Renesas RA Family

Migrating Projects to New FSP Version

Introduction

This section describes the steps to migrate an existing RA Project to a newer FSP pack version, and then build and run the example project. The procedure in this migration guide applies to all RA devices and evaluation kits, and all software listed in the Required Resources section.

Required Resources

- An RA evaluation kit (for example, EK-RA6M3)
- A PC running Microsoft® 10 with the following Renesas software installed as required:
  — Flex Software Package (FSP) v1.0.0 or greater
  — e² studio ISDE v7.6.0 or greater
  — RA Smart Configurator (RASC) v7.6.0 or greater
  — IAR EW for ARM v8.50.1 or greater
  — Keil MDK (v5.29 or higher) and ARM compiler 6 (version 6.13 or higher)
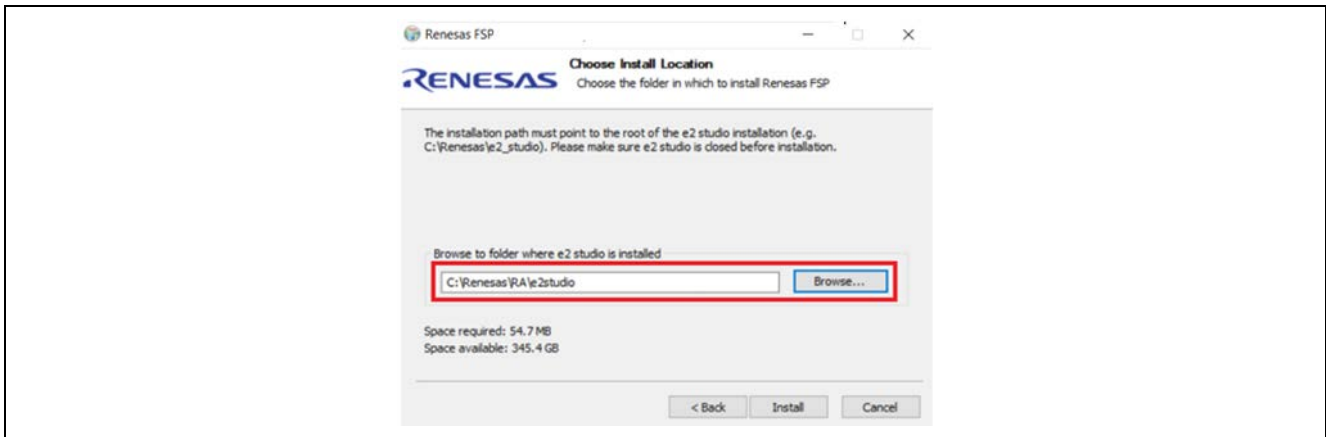
Contents

1. Installing Latest FSP Packs

A. e² studio

   This can be done in two ways:

— Download and install the latest FSP with e² studio Installer (for example, `setup_fsp_x_x_x_e2s_x_x.exe`). This should be done if the e² studio version has changed.

— Download and run the latest FSP pack installer (for example, `FSP_Packs_x.x.x.exe`) and browse to the folder where e² studio is installed.
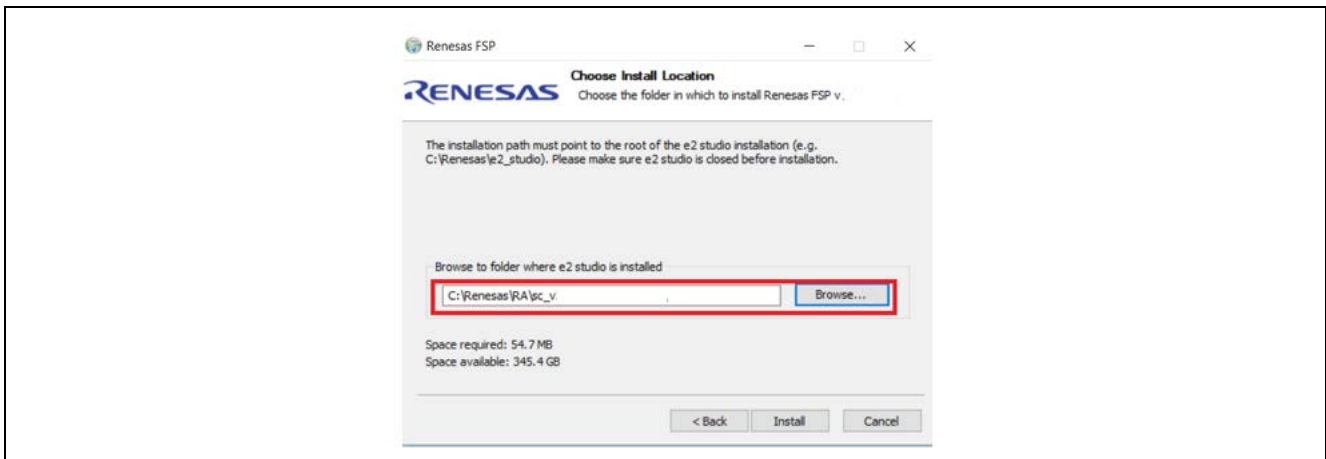

Figure 1. Choosing Install Location in e² studio

B. Keil and IAR

   This can be done in two ways:

— Download and install the new RASC (for example, `setup_fsp_x_x_x_rasc_x_x.exe`) with the latest FSP pack version.

— Download and run the latest FSP pack installer (for example, `FSP_Packs_x.x.x.exe`) and browse to the folder where RASC is installed.

**Figure 2. Choosing Install Location in Keil and IAR**

C. Additional steps:

  a. IAR: To use RASC with EWARM, latest RASC needs to be configured as a tool in EWARM by selecting the menu item **Tools > Configure Tools**.
     Command: Select **Browse...** and navigate to `rasc.exe` in the installed RA SC.

  b. Keil: Import the latest RA device pack. (for example, `MDK_Device_Packs_x.x.x.zip`).
     Extract the archive file to locate the RA device pack. To import the RA device pack, launch the `PackInstaller.exe` from `<keil_mdk_install_dir>\UV4`. Select the menu item **File > Import...** and browse to the extracted `.pack` file.

2. Migrating Project in e² studio

2.1 Migrating an Existing Project in e² studio

1. Start by opening e² studio.
2. Follow the steps below to launch the workspace.
    A. At the end of e² studio startup, you see the **e² studio Launcher** dialog box as shown in Figure 3.
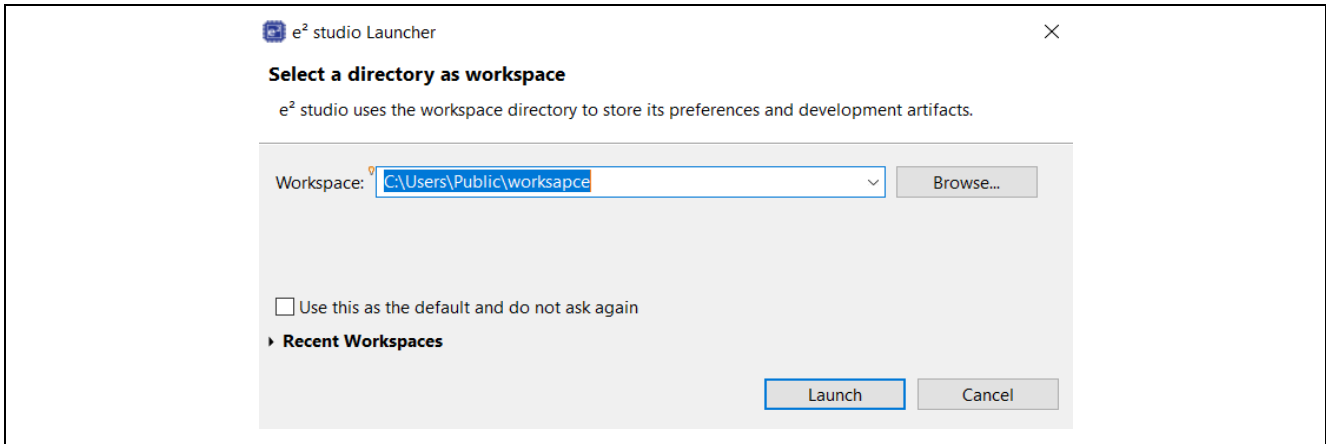

