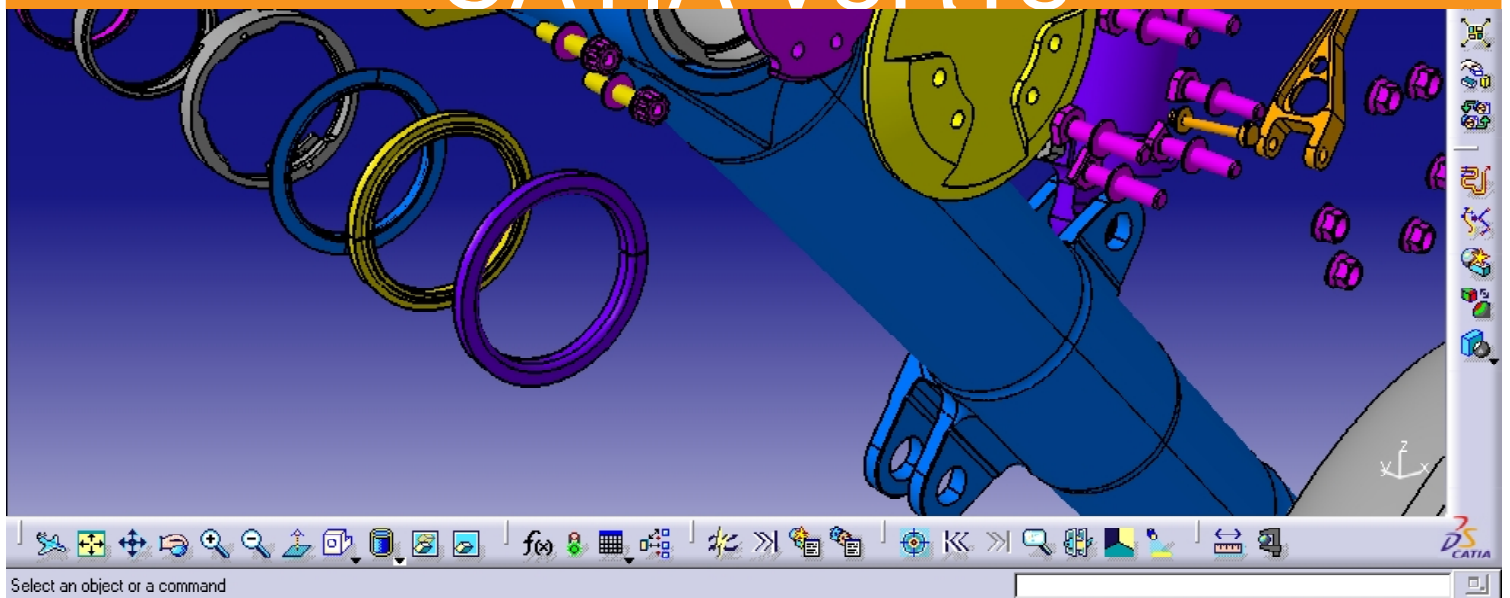


Product Synthesis
DMU Fitting Simulator 2 (FIT)

CATIA V5R18





Product Synthesis

DMU Fitting Simulator

Define, simulate and analyze assembly/disassembly operations for digital product validation and animations

Product overview

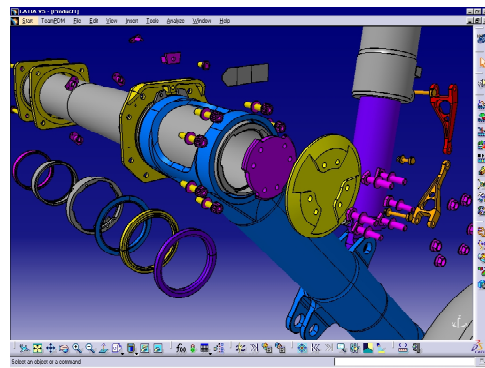
DMU Fitting Simulator 2 (FIT) is dedicated to the definition, simulation and analysis of assembly/disassembly operations to validate a product design regarding the feasibility of its maintenance operations (assembly/disassembly operations). It generates useful information on space reservation for the dismantling operations, to be taken into account in future design modifications. The product also helps identify a trajectory allowing to dismantle an assembly.

