Embedded Target for OSEK/VDX® Release Notes

Contents

Summary by Version

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

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Latest Version V1.1.4 (R2006a)	No	No	No bug fixes	Printable Release Notes: PDF V1.1.4 product documentation
V1.1.3 (R14SP3)	No	No	No bug fixes	No
V1.1.2 (R14SP2)	No	No	No bug fixes	No
V1.1.1 (R14SP1)	No	No	No bug fixes	No
V1.1 (R14)	Yes Details	No	See "Known Software and Documentation Problems" on page 11	No

About Release Notes

Use release notes when upgrading to a newer version to learn about new features and changes, and the potential impact on your existing files and practices. Release notes are also beneficial if you use or support multiple versions.

If you are not upgrading from the most recent previous version, review release notes for all interim versions, not just for the version you are installing. For example, when upgrading from V1.0 to V1.2, review the New Features and Changes, Version Compatibility Considerations, and Bug Reports for V1.1 and V1.2.

New Features and Changes

These include

- New functionality

- Changes to existing functionality

- Changes to system requirements (complete system requirements for the current version are at the MathWorks Web site)

- Any version compatibility considerations associated with each new feature or change

Version Compatibility Considerations

When a new feature or change introduces a known incompatibility between versions, its description includes a **Compatibility Considerations** subsection that details the impact. For a list of all new features and changes that have compatibility impact, see the "Compatibility Summary for Embedded Target for OSEK/VDX" on page 13.

Compatibility issues that become known after the product has been released are added to Bug Reports at the MathWorks Web site. Because bug fixes can sometimes result in incompatibilities, also review fixed bugs in Bug Reports for any compatibility impact.

Fixed Bugs and Known Problems

MathWorks Bug Reports is a user-searchable database of known problems, workarounds, and fixes. The MathWorks updates the Bug Reports database as new problems and resolutions become known, so check it as needed for the latest information.

Access Bug Reports at the MathWorks Web site using your MathWorks Account. If you are not logged in to your MathWorks Account when you link to Bug Reports, you are prompted to log in or create an account. You then can view bug fixes and known problems for R14SP2 and more recent releases.

The Bug Reports database was introduced for R14SP2 and does not include information for prior releases. You can access a list of bug fixes made in prior versions via the links in the summary table.

Related Documentation at Web Site

Printable Release Notes (PDF). You can print release notes from the PDF version, located at the MathWorks Web site. The PDF version does not support links to other documents or to the Web site, such as to Bug Reports. Use the browser-based version of release notes for access to all information.

Product Documentation. At the MathWorks Web site, you can access complete product documentation for the current version and some previous versions, as noted in the summary table.

Version 1.1.4 (R2006a) Embedded Target for OSEK/VDX

This table summarizes what's new in Version 1.1.4 (R2006a):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
No	No	No bug fixes	Printable Release Notes: PDF V1.1.4 product documentation

Version 1.1.3 (R14SP3) Embedded Target for OSEK/VDX

This table summarizes what's new in Version 1.1.3 (R14SP3):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
No	No	No bug fixes	No

Version 1.1.2 (R14SP2) Embedded Target for OSEK/VDX

This table summarizes what's new in Version 1.1.2 (R14SP2):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
No	No	No bug fixes	No

Version 1.1.1 (R14SP1) Embedded Target for OSEK/VDX

This table summarizes what's new in Version 1.1.1 (R14SP1):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
No	No	No bug fixes	No

Version 1.1 (R14) Embedded Target for OSEK/VDX

This table summarizes what's new in Version 1.1 (R14):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	See "Known Software and Documentation Problems" on page 11	No

New features and changes introduced in this version are

- "New Target Options User Interface" on page 8

- "Appearance of Target Options in the Configuration Parameters Dialog" on page 9

- "Protected RT and Unprotected RT Blocks" on page 11

- "Support for Real-Time Workshop Embedded Coder Rate Grouping" on page 11

- "Known Software and Documentation Problems" on page 11

New Target Options User Interface

You can now view and edit code generation options for the Embedded Target for OSEK/VDX via either the Configuration Parameters dialog, or the Simulink Model Explorer. The Configuration Parameters dialog provides the quickest route to your model's active configuration set. The Model Explorer provides centralized access to all elements of a Simulink model or Stateflow chart, including all configuration sets associated with your model.

