

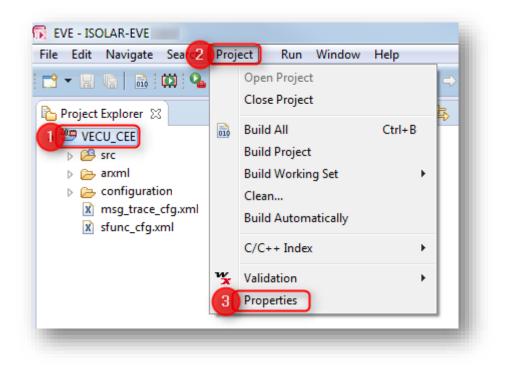
## ISOLAR-EVE: Use my VECU in Matlab/Simulink?



- How can I use my VECU from ISOLAR-EVE in Matlab/Simulink?
- In ISOLAR-EVE I created a virtual electronic control unit (VECU)
  - Is it possible to use this VECU in MATLAB and Simulink?

Answer

- ISOLAR-EVE allows to generate an **S-Function** from a VECU
- This S-Function can be used as a **referenced library** in Simulink
- 1. In ISOLAR-EVE: Open the properties of the EVE project
  - $\circ \quad In \text{ Project Explorer: Click on project} \rightarrow \text{Menu Bar} \rightarrow \text{Project} \rightarrow \text{Properties}$



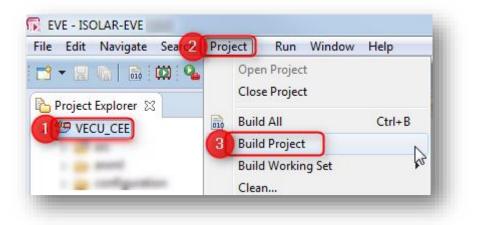
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- 2. Activate the option **S-Function** in the VECU Build settings:
  - In dialog Properties for <project\_name> → EVE → VECU Build → On right hand side, panel VECU Build → S-Function: Click square to enable this setting (check mark will be displayed) → Click OK button

ype filter text	VECU Build	← - ⇒ -
<ul> <li>Resource AUTOSAR Release Builders</li> <li>C/C++ General EVE</li> <li>VECU Build</li> <li>VECU Compile/Link Linux Tools Path Logging Project References Run/Debug Settings Task Tags</li> <li>Validation</li> </ul>	VECU Interfaces  RTE Trace Message Trace/Inject configuration files  XCP 3 V S-Function	New
	S-Function configuration file FMI (FMU Generation) Output Location	Browse
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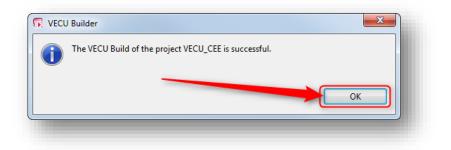
- 3. Build the project
  - $\circ$  Menu Bar  $\rightarrow$  Project  $\rightarrow$  Build Project



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4. At the end of the build process there is a confirmation dialog  $\rightarrow$  Click **OK** button



5. Result: All relevant files will be generated to a dedicated folder:

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VECU_CEE.exe			
VECU_CEE.map			
VECU_CEE.sfunction.exe			
BuildSFunction			
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- 6. During the build a file with the name **<project\_name>.sfunction.exe** is created in the VECU **'Bin'** folder
  - This file is a self-extracting executable
- 7. Copy this file to a PC that has MATLAB/Simulink installed
- 8. Open a command line interface and execute this file on the MATLAB/Simulink PC

C:\Windows\system32\cmd.exe	
D:\ETASData\ISOLAR-EVE:	\VECU_CEE\VECUs\MinGW\Bin>VECU_CEE.sfunction.exe

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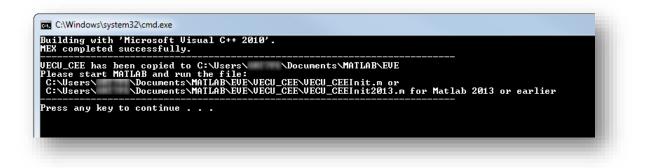


## 9. Result:

• The executable **< project >.sfunction.exe** extracts the S-Function to a local Matlab path

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B	<ul> <li>Name</li> </ul>	*	Date modified	Туре	Size	
8	readme.b	xt	12.20.2010.00.00	TXT File	6 KB	
	VECU_CE	E.exe	12.10.2010.00.00	Application	1.071 KB	
	VECU_CE	E.mexw64	12.10.2018 08.07	MATLAB MEX	99 KB	
	VECU_CE	EDelete.m	10.10.2010.00.00	MATLAB Code	1 KB	
	VECU_CE	EInit.m	12.10.2018.00.00	MATLAB Code	5 KB	
	-					

The output files are copied to the folder
 C:\Users\<user\_name>\Documents\MATLAB\EVE\<project\_name>



- Follow the instructions provided in the command line interface:
- "Please start MATLAB and run the file: ...Init.m"
- 10. In MATLAB: Navigate to the folder mentioned in the previous step



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11. On file **<project\_name>Init.m**: Right mouse button click  $\rightarrow$  **Run** 

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	CU_CEE.mexw64		
	CU_CEEDelete.p		
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12. Result: 2 new files created - <project\_name>.log and eveLibrary.slx

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13. In MATLAB: Open Simulink Library

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		FILE			V	ARIABLE	CODE	SIMULIN	and the second strength and s	ulink block library	i.

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14. In dialog **Simulink Library Browser**  $\rightarrow$  **EVE**  $\rightarrow$  On right hand side: Block <project\_name>

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Simulink Commonly Used Blocks Continuous Dashboard Discontinuities Discrete Logic and Bit Operations Lookup Tables Math Operations Model Verification Model-Wide Utilities Ports & Subsystems Signal Attributes Signal Attributes Signal Routing Sinks Sources User-Defined Functions D Additional Math & Discrete EVE HDL Coder INTECRIO Simulink 3D Animation Simulink Extras Stateflow Recently Used Blocks	2 VECU_CEE	

15. Drag and drop the block into a Simulink block diagram

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## *i* Additional information

• For more information please refer to the ISOLAR-EVE User's Guide

Do you still have questions?

- You will find further FAQ articles on the ETAS homepage: <u>www.etas.com/en/faq</u>
- o Movies corresponding to FAQ articles can be found on the ETAS YouTube channel
- $\circ$   $\;$  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>

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