Figure 3.   e² studio Launcher Dialog Box

    B. If you do not see the dialog box, you might have turned it off. If this is the case, open your desired project and skip to step D. Otherwise, continue with the following steps.
    C. Enter a new workspace name in the **e² studio Launcher** dialog box.
    D. Click **Launch**.
    E. When the workspace is opened, you may see the **Welcome** window.
3. You are now in the workspace that you want to import the project into. Click **File** in the menu bar.
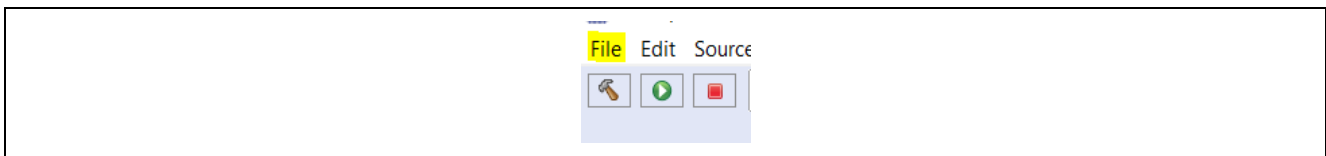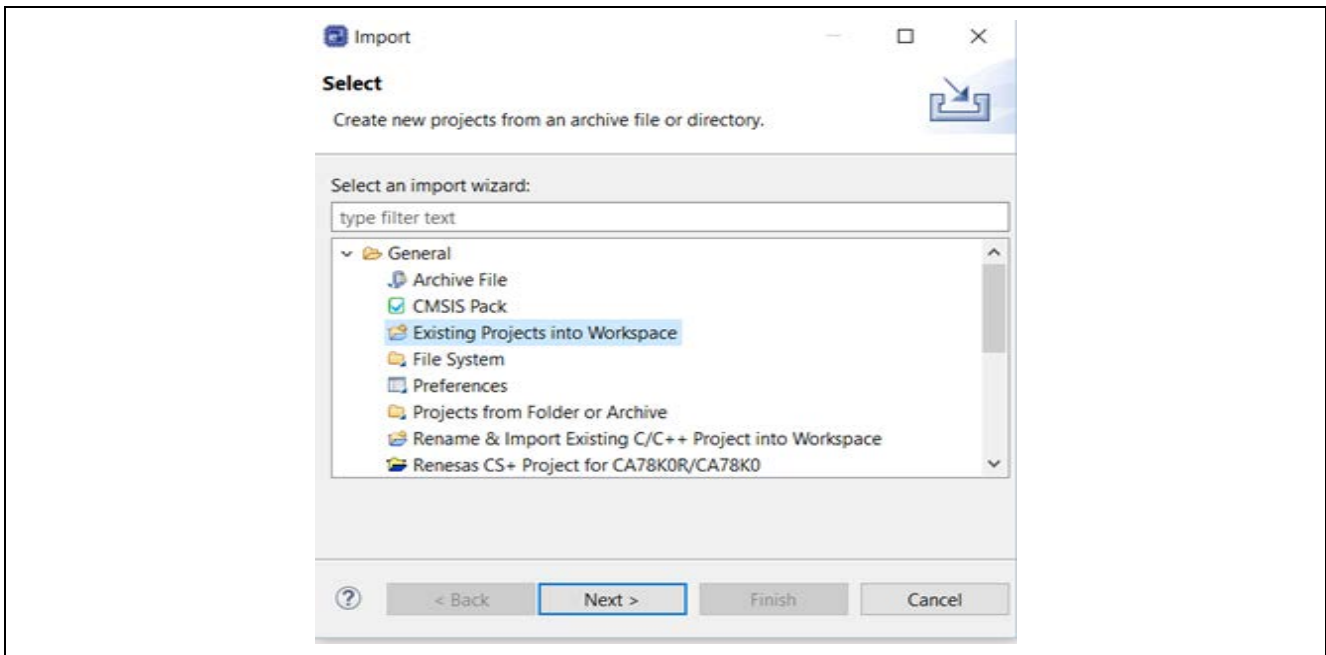

Figure 4.   File Menu Bar in the Workspace

4. Click **Import** on the **File** drop-down menu.
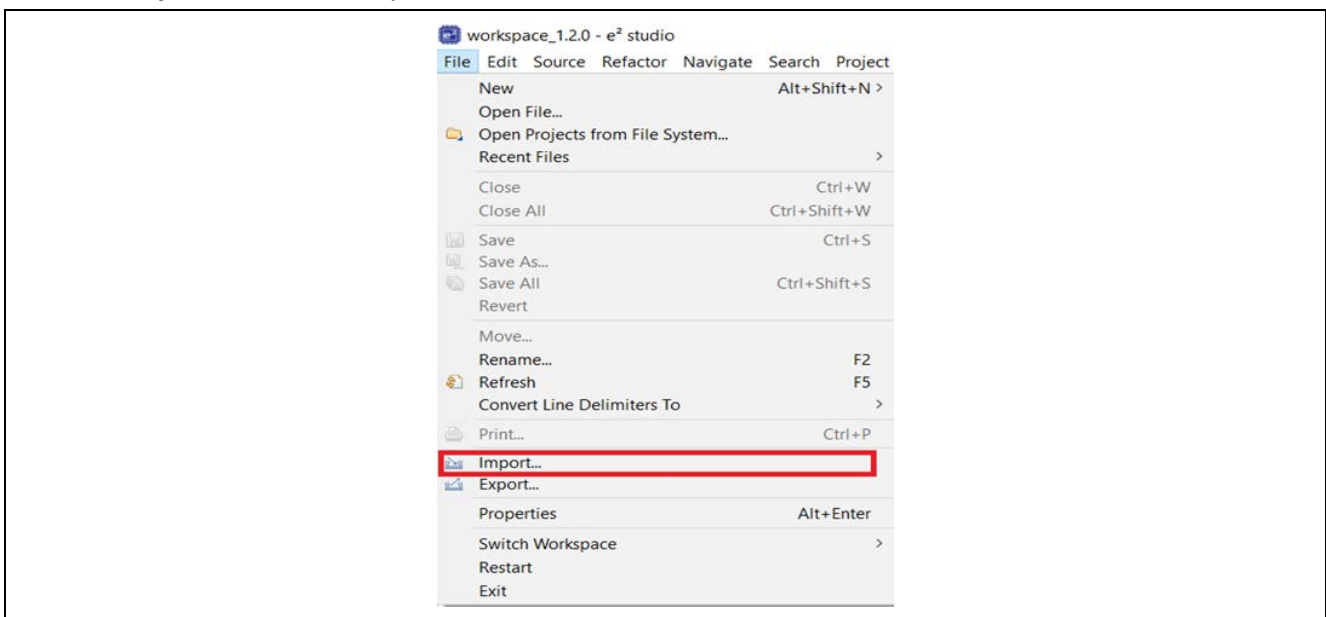
Figure 5.   Selecting Import Option in the File Menu

5. In the **Import** dialog box shown in the figure below, select the **General** option, and then select **Existing Projects into Workspace** to import the project into the current workspace.