Before you work specifically with the Embedded Target for OSEK/VDX in the Configuration Parameters dialog or the Model Explorer, you should become acquainted with configuration sets, the Model Explorer, the Configuration Parameters dialog, and the revised layout of general Real-Time Workshop options. To do so, see

- The Simulink documentation for information on how to use configuration sets, the Configuration Parameters dialog, and the Model Explorer.

- The Real-Time Workshop documentation for information on the general Real-Time Workshop code generation options.

- The Real-Time Workshop Embedded Coder documentation for information on code generation options that are specific to Real-Time Workshop Embedded Coder.

Only the layout and appearance of target options for the Embedded Target for OSEK/VDX have changed in this release. Functionally, these options are the same as in the previous release; see the Embedded Target for OSEK/VDX documentation for a detailed description of the target options.

These release notes use the Configuration Parameters dialog to illustrate Embedded Target for OSEK/VDX target options.

Appearance of Target Options in the Configuration Parameters Dialog

In previous releases, target options were displayed in the Simulation Parameters dialog. Target options, organized into functional groups, were displayed under control of the Category menu in the Real-Time Workshop pane.

In this release, the Configuration Parameters dialog of target options preserves the previous organization of options into categories. However, the Category menu has been replaced by a list selection mechanism. Each category of options in the left pane of the Configuration Parameters corresponds to a category in the old Simulation Parameters dialog.

The figures below show the Embedded Target for OSEK/VDX (OSEKWorks target) options as displayed in the Configuration Parameters dialog view.
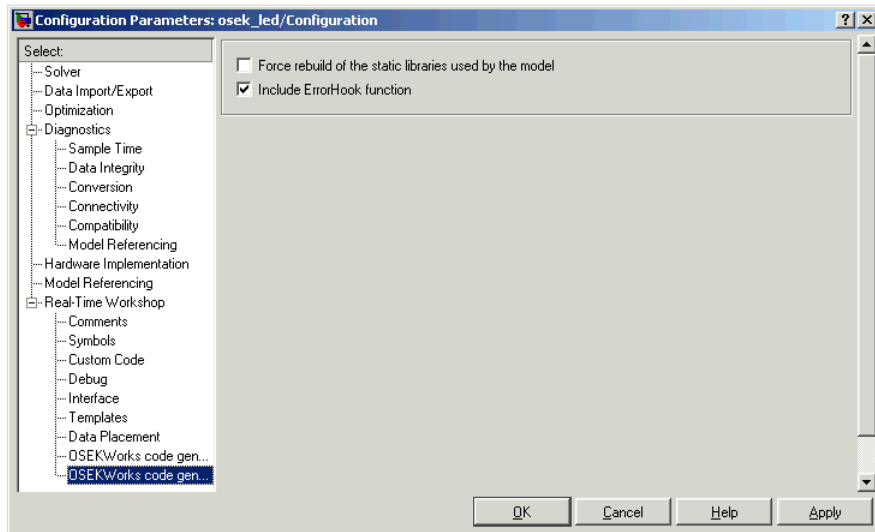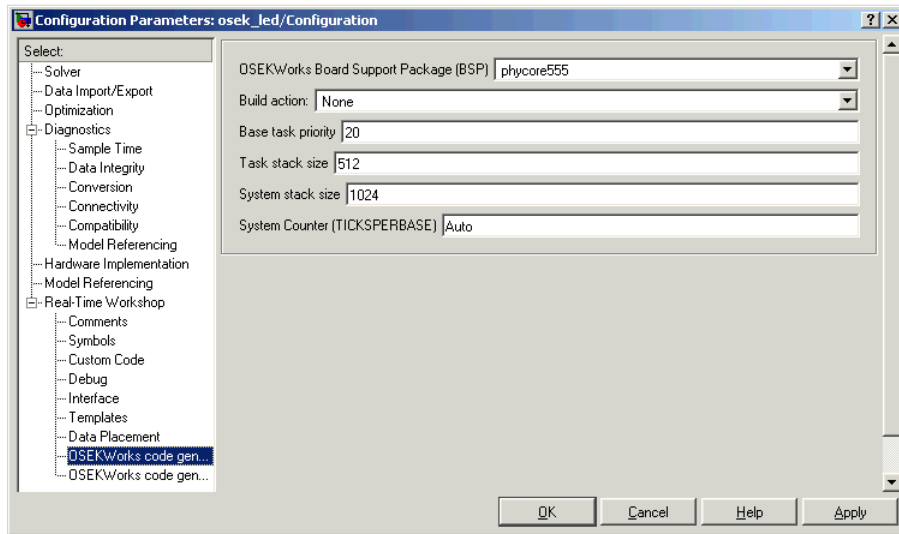
Protected RT and Unprotected RT Blocks

