DO Qualification Kit Release Notes

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DO Qualification Kit Release Notes

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Contents

Summary by Version

This table provides quick access to what's new in each version. For clarification, see "Using Release Notes" on page 1.

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Latest Version V1.5 (R2011b)	Yes Details	No	Bug Reports Includes fixes
V1.4 (R2011a)	Yes Details	No	Bug Reports Includes fixes
V1.3.1 (R2010bSP1)	Yes Details	No	Bug Reports Includes fixes
V1.3 (R2010b)	Yes Details	No	Bug Reports Includes fixes
V1.2 (R2010a)	Yes Details	No	Bug Reports Includes fixes
V1.1.1 (R2009bSP1)	Yes Details	No	Bug Reports
V1.1 (R2009b+)	Yes Details	No	Bug Reports Includes fixes
V1.0 (R2009a+)	Yes Details	Not applicable	Bug Reports

Using Release Notes

Use release notes when upgrading to a newer version to learn about:

- New features

- Changes

- Potential impact on your existing files and practices

Review the release notes for other MathWorks® products required for this product (for example, MATLAB® or Simulink®). Determine if enhancements, bugs, or compatibility considerations in other products impact you.

If you are upgrading from a software version other than the most recent one, review the current release notes and all interim versions. For example, when you upgrade from V1.0 to V1.2, review the release notes for V1.1 and V1.2.

What Is in the Release Notes

New Features and Changes

- New functionality
- Changes to existing functionality

Version Compatibility Considerations

When a new feature or change introduces a reported incompatibility between versions, the **Compatibility Considerations** subsection explains the impact.

Compatibility issues reported after the product release appear under Bug Reports at the MathWorks Web site. Bug fixes can sometimes result in incompatibilities, so review the fixed bugs in Bug Reports for any compatibility impact.

Fixed Bugs and Known Problems

MathWorks offers a user-searchable Bug Reports database so you can view Bug Reports. The development team updates this database at release time and as more information becomes available. Bug Reports include provisions for any known workarounds or file replacements. Information is available for bugs existing in or fixed in Release 14SP2 or later. Information is not available for all bugs in earlier releases.

Access Bug Reports using your MathWorks Account.

Documentation on the MathWorks Web Site

Related documentation is available on `mathworks.com` for the latest release and for previous releases:

- Latest product documentation

- Archived documentation

Version 1.5 (R2011b) DO Qualification Kit Software

This table summarizes what's new in V1.5 (R2011b):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	No	Bug Reports Includes fixes

New features and changes introduced in this version are:

- "Support for New Versions of MathWorks Products" on page 4

- "Certification Artifacts Explorer Display Enhancements" on page 5

Note The prerelease software does not provide updated editions of the PDF and RTF qualification artifacts. However, you can access artifacts from the previous release.

Support for New Versions of MathWorks Products

The DO Qualification Kit product includes documents, templates, test cases, and test procedures. You can use these artifacts when you use the following MathWorks products and capabilities in projects involving the DO-178B and related standards:

- Simulink® Verification and Validation™ Version 3.2 (R2011b): DO-178B checks and model coverage

- Simulink® Report Generator™ Version 3.11 (R2011b): System Design Description report

- SystemTest™ Version 2.6.2 (R2011b): Limit Check element

- Polyspace® Client™ for C/C++, Polyspace® Server™ for C/C++ Version 8.2 (R2011b)

For details, see "DO Qualification Kit Components" in the DO Qualification Kit documentation.

Certification Artifacts Explorer Display Enhancements

The Certification Artifacts Explorer dialog box has been enhanced in the following ways to support simpler and more flexible viewing of artifacts:

- The display pane previously located on the right-hand side of the dialog box has been removed. Qualification artifacts now always open and display in a separate window.

- Certification package properties, formerly displayed in the right-hand pane, now are accessible by right-clicking a package and selecting **Properties**.

- Folder and file information now is dynamically displayed in the Certification Artifacts Explorer status bar.

Version 1.4 (R2011a) DO Qualification Kit Software

This table summarizes what's new in V1.4 (R2011a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	No	Bug Reports Includes fixes

New features and changes introduced in this version are:

- "Traceability Matrix Generation" on page 6
- "Support for New Versions of MathWorks Products" on page 6

Traceability Matrix Generation

On Windows® systems, R2011a allows you to generate a *traceability matrix* for your model. For a given model, the generated traceability matrix can provide information about:

- Model objects that are traceable between the model and generated code, such as Simulink blocks, Stateflow® objects, and MATLAB functions.

- Model objects that are untraceable between the model and generated code, such as eliminated and virtual blocks.

