailed portfolio
- Design stories and designers' testimonies
- CATIA 3D models, CATIA realistic rendering images, and more...

<http://www.3ds.com/products/catia/welcome/>

Product Design

### CATIA Industrial Designer's Pack

#### Unified Workflow Solution for Styling & Concept Design

##### Styling & Concept Design

- Sketch integration with CATIA Live Shape
- Direct modeling with CATIA Live Shape
- Imagine & Shape subdivision surfaces technology
- Direct surfacing modeling suite
- Mechanical surface design
- Mechanical and asynchronous collaboration
- Instant-time, high-end visualization and photorealistic rendering
- Real-time, high-end visualization and photorealistic rendering with Mental Ray
- Drafting generation
- Export to standard file formats: STEP, IGES or STL files for rapid prototyping and machining

##### Collaborative Platform

- Concurrent and collaborative design
- PLM 2.0 pre-configured environment in the native user environment
- PLM 2.0 search and navigation from 3D workspace
- Unique search and navigation from 3D workspace
- Work-in-progress product information to manage, review, and reuse project data
- Fully secured environment

3S CATIA

CATIA Rendering

High-end visualization for styling presentations and decisions

3S CATIA

Transportation Design

