Embedded IDE Link™ MU Release Notes

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Embedded IDE Link™ MU 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	Related Documentation at Web Site
Latest Version V1.2 (R2009a)	Yes Details	Yes. "Compatibility Summary for Embedded IDE Link MU Software" on page 15	Bug Reports	Printable Release Notes: PDF Current product documentation
V1.1 (R2008b)	Yes Details	Yes. "Compatibility Summary for Embedded IDE Link MU Software" on page 15	Bug Reports	Printable Release Notes: PDF
V1.0.1 (R2008a)	Yes Details	No	Bug Reports	No
V1.0 (R2007b+)	Yes Details	No	Bug Reports	No

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®) for enhancements, bugs, and compatibility considerations that also might impact you.

If you are upgrading from a software version other than the most recent one, review the 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 release notes for V1.1 and V1.2.

What's 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 is released appear under Bug Reports at the MathWorks Web site. Bug fixes can sometimes result in incompatibilities, so you should also review the fixed bugs in Bug Reports for any compatibility impact.

Fixed Bugs and Known Problems

The 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. This includes 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.

Version 1.2 (R2009a) Embedded IDE Link MU

This table summarizes what's new in V1.2 (R2009a):

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Latest Version V1.2 (R2009a)	Yes Details below	Yes. "Compatibility Summary for Embedded IDE Link MU Software" on page 15	Bug Reports	Printable Release Notes: PDF Current product documentation

Features introduced in this version are described here:

- "Ability to Replace Any Generated File in a Project with a Custom File" on page 3
- "Source File Replacement Diagnostic Option" on page 4
- "New Fixed-Point Fuel System Demo with PIL Verification" on page 4
- "PIL Block Behavior with Goto and From Blocks" on page 4
- "Functions and Arguments Being Removed" on page 4

Ability to Replace Any Generated File in a Project with a Custom File

When you generate a project, you can replace any generated file with another file that you provide. You can specify a custom file with the same name as a generated file in the **Board custom code** options in the Target Preferences block. When you generate code, the build process replaces the generated file with your custom file. For more information about replacing files, refer to Target Preferences in the Embedded IDE Link™ MU documentation in the online Help system.

Source File Replacement Diagnostic Option

To support the custom file replacement capability, a new option in the Embedded IDE Link MU configuration parameters, **Source file replacement**, lets you control the messages you see when you replace a generated file with another custom file.

New Fixed-Point Fuel System Demo with PIL Verification

This application demo shows how to use Processor-in-the-Loop (PIL) testing to verify object code running in non-real time on processors supported by the software. The example model demonstrates a fault-tolerant fuel control system using Simulink and Stateflow. Access the demo Verifying the Fixed-Point Fuel Control System in the Embedded IDE Link MU Control Applications demos on the **Demos** tab in the online Help.

PIL Block Behavior with Goto and From Blocks

Currently, it is possible but not recommended to use Goto and From blocks for I/O data that crosses the boundary of the PIL block component. For nonatomic subsystems, the right-click PIL build transforms boundary-crossing Goto blocks into outports and From blocks into inports. The resulting PIL block has extra I/O ports and you must rework the model to connect the PIL block. Starting in the next release, you will see an error if your PIL component includes any Goto or From blocks that cross the boundary of the PIL component. For more information on PIL support, refer to"PIL Feature Support and Limitations" in the Real-Time Workshop® Embedded Coder™ documentation.

Functions and Arguments Being Removed

The following table lists functions and arguments that will be removed from the product in a future version and not replaced.

Function or Argument Name	What Happens Now When You Use the Function or Argument	Use This Instead
close(,'text')	Errors	None

Function or Argument Name	What Happens Now When You Use the Function or Argument	Use This Instead
`isvisible`	Errors	None
`new( ,'text')`	Errors	None
`open( ,'text')`	Errors	None
`save( ,'text')`	Errors	None
`visible`	Errors	None

Version 1.1 (R2008b) Embedded IDE Link MU

This table summarizes what's new in V1.1 (R2008b):

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Version V1.1 (R2008b)	Yes Details below	Yes. "Compatibility Summary for Embedded IDE Link MU Software" on page 15	Bug Reports	Printable Release Notes: PDF Current product documentation

Features introduced in this version are described here:

- "Real-Time Execution Profiling Extended to Atomic Subsystems" on page 6
- "Support for Freescale MPC8641 Microprocessors" on page 7
- "Interrupt-Driven Scheduling for MPC8641 and Selected MPC74xx Microprocessors" on page 7
- "Functions, Properties, and Arguments Being Removed" on page 8

