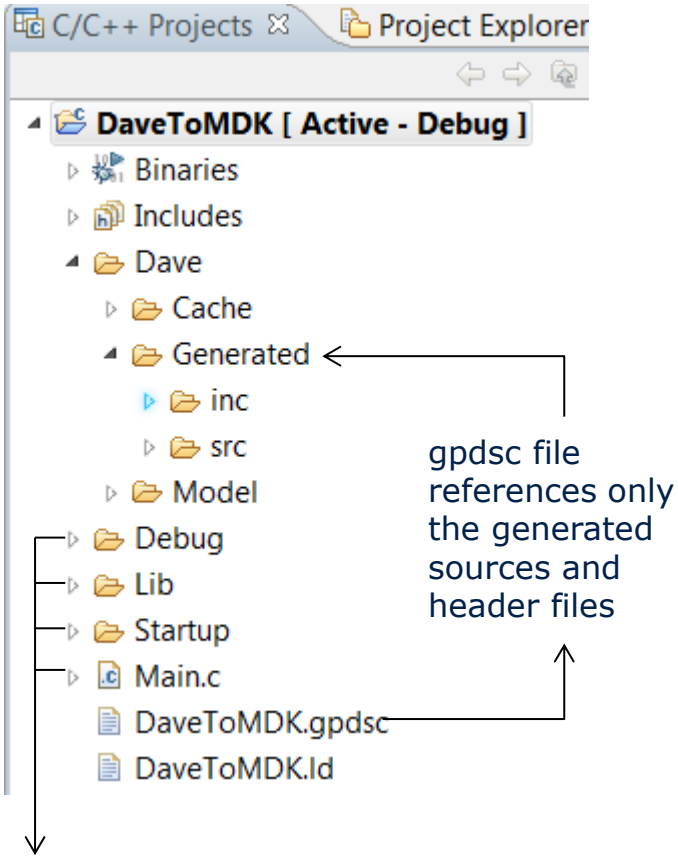
Tutorial to Import DAVE™ version 3 Generated Library Sources to ARM® MDK Using CMSIS® PACK

Version 3, July, 2015

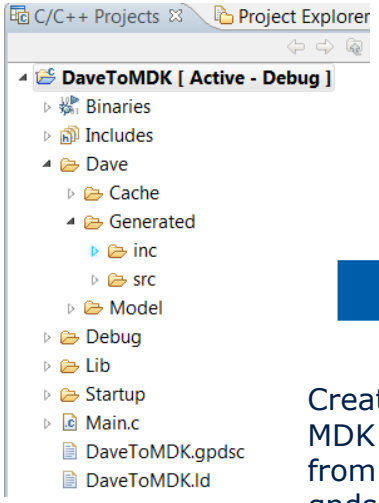
Purpose: Import the DAVE™ v3 generated source files to ARM MDK, no full project migration

DAVE™ project outline

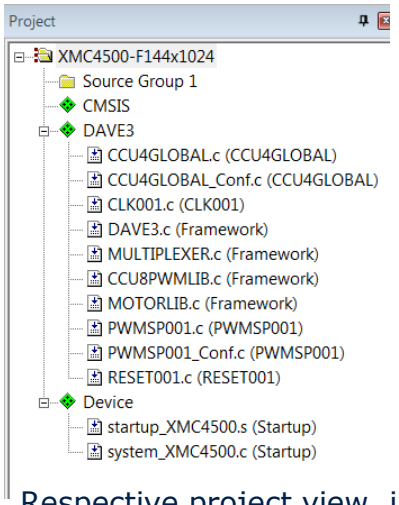


- DAVE™ is a free eclipse based development platform that can generate application libraries from DAVE™ Apps.
- The generated code is included in a DAVE™ project.
- DAVE™ v3.1.10 can optionally generate a CMSIS Pack compliant gpdsc file that references all generated library sources (c sources and header files) to a respective MDK µVision project)
- The gpdsc file references only the generated sources and headers, It is expected that the user develops the user code afterwards in MDK
- Not the full DAVE™ project is ported; to port the full DAVE™ project the existing user code has to be manually referenced

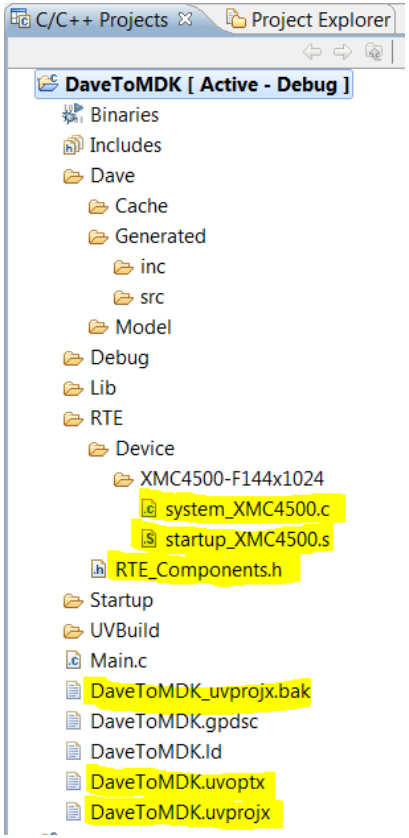
Concept



Creating a MDK project from the gpdsc file



Respective project view in MDK



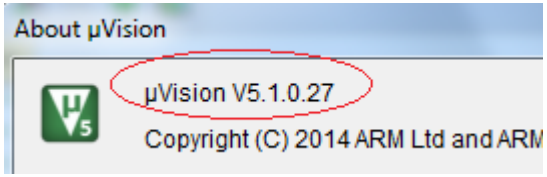
MDK relevant files (yellow) added to the DAVE project.