The simulation and analysis tools of DMU Fitting Simulator 2 (FIT) address the needs of Product Design, Recycling, Serviceability & Maintainability departments. Moreover, DMU Fitting Simulator 2 (FIT) animation, simulation and video creation capabilities are very useful for Sales & Marketing and Training departments.

DMU Fitting Simulator 2 (FIT) can handle digital mock-ups of any size, making it suitable for all type of industries, and is entirely and identically available on Windows and UNIX.

Product Highlights

- ❑ Defines single object or groups of objects to be moved during the disassembly procedure
- ❑ Generates dis-assembly trajectory avoiding collisions and respecting angular



limitations

- ❑ Interactively simulates objects' trajectories with visual feedback
- ❑ Dynamically analyzes simulated trajectories in order to validate their feasibility
- ❑ Integrates with other DMU products for powerful combination of simulations
- ❑ Generates useful information on the space reservation in the assembly, allowing designers to modify the digital mock-up respecting maintenance feasibility
- ❑ Allows commands' automation through Visual Basic macro programming
- ❑ Provides sophisticated simulation tools to increase collaboration between all project members and generate compelling materials such as videos

Product Key Customers Benefits

Exploded assembly views...

DMU Fitting Simulator 2 provides users the ability to define exploded assembly views for better understanding of the structure of the

assembly to be disassembled, but also for documentation purposes. The coaxial technological constraints or the hierarchical product structure is used to define the exploded 3D view. Users may also explode parts along a specified plane or visualize different states of the exploded view, making it possible to explode only sub-assemblies, or several sub-assemblies as required.

Shuttle definition...

The moving objects (shuttles) can involve parts, sub-assemblies and tooling elements. A 3D Viewer is opened to display the parts that belong to the shuttle definition. The user has the ability to define angular displacement limitations and reference for shuttle motion. Multiple shuttles can be defined when maintenance procedures involve more than one part.

Objects' motion definition...

The user is assisted by a Co-pilot: icons pop up under the mouse to help the user understand possible actions. The definition of trajectories is done interactively frame-by-frame and trajectories can be easily edited. Parts motion is driven directly by a mouse, or by Spaceball/Spacemouse devices leading to more accurate 3D motion of the parts. Finally, the user takes advantage of manipulation assistance to guide him when assembling parts by automatic snapping on predefined positions.

Objects' trajectories simulation...

For optimum interpretation and precision simulation, users can tune the speed and loop options of the motion. The system offers a VCR style control (forward, backward, step forward, step backward, begin, end and pause) of the simulation motion. Animation performance are optimized using a dynamic management of Level of Details (LOD) during the motion.

Trajectory Analysis...

DMU Fitting Simulator 2 dynamically checks for collision and computes minimal distances to ensure the defined trajectories' accuracy. Users can select the 'Stop on Collision' option for an in-depth design review, and can report

violations excluding contacts. Sound informs the user that a clash was detected in the mockup: it is especially useful when the clash happens outside the scope of the screen (in case of very large data). The system also checks angular displacement limitations. Angular displacement limitations are important when the object to be disassembled contain liquids that must not be spilled. During the manipulation with the mouse, invalid positions due to collision or angular displacement are detected and rejected by the system.

Automatic Path Finding...

The user can define the starting and the ending points of the simulation, as well as some intermediate positions. Any resulting complex path can be simplified manually or automatically. The Path Finding time computation can be optimized by starting a new simulation from the results of a previous simulation.

Collaboration tools...

The user takes advantage of the system's publishing capability for reporting purposes. For instance, the content (objects, time and positions) of a trajectory's simulation can be reported. The Automatic Path Finder command can also generate a status report. Moreover, the user has the ability to replay simultaneous or sequential motions when the simulation involves several shuttles. Finally, the user can generate standard movie format (MPEG).

Space reservation...

The swept volume is stored and can be reused, for instance, in the clash analysis to check that the part can still be maintained all along the digital mockup evolution.

Combined simulations...

Multiple combined simulations are possible for advanced digital product synthesis when using this product in conjunction with other DMU products. For example, users can simulate and synchronize un-mounting procedures with a kinematics motion when both DMU Kinematics Simulator 2 and DMU Fitting Simulator 2 products are installed.

Automation...

Simulation replay can be imported/exported in VB script format. Moreover, most commands can be automated and take advantage of journaling capability. Finally, the system allows the user to launch the Automatic Path Finder command in batch mode.

ABOUT CATIA V5R18

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

plm.3ds.com/CATIA