Real-Time Execution Profiling Extended to Atomic Subsystems

If your models use atomic subsystems, you can use the real-time execution profiling feature to investigate how your subsystems perform when you execute your program on your processor. A new option on the Embedded IDE Link MU pane in Configuration Parameters, **Profile by**, lets you select whether to profile by task or by atomic subsystem. The following figure shows the new option:
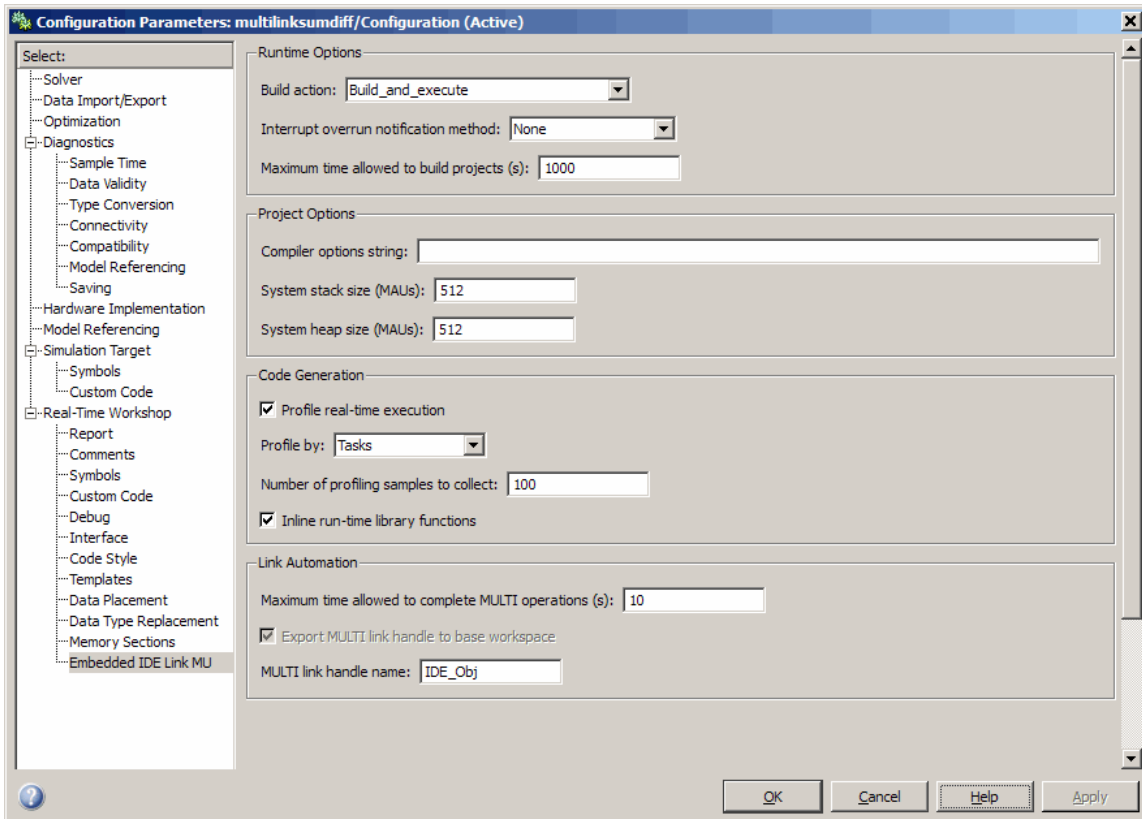
For more information, refer to "Profiling Execution By Subsystems".

Support for Freescale MPC8641 Microprocessors

You can develop applications for MPC8641 processors from Freescale™. The automation interface and project components support the new processor.

Interrupt-Driven Scheduling for MPC8641 and Selected MPC74xx Microprocessors

The Hardware Interrupt and Idle Task blocks now support interrupt-driven (asynchronous) scheduling with the following microprocessors:

- MPC8641

- MPC7410

- MPC7447

- MPC7448

- MPC7457

Note Selecting the MPC7400 provides a generic free-running model, the same as previous releases.

Functions, Properties, and Arguments Being Removed

The following table lists functions and arguments that will be removed from the product in a future version.

Feature, Function, or Argument Name	What Happens When You Use Feature, Function, or Argument	Use This Instead
close(,'text')	Warns	None
isvisible	Warns	None
new(,'text')	Warns	None
open(,'text')	Warns	None
save(,'text')	Warns	None
visible	Warns	None

Version 1.0.1 (R2008a) Embedded IDE Link MU Software

This table summarizes what's new in V1.0.1 (R2008a):

Version (Release)	New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Version V1.0.1 (R2008a)	Yes Details below	No	Bug Reports	Printable Release Notes: PDF Current product documentation

Features introduced in this version are described here:

"What's This?" Context-Sensitive Help Available for Simulink Configuration Parameters Dialog

R2008a introduces "What's This?" context-sensitive help for parameters that appear in the Simulink Configuration Parameters dialog. This feature provides quick access to a detailed description of the parameters, saving you the time it would take to find the information in the Help browser.