Figure 6. Selecting Workspace to Import Existing Projects

6. Click **Next**.
7. Click **Select archive file** or **Select root directory** if project is already extracted and click **Browse**.
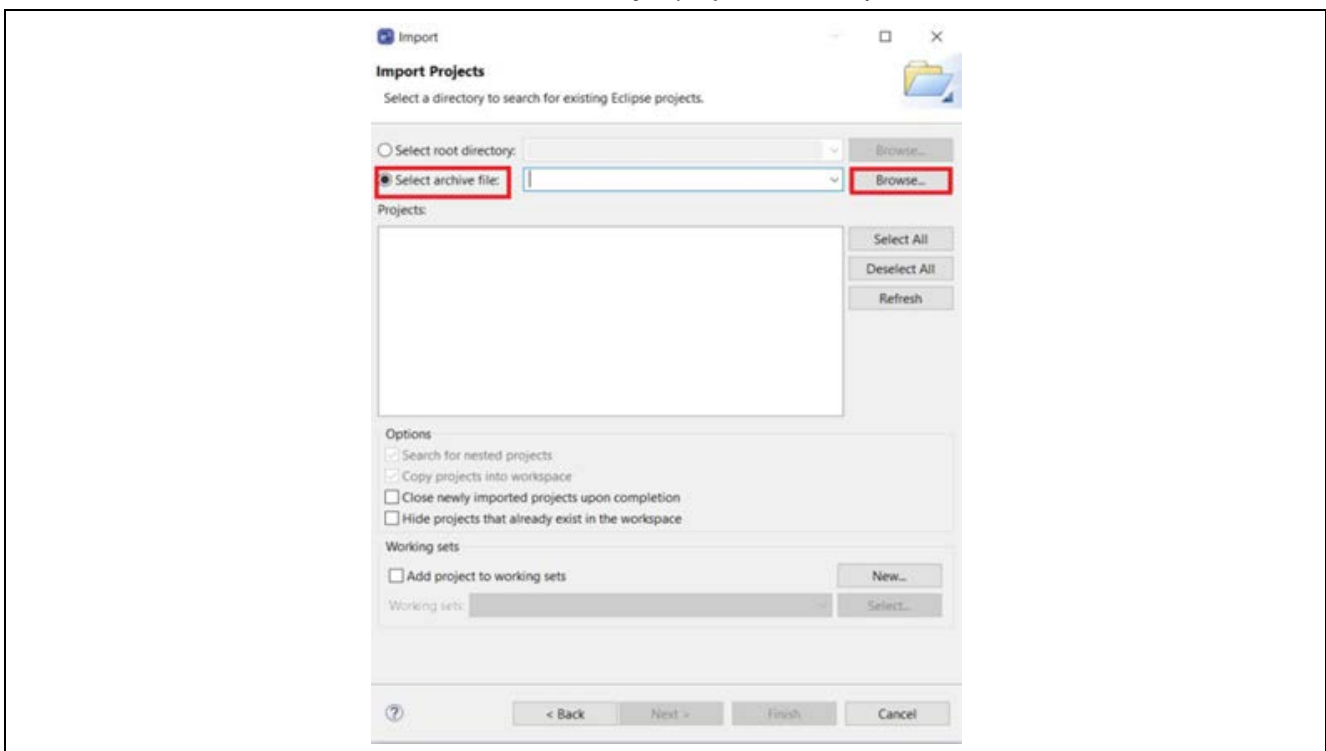
Figure 7. Selecting Archive File or Root Directory

8. Browse to the folder where the zip/extracted file for the project you want to import is located.
9. Select the file for import. For the purpose of illustration `gpt_ek_ra6m3_ep.zip` is used in this document.
10. Click **Open**.

11. Select the project to import from the list of projects.
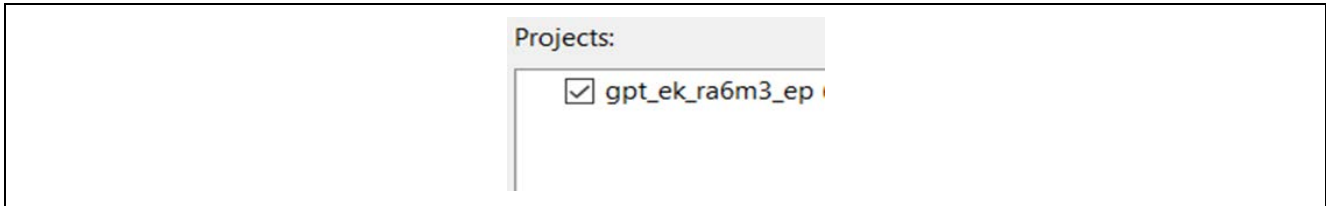
Figure 8.   Selecting the Project to Import

12. Click **Finish** to import the project.
13. Now that the project has been successfully imported, you can start configuring the project to migrate for the hardware.
14. Open the RA Configuration, by double-clicking the `configuration.xml` file in the Project Explorer.
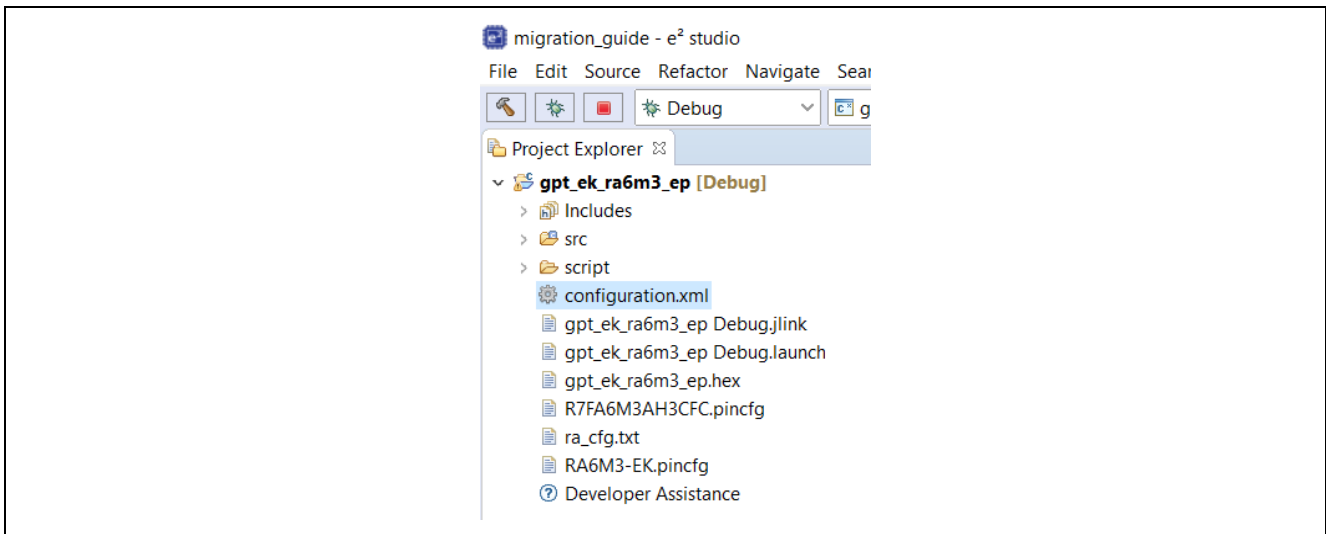
Figure 9.   Opening the RA Configuration using configuration.xml

