

APPLICATION NOTE





INTRODUCTION

The Build and Integration Framework for Automotive Controller Embedded Software (BIFACES) from Infineon, is an internally developed build framework for Infineon automotive micro-controllers' software development. This application note describes how you can migrate a project created with Infineon's BIFACES to the TASKING VX-toolset for TriCore Eclipse IDE.

The benefits of using the TASKING VX-toolset for TriCore Eclipse IDE instead of BIFACES is that you have full control over the tool options through the graphical Eclipse user interface. The integrated Pin Mapper eases pin status configuration. You also have direct access to the integrated debugger. Your complete development integrated environment all in one place.

In this application note we assume that you are familiar with BIFACES and already have it installed by following the BIFACES User Manual. We also assume you have installed the Base Projects you want to migrate from.

The following BIFACES downloads from https://myicp.infineon.com are assumed in this application note, but of course the same guidelines can be followed for newer versions:

Infineon download	Description
BIFACES_V1_0_2_Win32.zip BIFACES_V1_0_2_Win64.zip	BIFACES V1.0.2 for Windows 32-bit BIFACES V1.0.2 for Windows 64-bit
BaseProjects_AURIX1G_V1_0_1_11_0.zip	BIFACES Base Projects for AURIX devices based on iLLD V1.0.1.11.0. Supported devices: • TC21A • TC22A • TC23A • TC26B • TC27C • TC27D • TC29B
BaseProjects_AURIX2G_V1_0_1_11_0.zip	BIFACES Base Projects for AURIX 2G devices based on iLLD V1.0.1.11.0. Supported devices: • TC33A • TC33AED • TC35xA • TC36A • TC37xA • TC38A • TC38A • TC39B

These versions work together with the TASKING VX-toolset for TriCore v6.3r1.







PREPARING THE BIFACES BASE PROJECTS

- 1. Install BIFACES (either the 32-bit or 64-bit version) and the BFACES Base Projects according to the BIFACES User Manual if you have not done so already.
- 2. Start BIFACES by double-clicking on StartBifases.bat in the BifacesWin32 or BifacesWin64 directory, depending on which version you installed.

Image: Computer → Local Disk (C:) → Tools → BifacesWin32 → Organize ▼ Image: Open Print Burn New folder							
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Figure 1: Start BIFACES

3. Select the workspace where you installed the Base Projects and click Launch:



Figure 2: Select workspace







- 4. Click F5 or select File -> Refresh to refresh the content of the Project Explorer view.
- 5. Edit file Config_Tasking.mk in BaseFramework_TC39B\1_ToolEnv\0_Build\1_Config\Config_Tricore_ Tasking and change the variable B_TASKING_TRICORE_PATH to the path where your TASKING VX-toolset for TriCore v6.3r1 is located. For example:

B_TASKING_TRICORE_PATH= C:\TriCore_v6.3r1\ctc



Figure 3: Change path to TASKING VX-toolset for TriCore

- 6. Edit Config.xml in BaseFramework TC39B\1 ToolEnv\0 Build\1 Config and make the following changes:
 - a. Set primaryToolchain under architecture to Tasking.
 - b.Set enable under the Tasking toolchain to true (this should already be the case).
 - c. Set enable under all of the other toolchain entries to false.



Figure 4: Edit Config.xml







- 7. Add a Build target.
 - a. Double-click on Makefile.

b. In the Outline view right-click on all and select Add build Target.



Figure 5: Add a build target

8. Double-click on all under the just created Build Targets.



Figure 6: Build the project in BIFACES

The project will be built and the directory 9_Make will be created which contains the file <code>Tricore_IncludePathList.opt</code> that is needed in the TriCore Eclipse IDE.







CREATE AN EMPTY PROJECT USING TRICORE ECLIPSE IDE

- 1. Start the TriCore Eclipse IDE.
- From the File menu, select New » TASKING TriCore C/ C++ Project.

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	Save			Ctrl+S		Project		

Figure 7: New TASKING TriCore C/C++ Project

 Specify a project name (for example BaseFramework_ TC39B), select TASKING TriCore Application » Empty Project and click Next.



Figure 8: Project name / Empty Project

- Select a processor. In this application note we select TC39xB from the AURIX 2G Family.
- 5. Disable the actions **Add startup file(s) to the project** and **Add linker script file to the project** and click **Finish**.

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Figure 9: Project settings

Your C/C++ Projects view should now look like this:



Figure 10: C/C++ Projects view







COPY DATA FROM BIFACES TO THE TASKING ECLIPSE IDE PROJECT

- Copy (Ctrl+C) 0_Src from the BaseFramework project (BaseFramework_TC39B\0_Src) from BIFACES and Paste (Ctrl+V) it in the BaseFramework project in the TriCore Eclipse IDE.
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- 2. Copy (Ctrl+C) Lcf_Tasking_Tricore_Tc.lsl from the BaseFramework project directory (BaseFramework_ TC39B\1_ToolEnv\0_Build\1_Config\Config_ Tricore_Tasking) and Paste (Ctrl+V) it in the BaseFramework project in the TriCore Eclipse IDE.



Figure 11: Copy 0_Src



Figure 12: Paste 0_Src



Figure 13: Result

Figure 14: Copy LSL file



Figure 15: Paste LSL file

3. Copy (Ctrl+C) Tricore_IncludePathList.opt
from the BaseFramework project directory
(BaseFramework_TC39B\1_ToolEnv\0_
Build\9_Make) and Paste (Ctrl+V) it in the
BaseFramework project in the TriCore Eclipse IDE.











Figure 17: Paste include path list

TASKING C/C++ - BaseFramework_TC39B/Tricore_IncludePathList.opt - TriCore Eclipse IDE v6.3r1

ADAPT THE TASKING ECLIPSE IDE PROJECT

1. Open Tricore IncludePathList.opt and change all 0 Src/ paths to .../0 Src/ and Save(Ctrl+S) the file.

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Figure 18: Open the options file

Figure 19: Add ../ to include path







2. Disable Automatic inclusion of '.sfr' file from the Properties dialog (Project » Properties for *project_name*, C/C++ Build » Settings» Tool Settings » C/C++ Compiler » Preprocessing).



Figure 20: No automatic inclusion of SFR file

3. Add -f "*path_to_opt_file*\Tricore_IncludePathList.opt" to the Additional optionsfield (Project » Properties for *project_name*, C/C++ Build » Settings» Tool Settings » C/C++ Compiler » Miscellaneous), where *path_to_opt_file* is the absolute path to the option file.

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Figure 21: Add options file to the additional options







4. Select Lcf_Tasking_Tricore_Tc.lsl as Linker Script File (**Project » Properties for** *project_name*, **C/C++ Build »** Settings» Tool Settings » Linker » Script File). You can use the Browse button to look for the file.

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Figure 22: Specify LSL file

BUILD THE PROJECT

- 1. From the **Project** menu, select **Build** <*project-name*> (or select **Rebuild** <*project-name*> to do a rebuild).
- 2. Check if any errors occurred. If an error occurred with include paths, please check and adapt Tricore_ IncludePathList.opt accordingly.

TASKING C/C++ - BaseFramework_TC39B/	ricore_IncludePathList.opt - TriCore Eclipse IDE v6.3r1					
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Figure 23: Build result

The project is now ready.

This concludes the Application Note on how to migrate from BIFACE to the TASKING TriCore Eclipse IDE.

