3DEXPERIENCE CATIA
RELEASE HIGHLIGHTS-R2018x
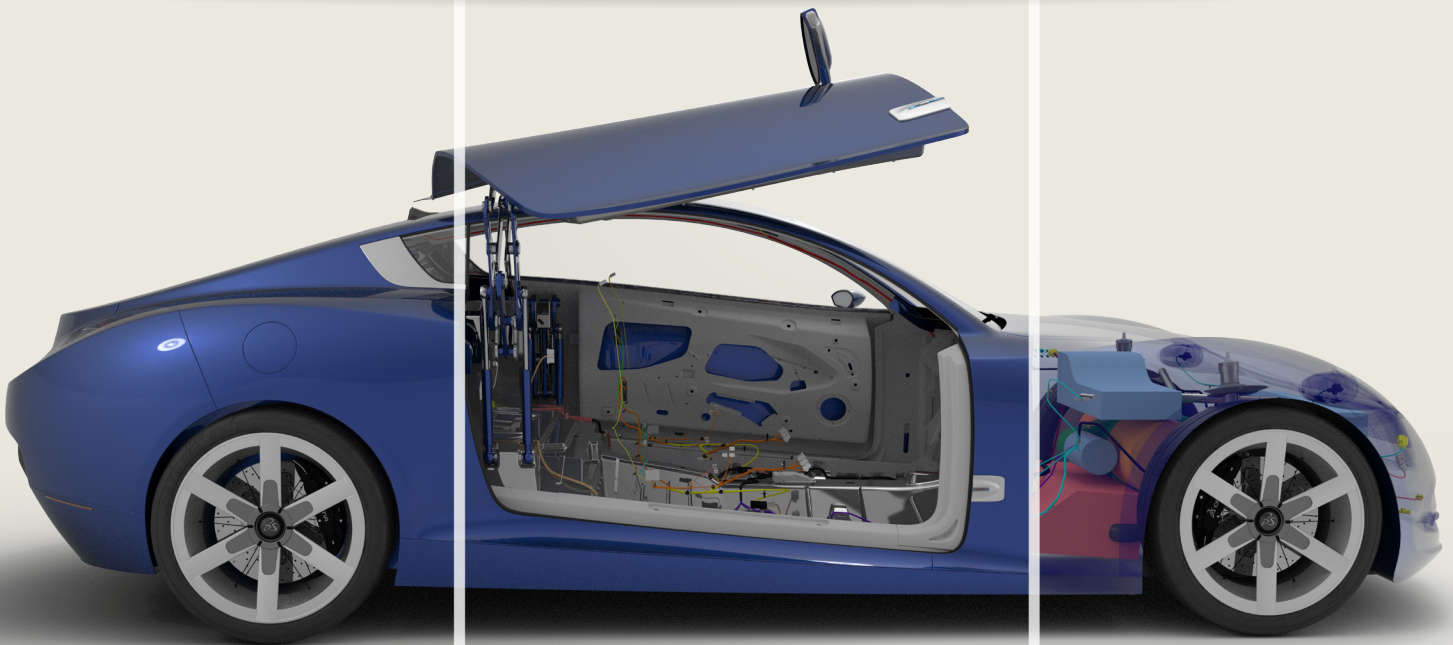
3DEXPERIENCE

Designers   **Engineers**   **Systems Engineers**

## THE LATEST RELEASE OF CATIA IS PACKED FULL OF ENHANCEMENTS TO IMPROVE YOUR DESIGN PROCESS.

3DEXPERIENCE R2018x brings major improvements to your design process.

