CAT/TransCable Interface

Advanced Design Automation for Cable and Wire Harness Design

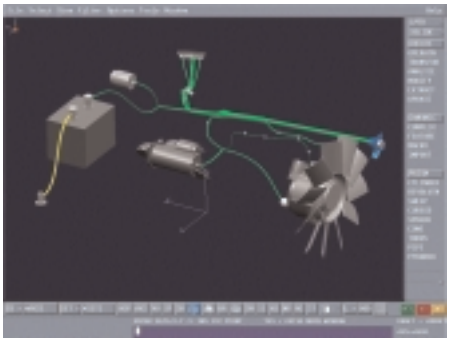
CAT/TransCableTM provides a tightly integrated bi-directional interface between TransCableTM, Mentor Graphic's Design Capture environment, and Dassault Systemes' CATIA Electrical Design Solutions (CATIA V4) environment. Together, these tools create a design environment that enables concurrent engineering between electrical and mechanical design teams.

Target Market
The content of electrical subsystems is exploding in system markets such as transportation (automobiles, trucks, trains), aerospace (planes, satellites), telecom (PBXs, routers), semiconductor equipment, and industrial machinery. The physical interconnection of these subsystems has become a critical design factor that affects system performance, time to market and life cycle costs.

Design Scenario
After a system has been partitioned, detailed electrical, mechanical, and software design may progress. Three-dimensional (3D) geometric models for electromechanical equipment are created in Dassault Systemes' Electrical Device and Support Modeling tool. These models are placed within the system structure for proper assembly of wire harness using Dassault Systemes' Electrical Wire Bundle Installation product.

TransCable is an intelligent schematic capture tool used to create system, logical, and wiring schematics at different levels of hierarchy. Electrical connectivity is consistently managed throughout the design. Electromechanical schematic symbols for wires, splices, cables, fuses, terminal strips, and connectors are correctly created both electrically and physically. Attributes uniquely define parts and enable downstream processes such as analysis and design rules checks.

Electromechanical Solutions
Together, Mentor Graphics and Dassault Systemes develop electromechanical solutions that bridge the gap between electrical and mechanical design domains. The integration between the products reduces manual errors, enables virtual prototyping of electromechanical systems, and helps identify potential design problems early in the design process.



Seamless Integration between CATIA V4 Electrical Design Solutions and TransCable
CAT/TransCable provides a direct interface that enables dynamic updating of design changes between TransCable and CATIA.

CATIA Electrical Design Solutions maps component references defined in TransCable with 3D models created in CATIA. Physical bundles may be automatically or interactively routed. Design constraints passed from TransCable to CATIA may be checked such as minimum bend radius. Wires, cables and splices are automatically assigned to routed bundles. Wire, cable, and bundle dimensions are automatically calculated in CATIA.

Wire and cable lengths may be exported from CATIA for dynamic updating within TransCable.

www.mentor.com/harness

Cross Probing and Highlighting
CAT/TransCable provides cross-probing and highlighting between CATIA Electrical Design Solutions and TransCable. Components modeled in 3D may be selected in CATIA and the associated component symbol in TransCable will be selected, highlighted, and centered in the Edit Window. Wires routed in 3D bundles may be selected in CATIA and the associated wires in TransCable will be selected, highlighted and centered in the Edit Window.

Manufacturing
The 3D bundles defined in the CATIA Electrical Wire Bundle Installation product are used to create a digital formboard mock-up in the CATIA Electrical Generative Formboard product.

TransCable may be used to generate Wire From-To and Electrical Parts Lists to user specified formats.

Highlights

- Passes electromechanical connectivity, attributes, and design constraints to CATIA
- Provides back-annotation from CATIA to TransCableTM
- Provides for dynamic updates from either environment
- Enables cross probing of components or wires to be selected in CATIA and highlighted in TransCable
- Improves productivity by enabling concurrent engineering between electrical and mechanical design teams
- Reduces costs by eliminating errors due to manual entry
- Shortens time to market by intelligently managing design changes
- Improves quality by automatically checking design constraints

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