- Requirements documents that you link to model objects using the Simulink Verification and Validation Requirements Management Interface (RMI).

Generate the traceability matrix using either the do178b.ExportTraceReport function from the MATLAB Command Window or the **Generate Traceability Matrix** button in the Embedded Coder™ generated HTML code generation report for your model. For more information, see "Generating a Traceability Matrix" in the DO Qualification Kit documentation.

Support for New Versions of MathWorks Products

The DO Qualification Kit product includes documents, templates, test cases, and test procedures. You can use these artifacts when you use the following

MathWorks products and capabilities in projects involving the DO-178B and related standards:

- Simulink Verification and Validation Version 3.1 (R2011a): DO-178B checks and model coverage

- Simulink Report Generator Version 3.10 (R2011a): System Design Description report

- SystemTest Version 2.6.1 (R2011a): Limit Check element

- Polyspace Client for C/C++, Polyspace Server for C/C++ Version 8.1 (R2011a)

For details, see "DO Qualification Kit Components" in the DO Qualification Kit documentation.

Version 1.3.1 (R2010bSP1) DO Qualification Kit Software

This table summarizes what's new in V1.3.1 (R2010bSP1):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	No	Bug Reports

New features and changes introduced in this version are:

Using Version 1.3.1 of the DO Qualification Kit Product

The DO Qualification Kit version 1.3.1 (R2010bSP1) includes documents, templates, test cases, and test procedures that have not changed between R2010b and R2010bSP1. You can use these artifacts when you use the following MathWorks products and capabilities in projects involving the DO-178B and related standards:

- Simulink Verification and Validation Version 3.0.1 (R2010bSP1): DO-178B checks and model coverage

- Simulink Report Generator Version 3.9 (R2010b)[1]: System Design Description report

- SystemTest Version 2.6 (R2010b)[2]: Limit Check element

- Polyspace Client for C/C++, Polyspace Server for C/C++ Version 8.0 (R2010b)[3]

When you customize the artifacts, update the revision history and version information as follows:

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1. You can install version 3.9 of the Simulink® Report Generator™ product from the R2010bSP1 DVD.

2. You can install version 2.6 of the SystemTest™ product from the R2010bSP1 DVD.

3. Version 8.0 of the Polyspace® products are not part of R2010bSP1. Install the Polyspace® products using the R2010b DVD.

- Simulink Verification and Validation artifacts — Add the following new line to the revision history:

  ```
  March 2011    Online only     Rereleased for Version 1.3.1 (For Release 2010bSP1)
  ```

- Simulink Report Generator artifacts

  - Add the following new line to the revision history:

    ```
    March 2011    Online only     Rereleased for Version 1.3.1 (For Release 2010b)
    ```

  - Change `Version 1.3 (For Release 2010b)` to `Version 1.3.1 (For Release 2010b)` within the text of the following artifacts:

    · DO Qualification Kit: Simulink Report Generator Tool Qualification Plan

    · DO Qualification Kit: Simulink Report Generator Tool Operational Requirements

    · DO Qualification Kit: Simulink Report Generator Test Cases, Procedures, and Results

- SystemTest artifacts

  - Add the following new line to the revision history:

    ```
    March 2011    Online only     Rereleased for Version 1.3.1 (For Release 2010b)
    ```

  - Change `Version 1.3 (For Release 2010b)` to `Version 1.3.1 (For Release 2010b)` within the text of the following artifacts:

    · DO Qualification Kit: SystemTest Tool Qualification Plan

    · DO Qualification Kit: SystemTest Tool Operational Requirements

    · DO Qualification Kit: SystemTest Test Cases, Procedures, and Results

- Polyspace Client/Server for C/C++ artifacts

  - Add the following new line to the revision history:

    ```
    March 2011    Online only     Rereleased for Version 1.3.1 (For Release 2010b)
    ```

  - Change `Version 1.3 (For Release 2010b)` to `Version 1.3.1 (For Release 2010b)` within the text of the following artifacts:

- DO Qualification Kit: Polyspace Client/Server for C/C++ Tool Qualification Plan
- DO Qualification Kit: Polyspace Client/Server for C/C++ Theoretical Foundation
- DO Qualification Kit: Polyspace Client/Server for C/C++ Tool Operational Requirements
- DO Qualification Kit: Polyspace Client/Server for C/C++ Test Cases, Procedures, and Results

Version 1.3 (R2010b) DO Qualification Kit Software

This table summarizes what's new in V1.3 (R2010b):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	No	Bug Reports Includes fixes

New features and changes introduced in this version are:

- "Simulink® Report Generator Qualification Support for System Design Description Report" on page 11

- "Artifacts Explorer for Accessing and Managing Qualification Materials" on page 12

- "Model-Based Design for DO-178B Workflow Document" on page 12

- "Support for New Versions of MathWorks Products" on page 12

- "DO-254 Support" on page 13

Simulink Report Generator Qualification Support for System Design Description Report

The DO Qualification Kit product now supports using the Simulink Report Generator System Design Description report in projects involving the DO-178B and related standards.

