CATIA 3D Electrical Design

The complexity of large-scale electrical systems requires a process-specific solution in order to design faster and ensure quality. In addition, the use of physical prototypes creates certain drawbacks such as high costs, inflexible modifications, and the late recognition of design errors.

CATIA 3D Electrical Design delivers a process-specific solution for designing physical wire harnesses. This solution is driven by logical specifications and is integrated with harness manufacturing. By delivering a realistic simulation for 3D wire harness packaging in an integrated environment, this powerful solution reduces design time and increases the overall quality of large-scale electrical systems. It also enriches the design through realistic deformation of flexible harnesses by taking into account environmental conditions like gravity as well as the physical non-linear behavior of the harness and its protections.

Key capabilities

Create an extended range of electrical 3D components
You can create electrical 3D components such as mounting equipments, equipments, shells, connectors, back shell, etc., as well as wires, cables, harness supports and protections (tape, tube, etc.). You can also add electrical and mechanical behavior by defining connection points for electrical device reference to facilitate electrical design (connector connection point, cavity, cavity connection point, back shell connection point, bundle connection point, etc.).

Support catalog usage
CATIA 3D Electrical Design takes advantage of the V6 platform to efficiently store electrical objects within the database. Objects are classified within catalogs where the user can navigate freely or by query and the user can visualize content directly from the 3D Live portal.

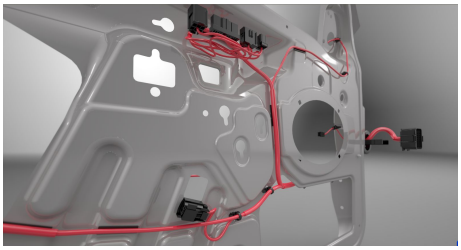
Design geometrical harnesses in context
CATIA 3D Electrical Design allows you to create round, rectangular or oval bundle segments routed to electrical devices, supports, or any mechanical part. Several routing modes are available to manage slack, imposed length or bend radius and Finite Element Modeling technology provides a realistic harness shape and behavior (taking protection covering, routed wires, and splices into account). Connectivity between bundles, segments, and electrical devices or support is ensured and can easily be checked and analyzed.

Customer benefits

- Facilitate collaborative PLM for complete product definition
- Enable collaboration between electrical and mechanical designers
- Simplify electrical reference product and part reuse
- Integrate design changes faster
- Design concurrently
- Decrease design and manufacturing costs
- Reduce the need for costly physical prototypes
- Enable seamless process integration between Electrical CAD and CATIA physical design
- Manufacture wire harnesses more efficiently
- Reuse design more frequently
- Define a wire harness product easily with harness geometry routed in several product structures

Define wire harnesses

With CATIA 3D Electrical Design you can import from ECAD systems (through CAA API's or XML data format) or create directly in 3D the wires/cable list within the harness. Fast and automated wire routing is based on the shortest path and separation criteria or on company rules thanks to the knowledge integration. Once routed, all information, including wire length, is available for manufacturing report or for export to ECAD.



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