The OSEK Async Rate Transition and Unprotected OSEK Async Rate Transition blocks have been replaced with the blocks Protected RT and Unprotected RT, which are based on the Rate Transition Block in the Simulink Signal Attributes library.

Protected RT	Ensures data integrity for data transfers in multirate systems
Unprotected RT	Ensures that data transfers within a multirate system are deterministic

Note Although OSEK Async Rate Transition and Unprotected OSEK Async Rate Transition blocks are now obsolete, they are included in this release for compatibility with older models. For new models, use the Protected RT and Unprotected RT blocks.

Support for Real-Time Workshop Embedded Coder Rate Grouping

Embedded Target for OSEK/VDX now supports rate grouping of generated multirate code. This feature improves efficiency and readability of the generated code. OSEK tasks directly call the rate-grouped function as `model_steptid()` instead of `model_step(tid)`, where `tid` is the numeric task ID for the rate.

The code generator does not generate a backwards compatible function of the form `model_step(tid)`.

Known Software and Documentation Problems

This section documents known software and documentation problems in Version 1.1.

Model Referencing Not Supported

This release of the Embedded Target for OSEK/VDX does not support the new Simulink model referencing feature.

Make Error When Compiling Large Number of Files

A spurious make utility error occasionally occurs when executing a large number of target rules, such as building object libraries that contain over a hundred object files. You can work around this problem as follows:

1 Deselect the **Force Rebuild** option in the OSEKWorks or ProOSEK code generation options category of the Real-Time Workshop pane.

2 Execute the make process several times, noting that the same error does not recur in subsequent builds. You can do this either by clicking the **Build** button in the Real-Time Workshop pane, or by executing the `model.bat` file manually.

Problems with Compiler Optimizations

In some very rare instances, due to compiler defects, compiler optimizations applied to Embedded Target for OSEK/VDX generated code may cause the executable program to produce incorrect results, even though the code itself is correct. To work around such problems, first refer to your compiler's documentation for information on how to lower the optimization level of the compiler or turn off optimizations. Then, having found the optimization switches required, you can edit the options directly into the template makefile for your OSEK implementation (`osekworks.tmf` or `proosek.tmf`).

Set Alarm Block Limitation

In the current release, the output of the Set Alarm block can be connected only to an Activate Task block. The Set Alarm block activates the OSEK Task associated with the Activate Task block.

Compatibility Summary for Embedded Target for OSEK/VDX

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 V1.1.4 (R2006a)	None
V1.1.3 (R14SP3)	None
V1.1.2 (R14SP2)	None
V1.1.1 (R14SP1)	None
V1.1 (R14)	None