- *The overall enhancements for everyone include the new Power'By strategy and the new Immersive Collaborative Experience.*

- *Designers can take advantage of the new Human Experience app and CATIA's unified modeling for design workflow.*

- *Engineers can benefit from the new Stamping Die Designer role and the enhanced Function Driven Generative Designer role.*

- *All participants in Architecture Engineering and Construction projects can benefit from an extended and enriched industry focused solution for AEC.*

- *Systems Engineers can enjoy multiple enhancements and additional roles to make your job easier and more productive.*

For Everyone

Power'By

R2018x opens up the power of the **3D**EXPERIENCE Platform to users of CATIA V5. Customers will get all the benefits of the **3D**EXPERIENCE and its platform without migrating their data (files) or disrupting their existing processes. Even users with a single seat of CATIA V5 can have instant and seamless access on the cloud to the **3D**EXPERIENCE for Simulation, Manufacturing, Collaboration and unique additional Engineering capabilities.
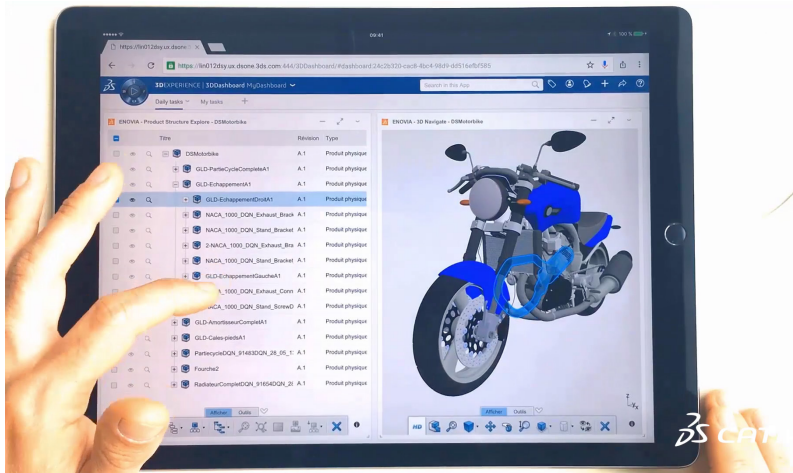
Engineers can continue to use V5 to create new models, and make these and their existing V5 models available on the platform at once. Here they are secured, managed, tagged, visualized and shared with all product stakeholders. The **3D**EXPERIENCE Platform brings out-of-the-box capabilities to share and collaborate, and integrate fully with non-specialists across the value chain, making the data instantly more valuable.

INTERACTIVE AND SOCIAL VR: IMMERSIVE COLLABORATIVE EXPERIENCE (ICE)

With R2018x distributed teams can now collaborate in immersive virtual reality in an instant, experiencing the product together in real time. Any user of the **3D**EXPERIENCE platform, such as Engineers, Designers, Managers and collaborators, can simply plug and play their HTC Vive head mounted display to immediately jump into a shared virtual reality experience of the product, which mimics collaboration in real life. For example, CATIA users can switch from their normal environment and continue to work in a stereoscopic virtual reality environment. No specialized viewer or data translation is required.


In this interactive social environment there is full awareness of every other participant, their positions and interactions. Participants can walk together around the product, see how others indicate and interact with the product, and, you can even teleport to the position of another engineer to ensure an identical point of view. The truly immersive collaborative experience and natural navigation brings an enhanced spatial understanding of the product design to extended teams, no matter where they are located, for faster and more accurate team decisions.