To use the "What's This?" help, do the following:

1 Place your cursor over the label of a parameter.

2 Right-click. A **What's This?** context menu appears.

For example, the following figure shows the **What's This?** context menu appearing after a right-click on the **Start time** parameter in the **Solver** pane.
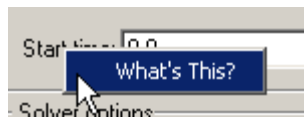
3 Click **What's This?** A context-sensitive help window appears showing a description of the parameter.

Version 1 (R2007b+) Embedded IDE Link MU Software

This table summarizes what's new in V1 (R2007b+):

New Features and Changes	Version Compatibility Considerations	Fixed Bugs and Known Problems	Related Documentation at Web Site
Yes Details below	No	Bug Reports	Printable Release Notes: PDF Current product documentation

Features introduced in this version are described here:

Automation Interface Component

You use the objects, functions, and methods provided by the automation interface component to interact with the Green Hills®MULTI® development environment from the MATLAB command prompt. You can load, add to, and build projects, read and write to processor memory, and manipulate directories and project configurations.

The Automation Interface component of Embedded IDE Link MU software supports the processors listed in "Supported Versions of Green HillsMULTI" on page 13. To use the software, you must have Green HillsMULTI, version 5.0.1 for NEC® V850, Analog Devices™ Blackfin®, or Freescale MPC55xx. For more details, refer to "Supported Processors" on page 12

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Project Generator Component

The project generator component enables you to generate code from Simulink models into the IDE as Green Hills® MULTI® projects. After you create your model, you add a target preferences block to your model and set your model configuration parameters for the code generation process. Adding the target

preferences block enables your model to be the source for code for a Green Hills MULTI project for one of the supported processors.

Embedded IDE Link MU software supports the following processors:

- Analog Devices Blackfin®

- Freescale MPC55xx

- Freescale MPC7400

- NEC V850

To support the Project Generator component for creating Green HillsMULTI projects, Embedded IDE Link MU software provides a block library, multilinklib, that contains the block libraries shown in the following table to enable you to configure Simulink models to generate projects and code for the supported processors.

Block Libraries in multilinklib	Blocks in Library
Target Preferences (multilinklib_tgtpref)	Target Preferences
Core Support (multilinklib_coresupport)	Memory Allocate, Memory Copy, Idle Task
MPC5500 Support (multilinklib_mpc5500)	HW/SW Interrupt
Blackfin Support (multilinklib_blackfin)	Hardware Interrupt

Getting Started With This Release

To get started using Embedded IDE Link MU software to develop projects, refer to Getting Started in the online documentation.

Supported Processors

The following table lists the processors and operating modes supported by this release of the Embedded IDE Link MU software.

Processor or Family	Operating mode
Analog Devices Blackfin	Interrupt scheduler support
Freescale MPC5500	Interrupt scheduler support
Freescale MPC7400	Free running
NEC V850	Free running

Interrupt scheduler support indicates that the process running on the processor responds to software- and hardware-driven interrupts.

Getting Additional Information About Embedded IDE Link MU Software

For information about the objects and methods available for you to use, refer to the online Help system, or enter the following command at the MATLAB prompt:

```
help ghsmulti
```

MATLAB displays a list of the functions and methods in the Embedded IDE Link MU product, details about how to access help for those methods, and links to the product demos.

Use the following link—Embedded IDE Link MU—to access the demos. You will find demos that introduce the components of Embedded IDE Link MU software:

- Automation Interface Component — Automation Interface Tutorial

- Project Generator Component — Project Generator Tutorial

- Workflow Demos — Code Generation Workflow

Supported Versions of Green HillsMULTI

Embedded IDE Link MU software works with the processors and versions of Green Hills MULTI shown in the following table.

Processor Family or Company	Supported Green Hills MULTI version
Analog Devices Blackfin	5.0.1
NEC V850	5.0.1
Freescale MPC5500	5.0.1
Freescale MPC7400	5.0.1

Version 5.0.0 is not supported for this release.

Compatibility Summary for Embedded IDE Link MU 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 V1.2 (R2009a)	See this change: • "Functions and Arguments Being Removed" on page 4
V1.1 (R2008b)	See this change: • "Functions, Properties, and Arguments Being Removed" on page 8
V1.0.1 (R2008a)	No
V1 (R2007b+)	No