The Simulink Report Generator product includes the capability to generate a System Design Description (SDD) report for your Simulink model. The report provides detailed information about the system design represented by a model. You can use the System Design Description to

- Review a system design without having the model open

- Generate detailed descriptions of the design

- Assess compliance with design requirements

- Archive the system design in a format independent of the modeling environment

For more information, see *DO Qualification Kit: Simulink Report Generator Tool Operational Requirements* in the DO Qualification Kit documentation.

Artifacts Explorer for Accessing and Managing Qualification Materials

The qualification materials that are part of the DO Qualification Kit product are in many different locations. Now you can use the Certification Artifacts Explorer to access and manage the qualification materials. Using the Certification Artifacts Explorer, you can:

- Browse the qualification materials that are part of the DO Qualification Kit product.
- Access qualification artifacts for editing.

For details, see "Accessing and Managing Qualification Artifacts" in the DO Qualification Kit documentation. For limitations that apply, see "Limitations of the Certification Artifacts Explorer" in the DO Qualification Kit documentation.

Model-Based Design for DO-178B Workflow Document

The DO-178B software life cycle consists of objectives that must be met for each of the life cycle stages. In Appendix A of DO-178B, these objectives are summarized in tables. The DO Qualification Kit product now summarizes those tables and provides recommendations on meeting the objectives using a Model-Based Design process.

For details, see *DO Qualification Kit Model-Based Design Workflow for DO-178B* in the DO Qualification Kit documentation.

Support for New Versions of MathWorks Products

The DO Qualification Kit product includes documents, templates, test cases, and test procedures. You can use these artifacts when you use the following

MathWorks products and capabilities in projects involving the DO-178B and related standards:

- Simulink Verification and Validation Version 3.0 (R2010b): DO-178B checks and model coverage

- Simulink Report Generator Version 3.9 (R2010b): System Design Description report

- SystemTest Version 2.6 (R2010b): Limit Check element

- Polyspace Client for C/C++, Polyspace Server for C/C++ Version 8.0 (R2010b)

For details, see "DO Qualification Kit Components" in the DO Qualification Kit documentation.

DO-254 Support

You can use the DO Qualification Kit product to assist in qualifying verification tools for projects that follow DO-254. For details, see "Can You Apply the DO Qualification Kit Product to DO-254?" in the DO Qualification Kit documentation.

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Version 1.2 (R2010a) DO Qualification Kit Software

This table summarizes what's new in V1.2 (R2010a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	No	Bug Reports Includes fixes

New features and changes introduced in this version are:

Support for New Versions of MathWorks Products

The DO Qualification Kit product includes documents, templates, test cases, and test procedures. You can use these artifacts when you use the following MathWorks products and capabilities in projects involving the DO-178B and related standards:

- Simulink Verification and Validation Version 2.7 (R2010a): DO-178B checks and model coverage

- SystemTest Version 2.5 (R2010a): Limit Check element

- Polyspace Client for C/C++, Polyspace Server for C/C++ Version 7.2 (R2010a)

For details, see "DO Qualification Kit Components" in the DO Qualification Kit documentation.

Version 1.1.1 (R2009bSP1) DO Qualification Kit Software

This table summarizes what's new in V1.1.1 (R2009bSP1):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	No	Bug Reports

New features and changes introduced in this version are:

Using Version 1.1.1 of the DO Qualification Kit Product

The DO Qualification Kit version 1.1.1 (R2009bSP1) includes documents, templates, test cases, and test procedures that have not changed between R2009b and R2009bSP1. You can use these artifacts when you use the following MathWorks products and capabilities in projects involving the DO-178B and related standards:

- Simulink Verification and Validation Version 2.6.1 (R2009bSP1): DO-178B checks and model coverage

- SystemTest Version 2.4 (R2009b)[4]: Limit Check element

- Polyspace Client for C/C++, Polyspace Server for C/C++ Version 7.1 (R2009b)[5]

When you customize the artifacts, update the revision history and version information as follows:

- Simulink Verification and Validation artifacts — Add the following new line to the revision history:

```
April 2010    Online only    Rereleased for Version 1.1.1 (For Release 2009bSP1)
```

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4. You can install version 2.4 of the SystemTest™ product from the R2009bSP1 DVD.