For Designers

HUMAN EXPERIENCE

The new Human Animation app allows designers to understand and optimize the consumer experience of a product. Designers can animate the physical interaction of a human with their product and better explore and understand it as a result. Accurate complex human animations can be created or imported and analyzed, such as a driver in a car who is moving his arms, hands and fingers to touch buttons. The animation can be replayed and studied, allowing full consideration of the human experience from the very early stages of product design.
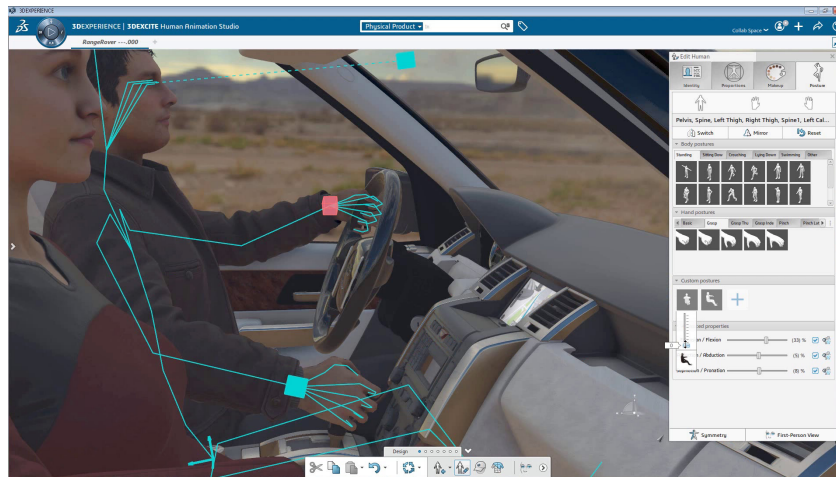

UNIFIED MODELLING FOR DESIGN WORKFLOW

CATIA provides a unified modelling environment in which the designer can choose from several modelling mathematics to create shapes and then mix them together.

For example, designers can combine the creative flexibility of subdivision surface modelling, with the precision of explicit ICEM "Bezier" surfaces, such as styling fillets. All types benefit from the power of associativity, templates and knowledgeware.

R2018x allows a designer to match a subdivision surface to any other geometry, with full control of continuity and full associativity when the geometry changes. This new capability will improve the quality of the digital workflow.
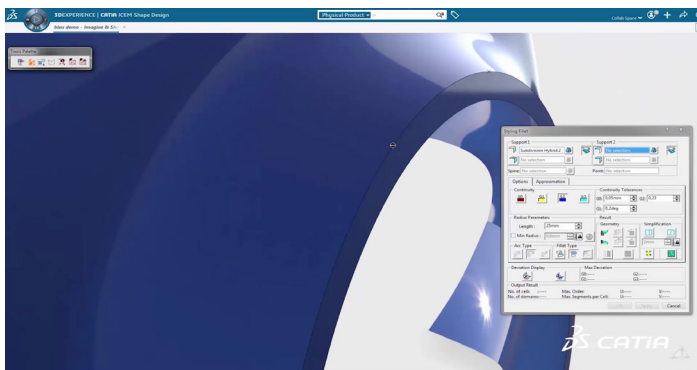

For Engineers

STAMPING DIE DESIGNER

A new role, Stamping Die Designer, increases productivity by guiding users from the conceptual planning through to detailed tooling design of complex stamped sheet metal parts.

Easy to use specialist features and wizards guide the user in best practices, helping the tool designer work with and extend complex surfaces without having to be a surfacing expert. The role has a discipline-specific set of functions for the optimization of stamping direction, creation of addenda surfaces, trim lines and spring-back compensation, all with full associativity to the original part geometry.