15. After clicking, a dialog box may appear to migrate the project to latest FSP version. Click **OK**.
16. If not, click on **BSP** tab and choose the appropriate FSP version from drop down as shown.
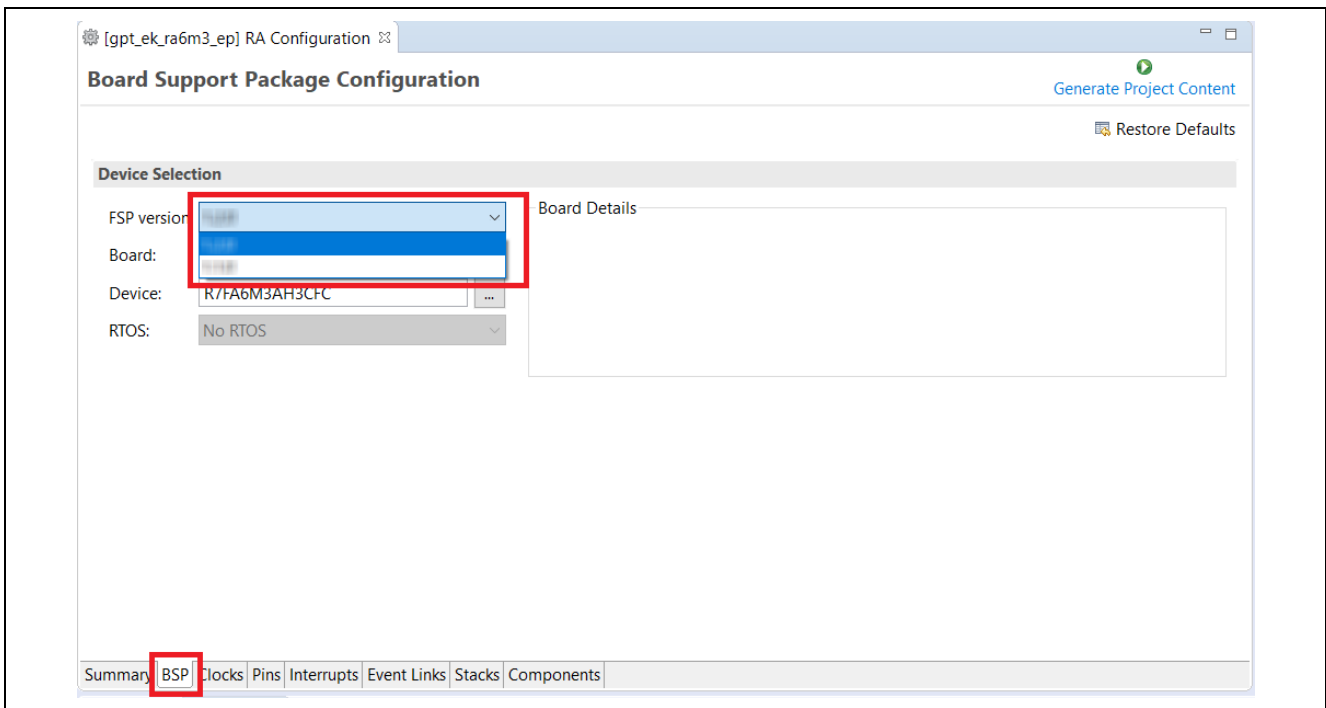
Figure 10.   Choosing the FSP Version from the BSP Tab

2.2   Generating the Project Files in e² studio

1. In the **RA Configuration** window, save the configuration and click the **Generate Project Content** button.
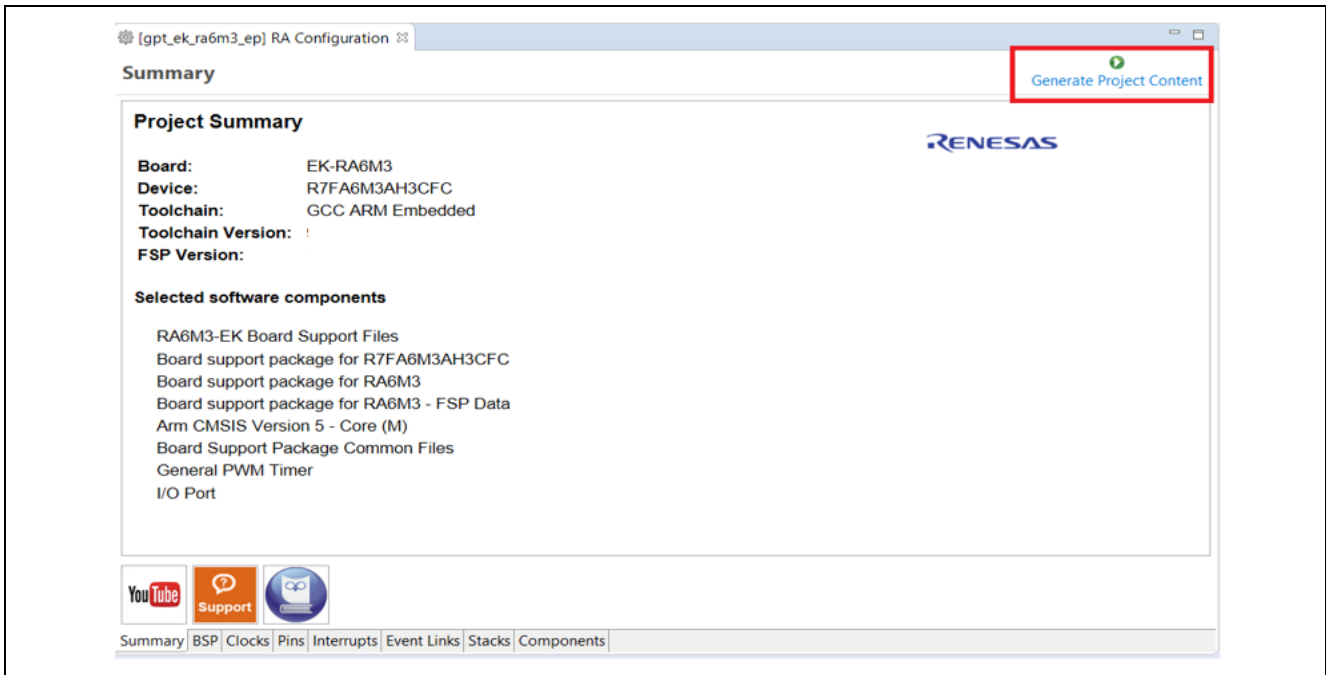
Figure 11.   Clicking the Generate Project Content Button

2.   The project should resemble the folder structure and the project is ready to build.
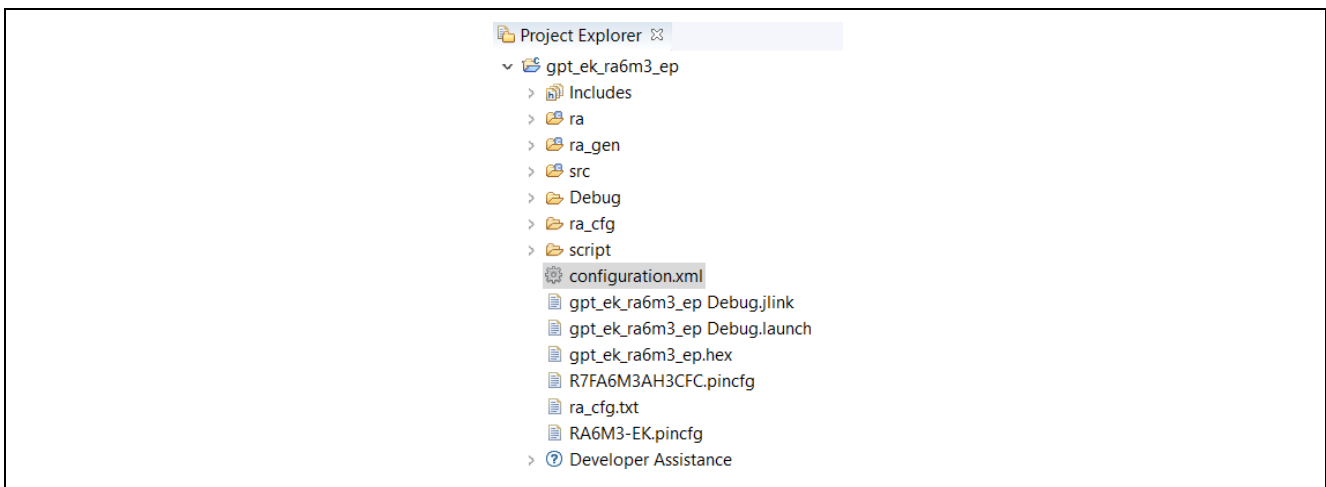
Figure 12.   Folder Structure for the Ready to Build Project

2.3   Building and Running the Project

Refer to the section "Tutorial: Your First RA MCU Project – Blinky" in FSP Documentation for steps on building and running the project.