5. Version 7.1 of the Polyspace® products are not part of R2009bSP1. Install the Polyspace® products using the R2009b DVD.

- SystemTest artifacts

  - Add the following new line to the revision history:

    ```
    April 2010   Online only    Rereleased for Version 1.1.1 (For Release 2009b)
    ```

  - Change `Version 1.1 (For Release 2009b)` to `Version 1.1.1 (For Release 2009b)` within the text of the following artifacts:

    · DO Qualification Kit: SystemTest Tool Qualification Plan

    · DO Qualification Kit: SystemTest Tool Operational Requirements

    · DO Qualification Kit: SystemTest Test Cases, Procedures, and Results

- Polyspace Client/Server for C/C++ artifacts

  - Add the following new line to the revision history:

    ```
    April 2010   Online only    Rereleased for Version 1.1.1 (For Release 2009b)
    ```

  - Change `Version 1.1 (For Release 2009b)` to `Version 1.1.1 (For Release 2009b)` within the text of the following artifacts:

    · DO Qualification Kit: Polyspace Client/Server for C/C++ Tool Qualification Plan

    · DO Qualification Kit: Polyspace Client/Server for C/C++ Theoretical Foundation

    · DO Qualification Kit: Polyspace Client/Server for C/C++ Tool Operational Requirements

    · DO Qualification Kit: Polyspace Client/Server for C/C++ Test Cases, Procedures, and Results

Version 1.1 (R2009b+) DO Qualification Kit Software

This table summarizes what's new in V1.1 (R2009b+):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	No	Bug Reports Includes fixes

New features and changes introduced in this version are:

- "Support for New Versions of MathWorks Products" on page 17
- "Model Coverage Support" on page 17

Support for New Versions of MathWorks Products

The DO Qualification Kit product includes documents, templates, test cases, and test procedures. You can use these artifacts when you use the following MathWorks products and capabilities in projects involving the DO-178B and related standards:

- Simulink Verification and Validation Version 2.6 (R2009b): DO-178B checks and model coverage
- SystemTest Version 2.4 (R2009b): Limit Check element
- Polyspace Client for C/C++, Polyspace Server for C/C++ Version 7.1 (R2009b)

For details, see "DO Qualification Kit Components" in the DO Qualification Kit documentation.

Model Coverage Support

The DO Qualification Kit software includes documents, templates, test cases, and test procedures. You can use these artifacts and tests when you use Simulink Verification and Validation model coverage in projects involving the DO-178B and related standards.

By qualifying the model coverage capability of the Simulink Verification and Validation product, you can claim credit for demonstrating completeness and correctness of the test cases that Simulink® Design Verifier™ generates. Use the model coverage capability instead of reviewing the Simulink Design Verifier report. You can demonstrate completeness and correctness by running the generated test cases against the model, measuring the model coverage, and reviewing the model coverage report. You can run the test cases on the executable object code and compare the actual results to the simulation results. The model coverage capability does not assess the correctness of the simulation results, only the test case coverage of the model. Therefore, you must verify that the results from the model are correct.

For details, see "DO Qualification Kit Components" in the DO Qualification Kit documentation.

Version 1.0 (R2009a+) DO Qualification Kit Software

This table summarizes what's new in V1.0 (R2009a+):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems
Yes Details below	Not applicable	Bug Reports

Version 1.0 of the DO Qualification Kit product includes documents, templates, test cases, and test procedures. You can use these artifacts when you use the following versions of MathWorks products and capabilities in projects involving the DO-178B and related standards:

- Simulink Verification and Validation Version 2.5 (R2009a): DO-178B checks

- SystemTest Version 2.3 (R2009a): Limit Check element

- Polyspace Client for C/C++, Polyspace Server for C/C++ Version 6.1 (R2009a)

For more information, see:

- The *DO Qualification Kit User's Guide*

- The DO Qualification Kit product page on www.mathworks.com.

Compatibility Summary for DO Qualification Kit Software

This table summarizes new features and changes that might cause incompatibilities when you upgrade from an earlier version, or when you use files on multiple versions. Details are provided in the description of the new feature or change.

Version (Release)	New Features and Changes with Version Compatibility Impact
Latest Version V1.5 (R2011b)	None
V1.4 (R2011a)	None
V1.3.1 (R2010bSP1)	None
V1.3 (R2010b)	None
V1.2 (R2010a)	None
V1.1.1 (R2009bSP1)	None
V1.1 (R2009b+)	None
V1.0 (R2009a+)	Not applicable