This ensures high quality die geometry and right-first –time tooling.
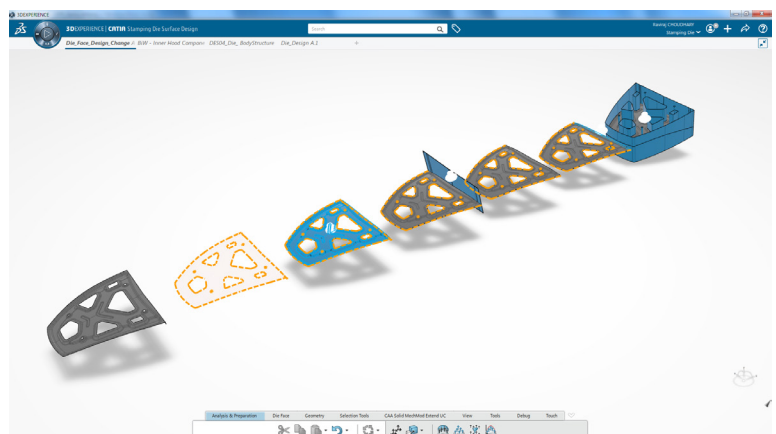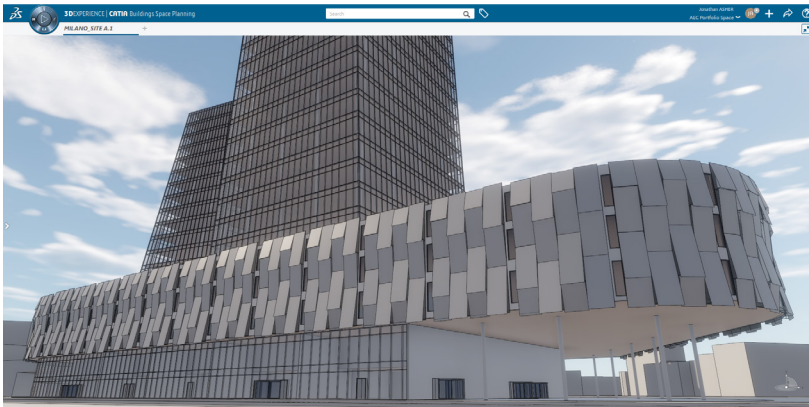
ARCHITECTURE ENGINEERING AND CONSTRUCTION

R2018x sees the launch of an extended and enriched industry-focused **3D**EXPERIENCE CATIA solution for AEC which addresses all participants in the end-to-end building process.

It brings new roles tailored specifically to the needs of conceptual or detailed-oriented Architects, Structural Engineers and MEP Engineers. Industry-tailored functions and templates allow them to quickly and simply reach their required Level of Detail (LOD). Powerful automation accelerates the design process by eliminating repetitive tasks. For example, by combining an intuitive user interface and a predefined, reusable parametric façade panel template, an entire facade of unitized curtain wall panels can be automatically generated on the design surface of a conceptual building model. As the LOD matures, full digital continuity is maintained across the lifecycle of the building.

In addition, a new role has been created for General Contractors and Construction Model Managers. With this new role, construction projects will be better managed by integrating large models from multiple stakeholders to easily coordinate various building trades. By being able to zoom, review and analyze different parts of the project, check for geometric clashes or model simple shapes, this new role will put the 3D model at the center of construction projects.

FUNCTION DRIVEN GENERATIVE DESIGNER

In CATIA R2018x, the unique Function Driven Generative Designer (GDE) role has been enhanced to allow non-specialist designers to automatically generate optimized conceptual assemblies from functional specifications.

The designer simply provides a set of requirements, including the 3D envelope, connections, the loading scenario, material, weight reduction targets for lightweight engineering, and the desired manufacturing process, either traditional, such as milling, casting or forging, or additive manufacturing.

The push of a button runs a simulation and generates the optimized concept assembly shapes. The designer can quickly create multiple variants for comparison and trade-off studies by varying the inputs, such as different weight reduction targets, load cases, constraints etc..

This unique capability allows the creation of shapes which could not be imagined using a conventional design approach, while respecting the designer's specification and dramatically reducing weight.

This results in fully-usable high-quality real surface geometry, within your engineering and manufacturing CAD environment. The geometry can be directly refined and shared on the **3D**EXPERIENCE Platform by all disciplines, from detailed design through analysis and manufacturing. For instance, the product can then be comprehensively validated using full loading conditions such as frequency and buckling.