3. Migrating a Project in Keil µVision

3.1 Migrating an Existing Project in Keil µVision

1. Start by unzipping the example project, `gpt_ek_ra6m3_ep.zip` and open the project in file explorer.
2. Open the Keil project by double clicking the µVision project file as shown in Figure 13.
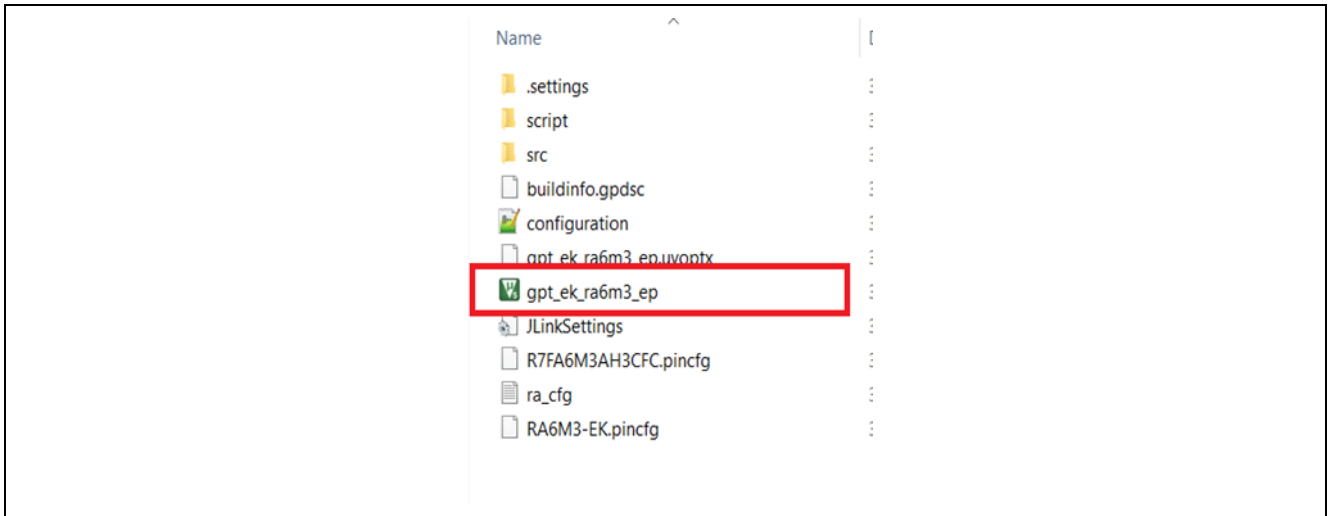
Figure 13. Opening the Keil Project

3. After opening the project, you should see the project structure as shown in Figure 14.
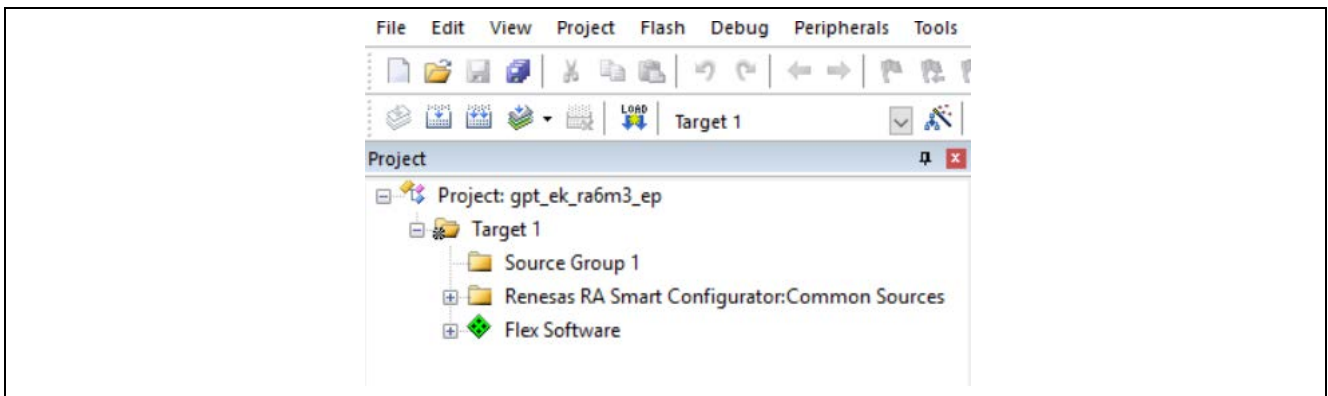
Figure 14. Project Structure

4. Now click on to open **Manage Run-time Environment** tab.

5. Click the green run button next to **RA Configuration** in the **Flex Software** tree as shown in Figure 15.
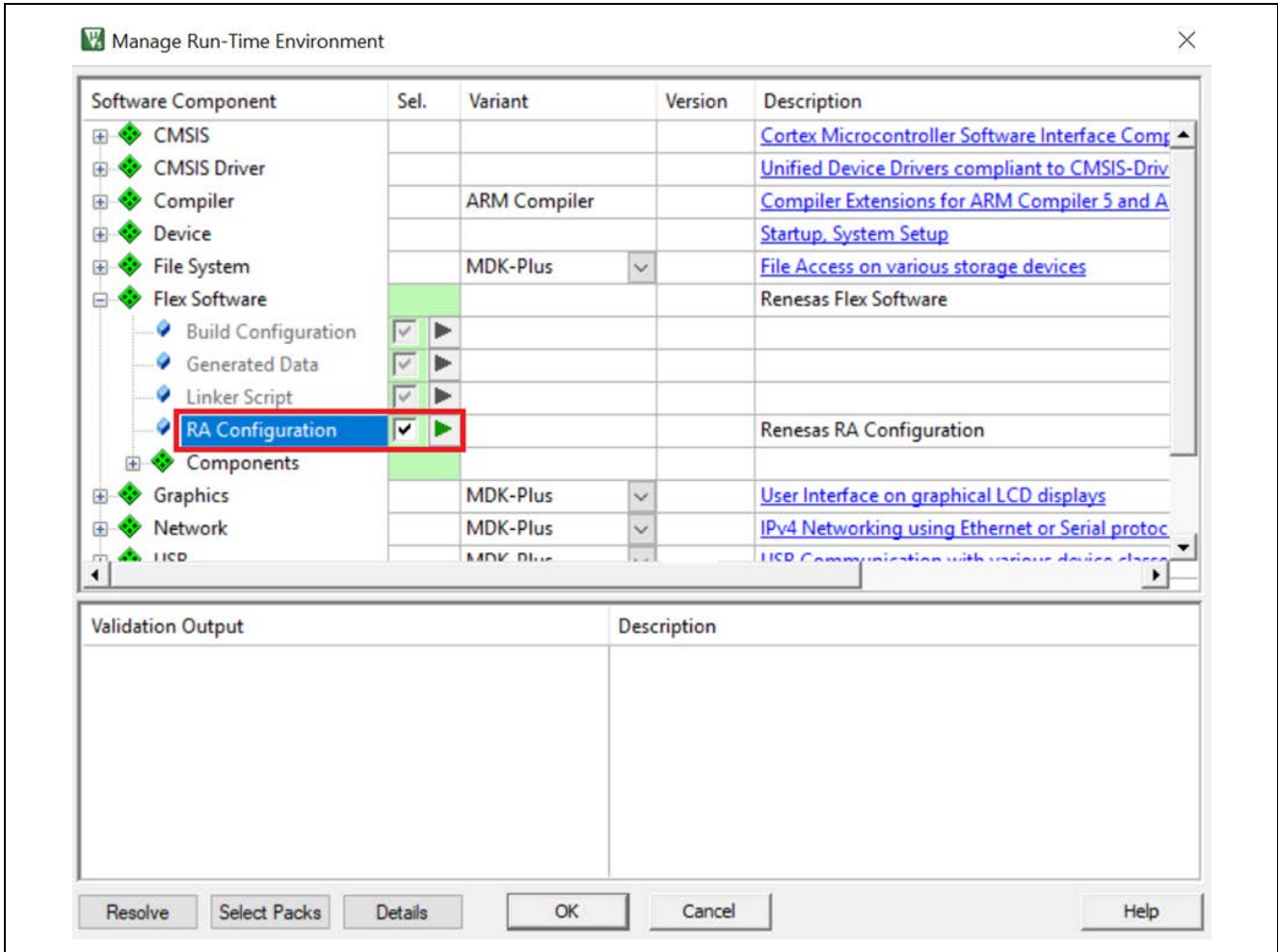
Figure 15.   Clicking the Green Button for RA Configuration in the Flex Software Tree

