

## Pro/ENGINEER® Routed Systems Designer

DESIGN COMPLEX SYSTEMS WITH CONFIDENCE

To succeed in today's markets, companies need to introduce products faster than the competition, at lower cost, and with higher quality. Pro/ENGINEER Routed Systems Designer helps achieve this goal by automating the cabling and piping design process, saving time, effort, and money.

When designing products that contain cabling or piping, it is absolutely essential to create high-quality diagrams that document and plan the schematic requirements. Pro/ENGINEER Routed Systems Designer (RSD) has been designed to contain the rich breadth of diagramming tools to satisfy the needs of many disciplines and industries, without forcing designers to compromise.

As part of the design process, mechanical designers will route cables and pipes within their 3D assembly using schematic designs as maps. Pro/ENGINEER RSD automates this step, extracting the schematic information and electronically driving the routed systems within any 3D MCAD system that accepts XML data. Pro/ENGINEER RSD is specifically optimized to utilize all of the rich capabilities in cable and pipe routing within a Pro/ENGINEER assembly. This compatibility not only speeds the 3D design significantly by removing the tedious, manual process of interpreting 2D schematic diagrams, but it also virtually eliminates errors by ensuring adherence to the logic defined in the schematics.

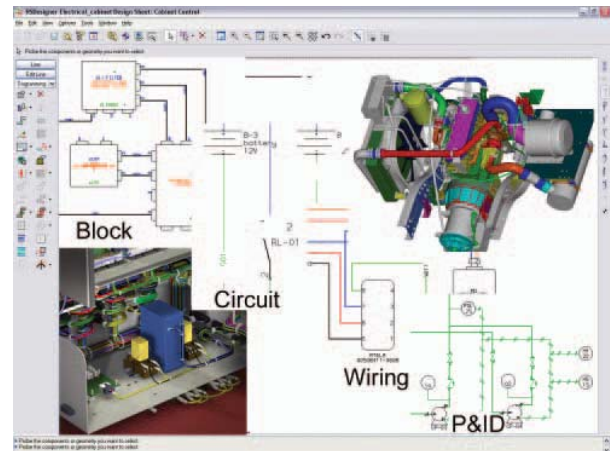
### Key Benefits

#### Reduce Time-to-Market

Pro/ENGINEER RSD provides the rich, multi-discipline tools design engineers need to create schematic designs quickly and easily. Pro/ENGINEER RSD then drives the 3D routing of cables, pipes, and wires within Pro/ENGINEER. This eliminates the manual, tedious process of recreating the 2D schematics in Pro/ENGINEER before creating the 3D assembly.

#### Reduce Total Product Cost

PTC offers a more comprehensive routed systems solution, consisting of Pro/ENGINEER Routed Systems Designer and Pro/ENGINEER Piping and Cabling Extension. This combination of tools enables the complete



Pro/ENGINEER Routed System Designer is a multi-discipline schematic solution that is capable of driving 3D design.

digital model to be defined, thus reducing the dependence on physical prototypes, and therefore significantly lowering product costs. Indirect costs can be reduced as well. Since all diagramming tools are provided in a single solution rather than multiple solutions, users won't need to learn multiple software tools, further reducing training costs. Additionally, Pro/ENGINEER RSD reduces maintenance costs and downtime because there is only a single solution to upgrade and learn.

#### Improve Product Quality

Pro/ENGINEER RSD enables the digital design to be completely defined, and the information can be transferred directly into Pro/ENGINEER to drive the 3D design. This eliminates the error-prone interpretation of 2D schematics by the mechanical engineer. In addition, Pro/ENGINEER RSD can automatically check the completed 3D routed assembly for exact compliance with the 2D schematics, saving the engineer hours of manual tedious checking and eliminating mistakes before production, leading to improved product quality and confidence.

#### Improve Information Exchange

Creating a single, comprehensive digital model makes the rich product information available to all teams. The combination of Pro/ENGINEER RSD with the cabling and piping applications within Pro/ENGINEER enables routed systems teams to completely define all aspects of the

# Pro/ENGINEER RSD

design in a rich digital model, without the need for interpretation or translation. Pro/ENGINEER RSD drives the 3D routing via XML, which eliminates translation errors and automatically ensures compliance with the 2D schematic design.

## Improve Product Customization

In order to meet customer demands for customized products, the design tools must be flexible, that is, open to quickly making changes and adaptable for multiple scenarios. The schematic capabilities within Pro/ENGINEER RSD deliver the flexibility engineers and designers need to easily adapt to ever-changing requirements.

## The Right Tools

No longer do schematic designers need to settle for their current method of “overstretching” office tools that were never intended for schematic design. Nor do mechanical designers have to face the frustration of interpreting 2D schematics, or manually checking the 3D routed systems for compliance. Pro/ENGINEER RSD, combined with Pro/ENGINEER Piping and Cabling Extension, offers the ‘no compromise’ solution for the design of routed systems.

## Rich Diagramming Solution Built On Proven Technology

Pro/ENGINEER RSD combines the best functionality from PTC’s proven diagramming solutions with PTC’s experience with major aerospace and automotive customers. The result: rich diagramming technology and the connection to drive routed systems within 3D MCAD solutions.

## Features and Specifications

### Diagram Types

- P&ID
- Block
- Wiring
- HVAC
- Functional
- Schematic
- Hydraulic
- Pneumatic

### Data Exchange

- Supported export formats : DWG, DXF, Medusa, XML
- Supported import formats: DWG, DXF, Medusa, XML

### Design Manipulation

- Windows® Explorer-style interface
- Context-sensitive, right mouse button pop-ups
- User property system
- Define any user property
- Multi-sheet viewer
- Fast navigation through multiple sheets
- Copy and paste between designs
- Update catalogs
- Merge design sheets

### Data Management

- Managed by Pro/INTRALINK®, Windchill PDMLink, and Windchill ProjectLink

## Flexible Catalog Management

- Windows® Explorer-style interface
- Central catalog provides a single source for company design libraries
- Free symbol library includes ASNI, CSA, and IEEE standards

## Properties

- Properties are fully user-definable and may be attached to: Folders, Sheet Sets, Sheets, Blocks, Fibers, Groups, Ports, Formats
- Property values may be: defaulted in the catalog, modified upon instancing, updated by selection from a data set, edited from a multi-selection, allocated automatically
- Graphical display of properties available on: Sheets, Formats, Blocks, Fibers, Groups, Ports

## Display Characteristics

- Any number of attributes
- Any sub-string of any attribute value
- Any fixed strings, delimiters
- Many text fonts
- Any layer, color
- Add to catalog or instances

## Fast, Configurable Reporting

- Report types: Properties, Inventory, Connection
- Reporting classes: Design, Catalogue, Block, Group, Fiber, Port
- Ascending or descending sorting
- Criteria:
  - Integer and real properties
  - String properties
  - List properties
  - Sheet properties
  - Type properties
- Report destination: Sheet, Dialog Box, File

## Java Read and Write API

### Language Support

- English, German, Japanese, French

### Specifications

- Microsoft Windows (XP Professional, XP Home, 2000)
- UNIX platforms (Solaris 8, 9, 10)

See [PTC.com](http://PTC.com) for specific OS levels and compilers.

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