This release also introduces design features dedicated to specific manufacturing processes, such as overhang constraints for 3dprinted parts and a reconstruction wizard for milled parts.
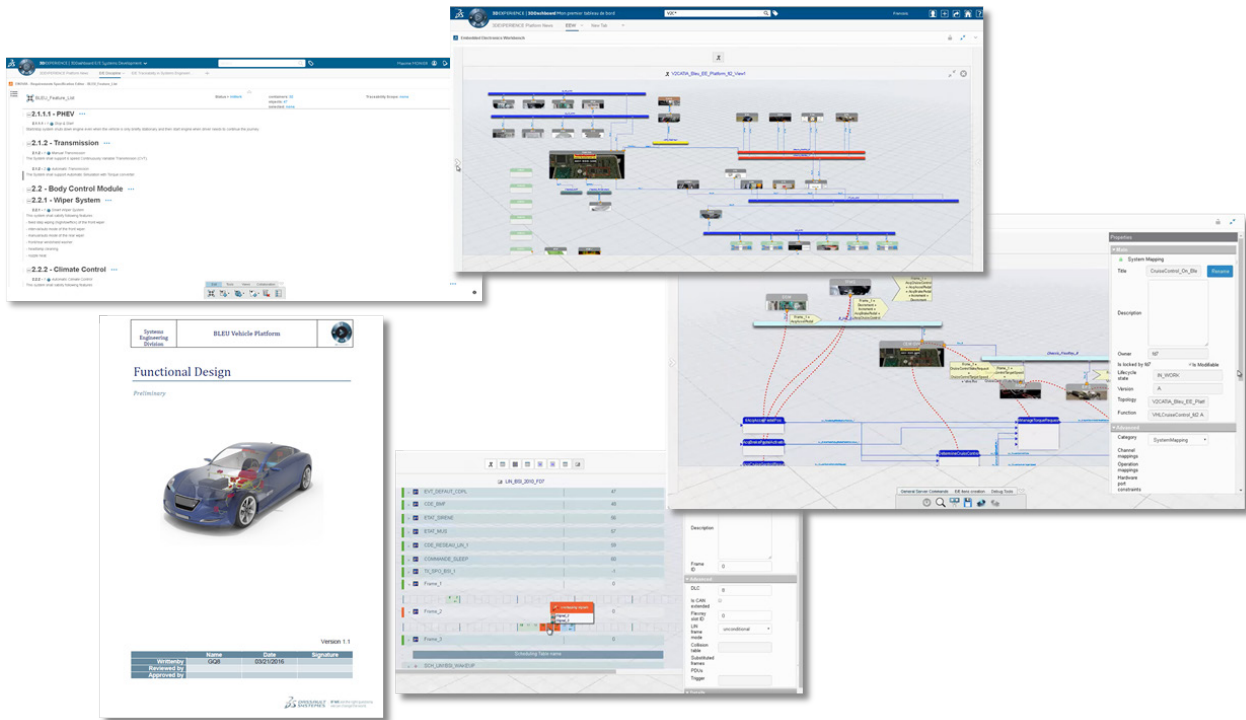
CYBER SYSTEMS ENGINEERING

R2018x delivers multiple advances in Cyber Systems Engineering, extending an already unique solution which delivers digital continuity to design, validate and experience mechanical, electronic and software systems, and fully integrates with other existing systems.

The new Electrical and Electronic Architect role allows web-based definition, development and management of embedded electronics and software across a complete vehicle and its variants, including communications networks. Now Vehicle Hardware Architects, Functional and Software Architects and Network Architects can work and collaborate in the context of a shared complete vehicle architecture on the **3D**EXPERIENCE Platform, removing design errors and misunderstandings. This single view means that fully accurate reports can be generated and shared across the supply chain, ensuring consistency.

The System Quality Analyst role enables the assessment of the quality of an architecture by identifying undesirable effects and their possible causes. The System Safety Analyst role enables the design of safe systems which avoid failures by estimating the probability of failure of an architecture from a fault tree analysis.

Click here to watch a short video summary of the CATIA R2018x Highlights.

Our **3D**EXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3D**EXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 210,000 customers of all sizes in all industries in more than 140 countries. For more information, visit **www.3ds.com**.

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