6. If multiple versions of RASC are installed, select the appropriate version of RASC to run.
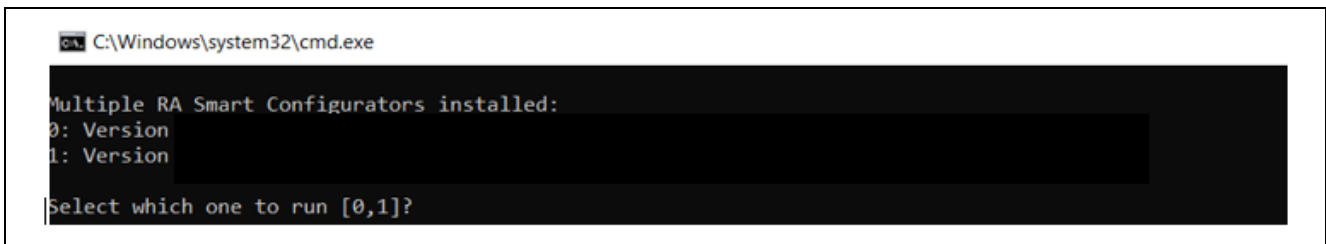
Figure 16.   Selecting the Appropriate Version of RASC to Run

7. RASC will be launched with project generator wizard.
8. A dialog box may appear to migrate the project to latest FSP version. Click **OK**.
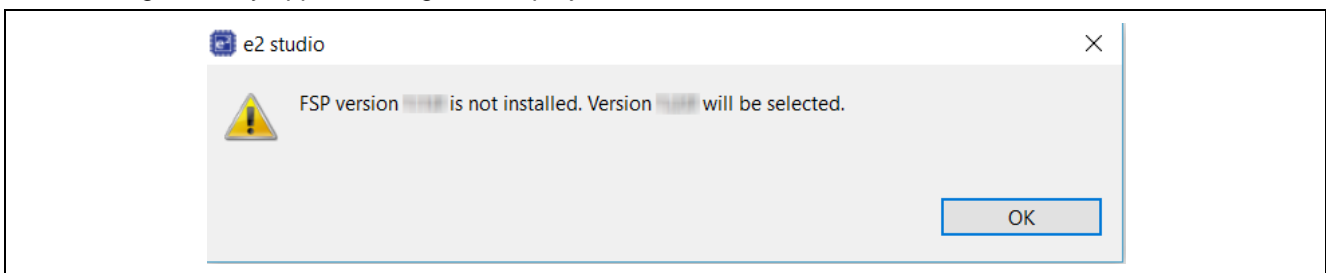
Figure 17. Notification Regarding FSP Version

3.2   Generating the Project Files in Keil µVision

1. The configuration window opens once the project wizard is closed.
2. In the RA Configuration window, click the **Generate Project Content** button.

Figure 18.   Clicking the Generate Project Content Button

3. After clicking **Generate Project Content** in the RA Smart Configurator, return to µVision. µVision offers a dialog box to import the changes and updates to the project made in RASC. Select **Yes** to import the updated project and the project is ready to build.
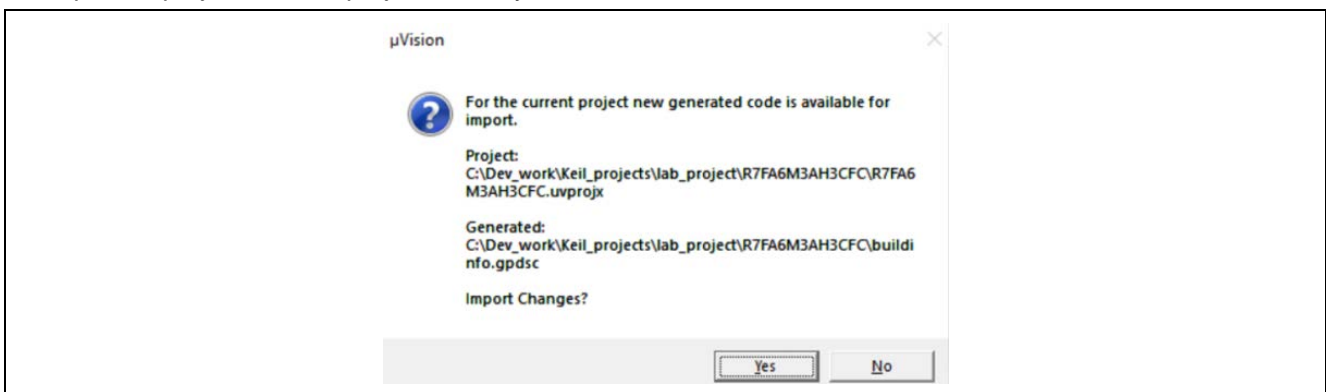
Figure 19.   Importing Changes and Updates in the µVision Window

4. RASC will place the necessary FSP source code and header files into the project workspace.

3.3   Building and Running the Project

Refer to the section "Using RA Smart Configurator with Keil MDK" in FSP Documentation for steps on building and running the project.

4. Migrating Project in IAR EWARM

4.1 Migrating an Existing Project in IAR EWARM

1. Start by unzipping the example project, `gpt_ek_ra6m3_ep.zip`, and open the project in file explorer.
2. Open the IAR project by double clicking the IAR project file as shown in Figure 20.
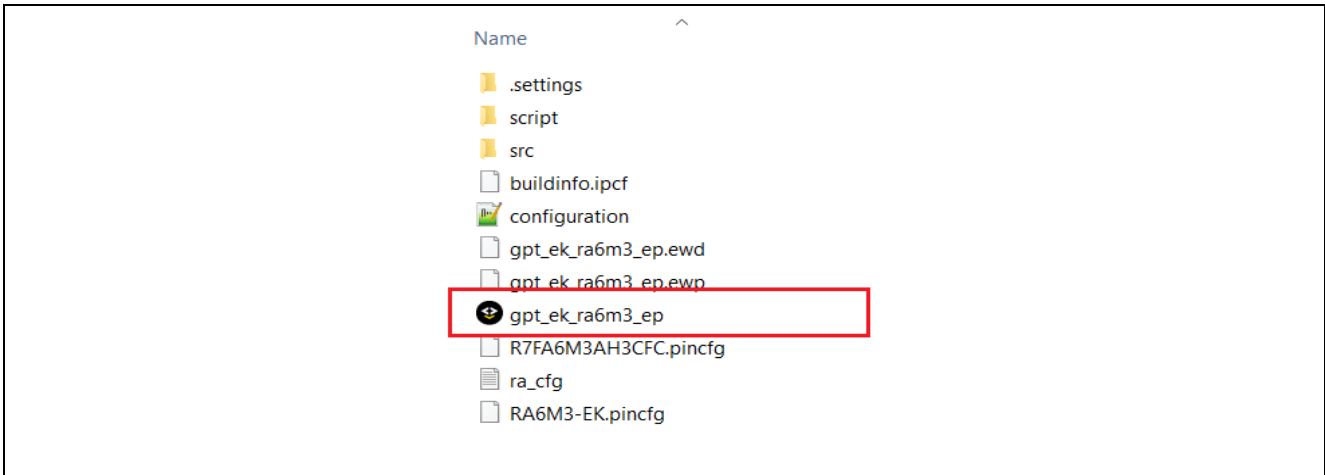
Figure 20.   Opening the IAR Project File

