

## IBM Rational Rhapsody Designer for Systems Engineers

### Highlights

- ***Allows engineers to track, analyze and communicate requirements changes quickly and easily.***
- ***Incorporates modeling with UML/SysML to help developers visualize complex requirements and maintain design consistency.***
- ***Facilitates reuse of model elements with an advanced model browser and centralized data dictionary.***
- ***Offers advanced simulation capabilities to help reduce system errors and optimize functionality.***
- ***Enables easy creation of comprehensive, customized documentation.***

In order to successfully design, develop, and deliver robust embedded devices, systems engineers must dramatically increase their productivity. IBM can help. IBM® Rational® Rhapsody® Designer for Systems Engineers enables you to adapt to changing customer requirements and to easily communicate design changes to all project stakeholders. The solution is founded on the belief that developers must be able to verify their designs as they evolve, to help ensure that customer requirements are always satisfied.

### **Specify requirements quickly and accurately**

Rational Rhapsody Designer for Systems Engineers is an integrated visual modeling environment for systems engineering projects. It employs the latest versions of the Systems Modeling Language (SysML) and the Unified Modeling Language (UML) 2.0, allowing you to quickly and accurately specify requirements, design structures, and behavioral aspects of the system.

The solution can also be used to visualize requirements traceability from the system model back to the requirements themselves. This way, if a requirement is changed, you can quickly see the impact of the requirement change on the overall system design.

### **Tracking model elements**

Rational Rhapsody Designer for Systems Engineers uses an advanced model browser and data dictionary to allow you to quickly sort, organize, and edit your models. Model elements available in the browser can be used in any number of diagrams or views of the system.

The browser tracks all references to model elements, ensuring that changes are propagated across all views of the model. Also, any SysML or UML diagram developed within the program can be supplemented with domain-specific graphics to maximize system design readability across a range of audiences.

## How it works

IBM Rational Rhapsody Designer for Systems Engineers includes an advanced simulation capability, so you can functionally test your design at any point in the development process to help ensure that it satisfies customer requirements. During functional simulation, behavioral state charts, activity diagrams, and sequence diagrams are animated, thereby highlighting the overall functionality of the system.

You can easily identify and eliminate errors and undesired behavior to help ensure an error-free system. You can further enhance the simulation process by adding customized, graphical panels to show engineering mock-ups of the system, a capability that helps simplify design reviews and customer walkthroughs.

You can add automated generation of customizable documentation directly from the system model and its repository. Designers can make any necessary changes to the model and, in one step, produce new project deliverable documentation with relevant changes in place.

## IBM Rational Rhapsody Designer for Systems Engineers features and benefits

Feature	Benefit
<ul style="list-style-type: none"><li>• SysML and UML model simulation and execution</li></ul>	<ul style="list-style-type: none"><li>• Helps verify that system designs are functionally correct and satisfy requirements</li><li>• Helps minimize costly re-engineering actions</li></ul>
<ul style="list-style-type: none"><li>• Integrated requirements and design environment with domain-specific modeling capabilities, including DoDAF, MODAF, UPDM</li></ul>	<ul style="list-style-type: none"><li>• Helps facilitate clear, formal and unambiguous communication of system design elements to all project stakeholders</li></ul>
<ul style="list-style-type: none"><li>• Full requirements traceability and analysis capabilities throughout a project lifecycle, including customizable, automatic documentation</li></ul>	<ul style="list-style-type: none"><li>• Allows teams to effectively manage requirements changes</li><li>• Allows teams to assess change impacts on design and architecture</li></ul>
<ul style="list-style-type: none"><li>• XML and IBM Rational Rose® import capabilities</li></ul>	<ul style="list-style-type: none"><li>• Enables integration of existing systems and reuse of code</li><li>• Potentially increase savings and boost productivity by enabling reuse of legacy systems, code, and models</li></ul>
<ul style="list-style-type: none"><li>• Customizable documentation generated automatically from models</li></ul>	<ul style="list-style-type: none"><li>• Helps reduce time to deliver consistent design artifacts</li></ul>

### Specification highlights

- SysML and UML visual modeling support for high-quality products
- Advanced graphics support with domain-specific modeling to enable flexible realization of complex designs
- Fully integrated requirements capture and traceability for accurate design and development
- Advanced browser with model organizer to help make complex models manageable
- DoDAF, MODAF, UPDM modeling support (with additional add-on), complying with design and development standards
- Automatic documentation generation to help accelerate production and ensure that documentation and design are synchronized with additional add-on
- Customizable static model checking to help ensure completeness and consistency throughout the development lifecycle
- Advanced functional simulation capabilities with graphical panels (with additional add-on) to easily identify and correct errors
- Visual differencing and merging to enhance parallel development.
- Legacy system and code integration using XML import/export and Rose Import features (with additional add-on)
- Configuration management interface capabilities (with additional add-on pack), to enable use of configuration management tools including Rational Team Concert™, Rational Clearcase® and Rational Synergy
- Favorites, hyperlinks and references help improve access to key information
- User-defined macros and helpers to extend your system with specific wizards and utilities
- Cross-platform design with IBM Rational Rhapsody Architect for Systems Engineers and IBM Rational Rhapsody Developer solutions using a common model repository
- Floating and dockable window support for engineer flexibility

### Minimum hardware requirements

#### Processor

- Intel® Pentium® 4 Processor, 3.0 GHz

#### Memory

- 512 MB RAM (Minimum), 2 GB RAM (Recommended)

### Minimum software requirements

#### Operating System

- Microsoft® Windows® Vista
- Microsoft Windows XP (SP1/SP2)
- Citrix 4.0 (hosted on Windows Server 2003)

### For more information

For more information about IBM Rational Rhapsody Designer for Systems Engineers, contact your IBM representative or IBM Business Partner, or visit:

[ibm.com/software/rational](http://ibm.com/software/rational)



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Software Group  
Route 100  
Somers, NY 10589  
U.S.A.

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