



Which Simulink® Model Settings need to be made when using INTECRIO MATLAB® and Simulink® connectivity

This FAQ focuses on MATLAB® and Simulink® connectivity and the model settings you need to make in Simulink®

Note: MATLAB® and Simulink® connectivity is provided by the INTECRIO integration platform without the need of further add-on installations. The integration platform contains everything required for a successful linking of Simulink® models in INTECRIO for integration and rapid prototyping.

This article assumes you have already INTECRIO Blockset in Simulink® integrated. If not please refer to section "Additional Info".



The Model Configuration Parameters in Simulink®

Two things need to be taken into consideration

- Code Generation
- Solver

The settings for both of them will be made in Simulink® within the Model Configuration Parameters. To get the dialogue for these parameters you may use "Ctrl-E" or use the Gear Icon (Figure 1)



Figure 1 Simulink® Menu - Model Configuration Parameters

Configuration Parameters: untitled/
Q Search
Salvar
Data Import/Export
Math and Data Types
 Diagnostics
Hardware Implementation
Model Referencing
Simulation Target
 Code Generation
Optimization
Report
Comments
Identifiers
Custom Code
Interface

03.01.2022

© ETAS GmbH 2020. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for

- 1 -



Figure 2 Simulink - Model Configuration Parameters – Options

The options for the settings for Code Generation and Solver are described in the following sections.

Jo



Code Generation

Code Generation in Simulink $\ensuremath{\mathbb{R}}$ is controlled within a *.tlc file - tlc stands for $t\!$ arget language $c\!$ ompiler

Da

There are two *.tlc files you can select between (Figure 1):

- target irt.tlc / INTECRIO Real-Time Target
- **target ier.tlc** / INTECRIO Embedded Coder Real-Time Target (requires a license for embedded coder)

Solver	Target selection		
Data Import/Export Math and Data Types Diagnostics	System target file: grt.tlc		Browse
	System Target File Browser:		×
Hardware Implementation	System Target File:	Description:	
Simulation Target	ier.tlc	INTECRIO Embedded Coder Real-Time Target	N°.
 ✓ Code Generation 	irt.tlc	INTECRIO Real-Time Target	h3"

Figure 1: Configuration parameters - Code Generation - Target Selection

When to use which target file:

target irt.tlc / INTECRIO Real-Time Target

That must be selected if the Simulink® model must be further processed with INTECRIO

target ier.tlc / INTECRIO Embedded Coder Real-Time Target

That must be selected if the Simulink[®] model to be used in INTECRIO was created with Real-Time Workshop Embedded Coder

Solver Selection

For the solver selection it is important that you make the following settings (Figure 2):

- Type: Fixed-step
- Solver: discrete (no continuous states)



Solver Data Import/Export Math and Data Types Diagnostics Hardware Implementation Model Referencing Simulation Target Code Generation Optimization Report Comments Identifiers Custom Code Interface	Simulation time Start time: 0.0 Stop time: 10.0		
	Solver selection Type: Fixed-step Solver: discrete (no continuous states)		
	Solver details Fixed-step size (fundamental sample time): auto Tasking and sample time options		
	Periodic sample time constraint: Unconstrained Treat each discrete rate as a separate task Allow tasks to execute concurrently on target Automatically handle rate transition for data transfer Higher priority value indicates higher task priority	•	

Figure 2: Simulink Model Configuration Parameters - Solver



How to integrate Intecrio MATLAB® and Simulink® connectivity to have the Intecrio Blockset in Simulink® available

The FAQ "How to integrate INTECRIO MATLAB® and Simulink® connectivity" shows how to integrate INTECRIO MATLAB® and Simulink® connectivity.

In case of further questions:

Please feel free to contact our Support Center, if you have further questions. Here you can find all information: <u>http://www.etas.com/en/hotlines.php</u>

This information (here referred to as "FAQ") is provided without any (express or implied) warranty, guarantee or commitment regarding completeness or accuracy. Except in cases of willful damage, ETAS shall not be liable for losses and damages which may occur or result from the use of this information (including indirect, special or consequential damages).