3. After opening the project, you should see the project structure as shown in Figure 21.
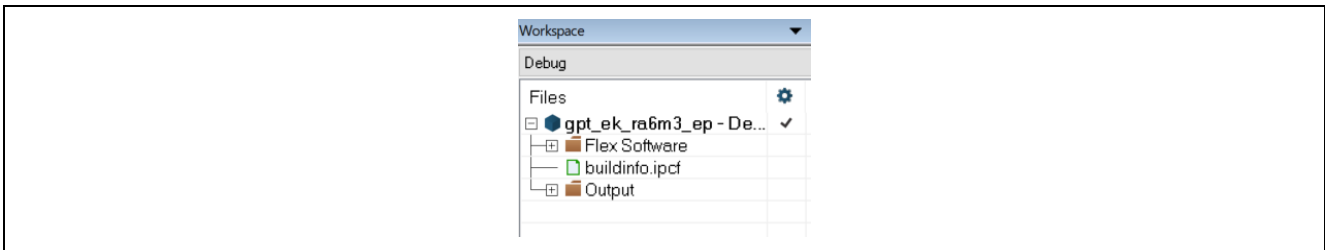

Figure 21.   Project Structure

4. RASC can now be launched from EWARM using the menu item **Tools > RA Smart Configurator**.
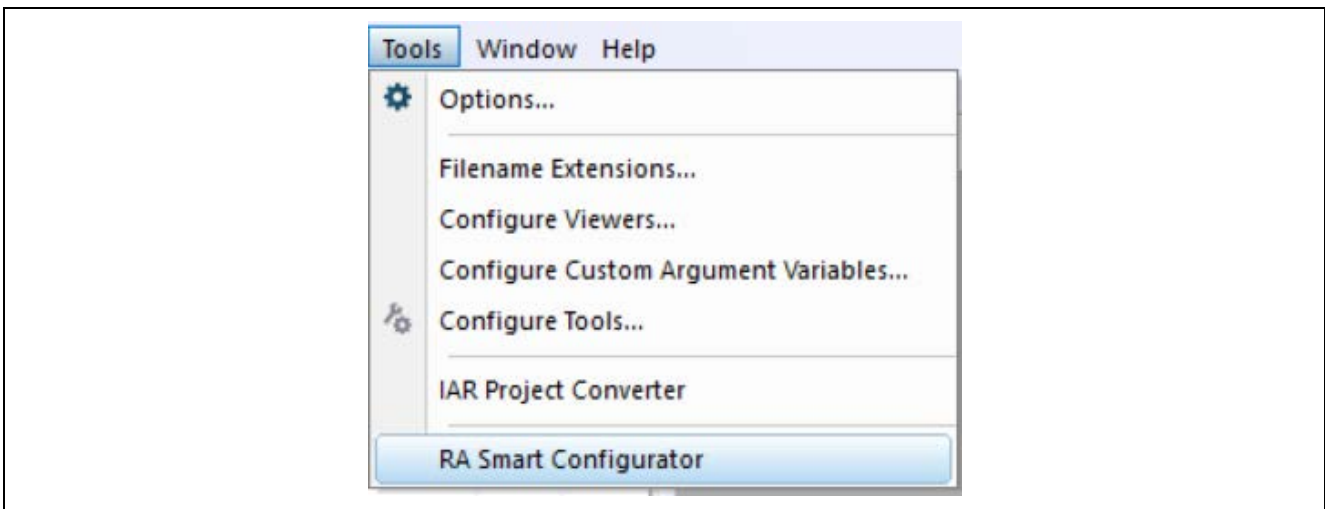
Figure 22.   Launching the RA Smart Configurator from EWARM

5. RASC will be launched with project generator wizard.
6. A dialog box will appear to migrate the project to latest FSP version.
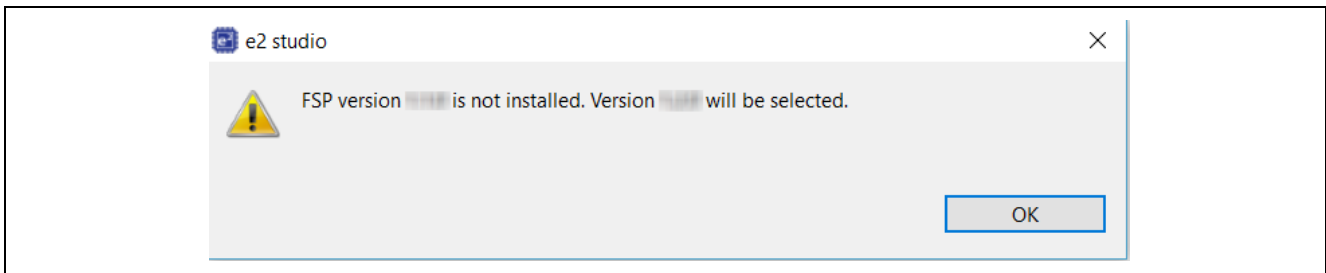
Figure 23. Migrating the Project to the Latest FSP Version

7. Click **OK**.

4.2 Generating the Project Files in IAR EWAR

1. The configuration window opens once the project wizard is closed.
2. In the RA Configuration window, click the **Generate Project Content** button.
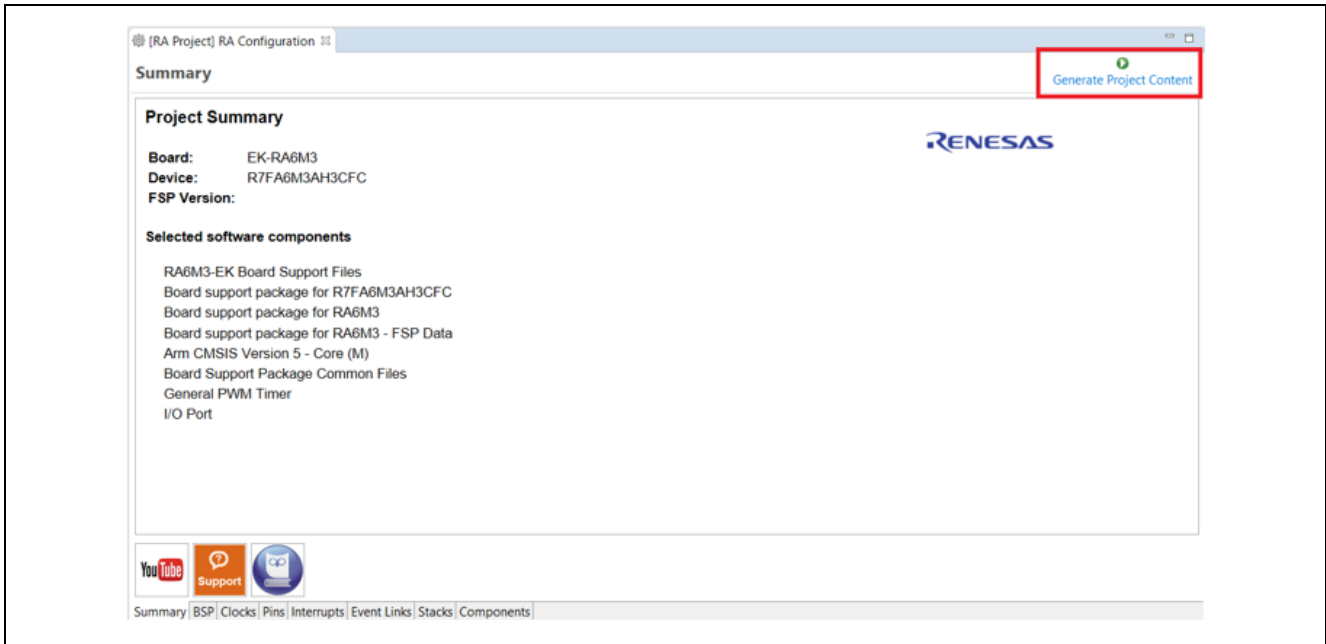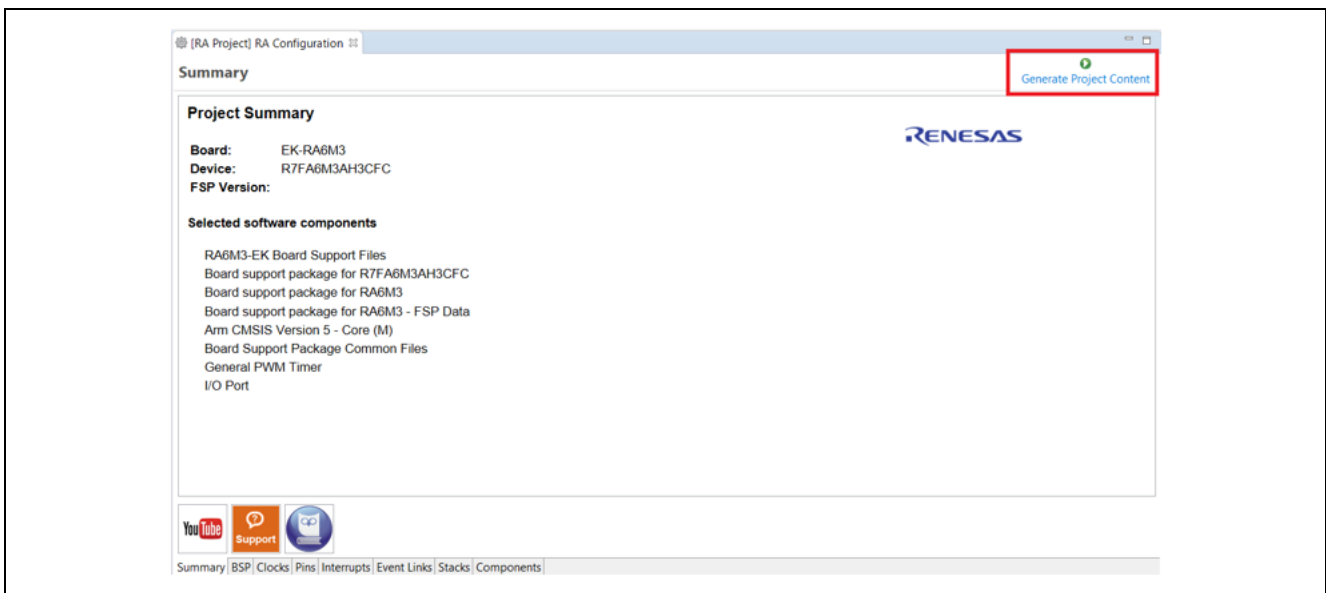

