

Capital Integrator

Rules-driven vehicle wiring synthesis



Capital Integrator is a powerful software tool that automates integration of vehicle sub-system logical connectivity data into full platform wiring designs. The product is part of the data-centric Capital Harness Systems software suite. Capital Integrator employs configurable rules to route signals through a vehicle topology and to synthesize the resulting wiring objects automatically. Available with an optional module to synthesize configuration-aware composite designs, Capital Integrator strongly promotes design re-use, efficient design change management and consistent application of intellectual property.

Key Features

The **Capital Integrator** product falls into the Capital Design family of Capital Harness Systems. Products in this family help engineers design the complex electrical systems typically found in automotive, aerospace and rail transportation platforms. By automatically synthesizing physical wiring objects from signals, Capital Integrator supports the **generative** (or **topology-based**) design paradigm. Key product features include:



- Seamless integration within Capital Harness Systems, providing a **data-centric environment**, easy access to and from other Capital tools, and a common look & feel across the toolset.
- Automatic synthesis of wiring objects (wires, splices, etc) using **configurable rules**, simplifying the task of subsystem integration, allowing real-time wiring architecture studies, and ensuring consistent application of intellectual property / engineering best practices.
- 2_D representation of vehicle topology, enabling simple design visualization
- Automatic and manual placement features, providing powerful device packaging capability.
- User-accessed design refinement functions, such as the ability to insert in-line connectors and move splice locations.

Capital Integrator – towards automated electrical system design

Optional software products are available that add further power to Capital Integrator. These optional products support situations with high configuration complexity or where automatic wire gauge sizing of full platform wiring is needed.



Composite Wiring Synthesis: Capital Integrator is able to manage the multiple wiring configurations typically found on a vehicle platform. An optional software module is available that automates wiring synthesis in a fully composite way, with all option & variant configurations managed as a single set. This capability is valuable for designs with significant configuration complexity, especially when managing design changes that impact multiple configurations.

Automatic Wire Sizing: optional software is available to accomplish automatic wire gauge sizing. This software is used in conjunction with Capital Stress Analyzer, a product within the Capital Analysis family.

Ground Design: optional software is available to support automatic placement of ground (earth) points and layout of ground wiring.

Diagram generation: optional software is available to provide automatic generation of wiring diagrams, both at the subsystem level and as an entire vehicle view. This software removes the need for tedious drawing of the diagrams needed to document the wiring designs synthesized using Capital Integrator.

Combining these add-on capabilities with wiring synthesis via rules application substantially automates the complex and error-prone task of vehicle wiring system design.

Capital Integrator – supplied with Capital Manager

Capital Integrator is supplied complete with the Capital Manager data management system that is at the heart of Capital Harness Systems. Capital Manager contains the data model that supports the individual tools and provides persistence services to the underlying RDBMS storage. In addition, four user applications are available from Capital Manager that are fully available from Capital Integrator: Capital Library, Capital Project, Capital Reporter and Capital User.



- **Capital Library:** this application manages the physical components used in wiring designs. Capital Library stores part numbers, component properties, supplier information, manages component relationships, etc.
- **Capital Project:** this application provides management of data that is common across a particular project, such as a car model. Items that can be managed from Capital Project include naming conventions, release gates, design effectivity and build list compatibility.
- **Capital Reporter:** this application provides powerful tabular reporting of data stored within the Capital Manager database. This easy-to-use application is supplied with pre-configured reports, and is also easily configurable to provide user-defined reports. Style sheets can be applied to change the appearance of reports.
- **Capital User:** this application provides access security, allowing users, user groups, roles and permissions to be defined and controlled.

**Mentor Graphics
Mentor House**
Edward Court
Altrincham,
Cheshire,
WA14 5GL
United Kingdom
Tel. No: 44-161-926-1600

**Corporate Headquarters
Mentor Graphics Corporation**
8005 SW Boeckman Road
Wilsonville
OR 97070-7777
Tel. No: 1 503-685-7000

U.S. Sales: 800 547 3000

**European Headquarters
Mentor Graphics**
Arnulfstrasse 201,
D-80634 Munich,
Germany
Tel. No: 49-89-57096-0

**Pacific Rim Headquarters
Mentor Graphics (Taiwan)**
Room 1603,
16F International Trade Building No.
333, Section 1,
Keelung Road,
Taipei, Taiwan, ROC
Tel. No: 886-2-87252000

**Japan Headquarters
Mentor Graphics Japan Co.Ltd**
Gotenyama Hills 7-35,
Kita-Shinagawa 4-chome,
Shinagawa-Ku, Tokyo 140
Tel. No: 81-3-5488-3030