Embedded Target for OSEK/VDX Release Notes

These Release Notes discuss the following topics as they pertain to the latest release of the Embedded Target for OSEK/VDX®.

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New Features

This section introduces the new features and enhancements added in the Embedded Target for OSEK/VDX 1.1 (Release 14).

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 6.0 Release Notes for information on how to use configuration sets, the **Configuration Parameters** dialog, and the Model Explorer.
- The Real-Time Workshop 6.0 Release Notes for information on revisions and additions to the general Real-Time Workshop code generation options.
- The Real-Time Workshop Embedded Coder 4.0 Release Notes for information on revisions and additions to the general Real-Time Workshop Embedded Coder code generation options.

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.
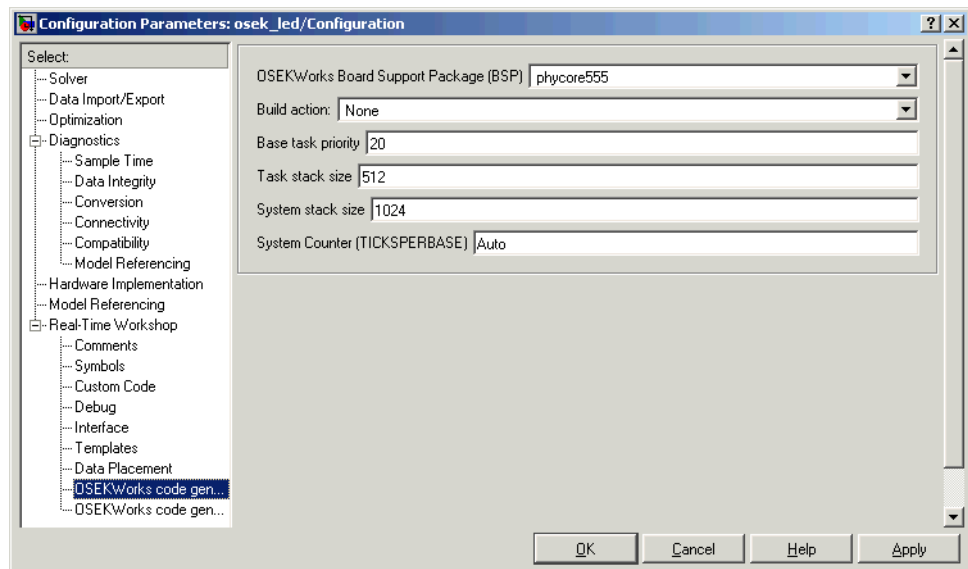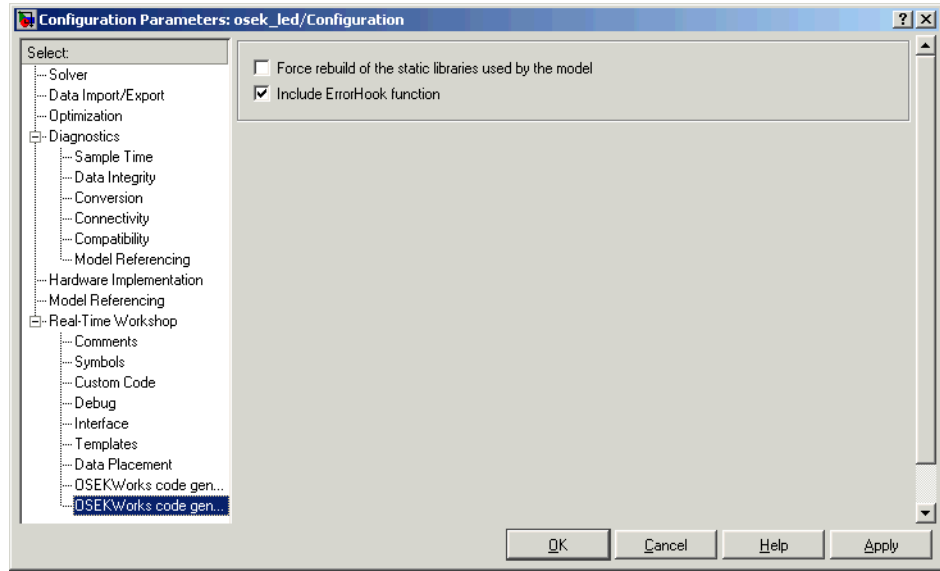
Protected RT and Unprotected RT Blocks

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*_step*tid*() 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.