Figure 24. Clicking the Generate Project Content

8. After clicking **Generate Project Content** in the RA Smart Configurator, return to IAR EWARM.
9. Changes to the RA configuration will be reflected in the EWARM project.

4.3 Building and Running the project

Refer to FSP Documentation for steps on building and running the project.

Website and Support

Visit the following vanity URLs to learn about key elements of the RA family, download components and related documentation, and get support.

RA Product Information	www.renesas.com/ra
RA Product Support Forum	www.renesas.com/ra/forum
RA Flexible Software Package	www.renesas.com/FSP
Renesas Support	www.renesas.com/support

Revision History

		Description	
Rev.	**Date**	**Page**	**Summary**
1.00	Sep.15.20	—	First release document

Notice

1. Descriptions of circuits, software and other related information in this document are provided only to illustrate the operation of semiconductor products and application examples. You are fully responsible for the incorporation or any other use of the circuits, software, and information in the design of your product or system. Renesas Electronics disclaims any and all liability for any losses and damages incurred by you or third parties arising from the use of these circuits, software, or information.
2. Renesas Electronics hereby expressly disclaims any warranties against and liability for infringement or any other claims involving patents, copyrights, or other intellectual property rights of third parties, by or arising from the use of Renesas Electronics products or technical information described in this document, including but not limited to, the product data, drawings, charts, programs, algorithms, and application examples.
3. No license, express, implied or otherwise, is granted hereby under any patents, copyrights or other intellectual property rights of Renesas Electronics or others.
4. You shall not alter, modify, copy, or reverse engineer any Renesas Electronics product, whether in whole or in part. Renesas Electronics disclaims any and all liability for any losses or damages incurred by you or third parties arising from such alteration, modification, copying or reverse engineering.
5. Renesas Electronics products are classified according to the following two quality grades: "Standard" and "High Quality". The intended applications for each Renesas Electronics product depends on the product's quality grade, as indicated below.
   "Standard": Computers; office equipment; communications equipment; test and measurement equipment; audio and visual equipment; home electronic appliances; machine tools; personal electronic equipment; industrial robots; etc.
   "High Quality": Transportation equipment (automobiles, trains, ships, etc.); traffic control (traffic lights); large-scale communication equipment; key financial terminal systems; safety control equipment; etc.
   Unless expressly designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not intended or authorized for use in products or systems that may pose a direct threat to human life or bodily injury (artificial life support devices or systems; surgical implantations; etc.), or may cause serious property damage (space system; undersea repeaters; nuclear power control systems; aircraft control systems; key plant systems; military equipment; etc.). Renesas Electronics disclaims any and all liability for any damages or losses incurred by you or any third parties arising from the use of any Renesas Electronics product that is inconsistent with any Renesas Electronics data sheet, user's manual or other Renesas Electronics document.
6. When using Renesas Electronics products, refer to the latest product information (data sheets, user's manuals, application notes, "General Notes for Handling and Using Semiconductor Devices" in the reliability handbook, etc.), and ensure that usage conditions are within the ranges specified by Renesas Electronics with respect to maximum ratings, operating power supply voltage range, heat dissipation characteristics, installation, etc. Renesas Electronics disclaims any and all liability for any malfunctions, failure or accident arising out of the use of Renesas Electronics products outside of such specified ranges.
7. Although Renesas Electronics endeavors to improve the quality and reliability of Renesas Electronics products, semiconductor products have specific characteristics, such as the occurrence of failure at a certain rate and malfunctions under certain use conditions. Unless designated as a high reliability product or a product for harsh environments in a Renesas Electronics data sheet or other Renesas Electronics document, Renesas Electronics products are not subject to radiation resistance design. You are responsible for implementing safety measures to guard against the possibility of bodily injury, injury or damage caused by fire, and/or danger to the public in the event of a failure or malfunction of Renesas Electronics products, such as safety design for hardware and software, including but not limited to redundancy, fire control and malfunction prevention, appropriate treatment for aging degradation or any other appropriate measures. Because the evaluation of microcomputer software alone is very difficult and impractical, you are responsible for evaluating the safety of the final products or systems manufactured by you.
8. Please contact a Renesas Electronics sales office for details as to environmental matters such as the environmental compatibility of each Renesas Electronics product. You are responsible for carefully and sufficiently investigating applicable laws and regulations that regulate the inclusion or use of controlled substances, including without limitation, the EU RoHS Directive, and using Renesas Electronics products in compliance with all these applicable laws and regulations. Renesas Electronics disclaims any and all liability for damages or losses occurring as a result of your noncompliance with applicable laws and regulations.
9. Renesas Electronics products and technologies shall not be used for or incorporated into any products or systems whose manufacture, use, or sale is prohibited under any applicable domestic or foreign laws or regulations. You shall comply with any applicable export control laws and regulations promulgated and administered by the governments of any countries asserting jurisdiction over the parties or transactions.
10. It is the responsibility of the buyer or distributor of Renesas Electronics products, or any other party who distributes, disposes of, or otherwise sells or transfers the product to a third party, to notify such third party in advance of the contents and conditions set forth in this document.
11. This document shall not be reprinted, reproduced or duplicated in any form, in whole or in part, without prior written consent of Renesas Electronics.
12. Please contact a Renesas Electronics sales office if you have any questions regarding the information contained in this document or Renesas Electronics products.

(Note1)   "Renesas Electronics" as used in this document means Renesas Electronics Corporation and also includes its directly or indirectly controlled subsidiaries.
(Note2)   "Renesas Electronics product(s)" means any product developed or manufactured by or for Renesas Electronics.

(Rev.4.0-1 November 2017)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,
Koto-ku, Tokyo 135-0061, Japan
www.renesas.com

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.

Contact information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit:
www.renesas.com/contact/.