- In addition to the references of generated DAVE™ code the gpdsc file (an xml file) contains conditions for the selected target MCU and preprocessor commands in RTE_Components.h file
- Double click on the gpdsc file will automatically create a ARM MDK project for the target MCU defined in the gpdsc file, and ARM MDK compliant startup files for the target MCU will be added to the project
- These files are added in the project folder of the DAVE™ (eclipse) project; Build in DAVE™ will now create build error, this can be avoided excluding these files from build in the DAVE™ project

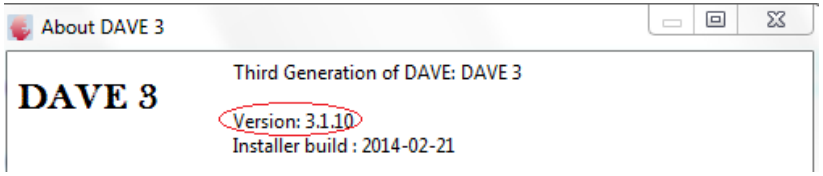
Prerequisites to Follow the Tutorial

- µVision **v5.10** ARM MDK

  Download a free version
  Infineon Device PACK **v1.5.0**



- DAVE™ v3.1.10, a PACK file with file extension ***gpdsc*** is created by code generation, which is dedicated for porting the DAVE™ project to ARM MDK
  Download DAVE



- The following pages provide a step wise description how to import the library sources configured and generated in DAVE™ to ARM MDK

Install Infineon Device PACK v1.5.0 (1/2)

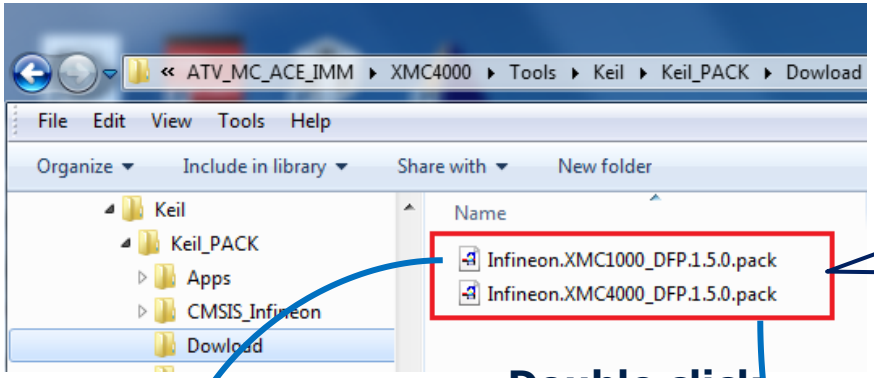
Important: just device PACK v1.5.0 or lower supports DAVE™ version 3 generated codes. From v1.5.0 the CMSIS files in MDK PACK are changed and incompatible with previous version.

To install PACK **v1.5.0** please firstly download the PACK here:

XMC1000:
http://media.infineon.com/mdk/Infineon.XMC1000_DFP.1.5.0.pack

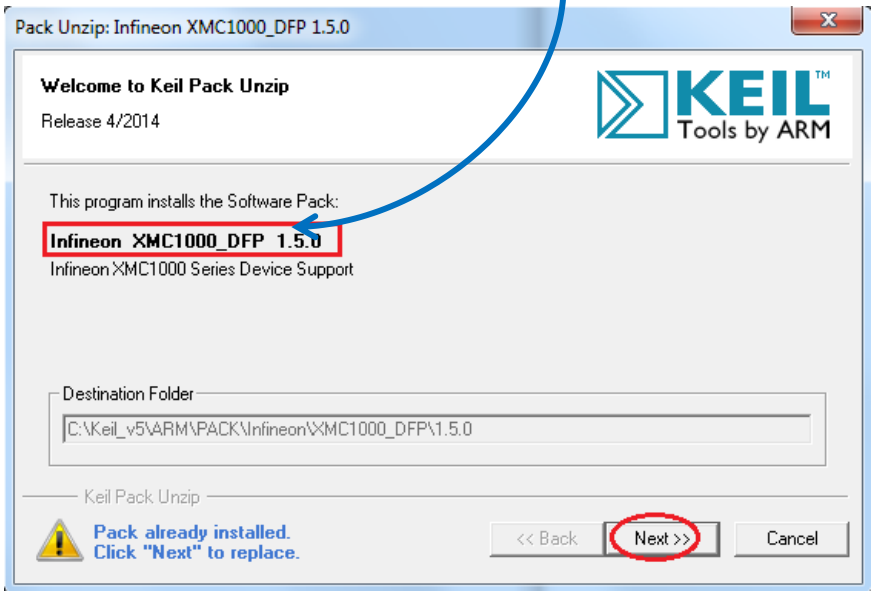
XMC4000:
http://media.infineon.com/mdk/Infineon.XMC4000_DFP.1.5.0.pack

Install Infineon Device PACK v1.5.0 (2/2)

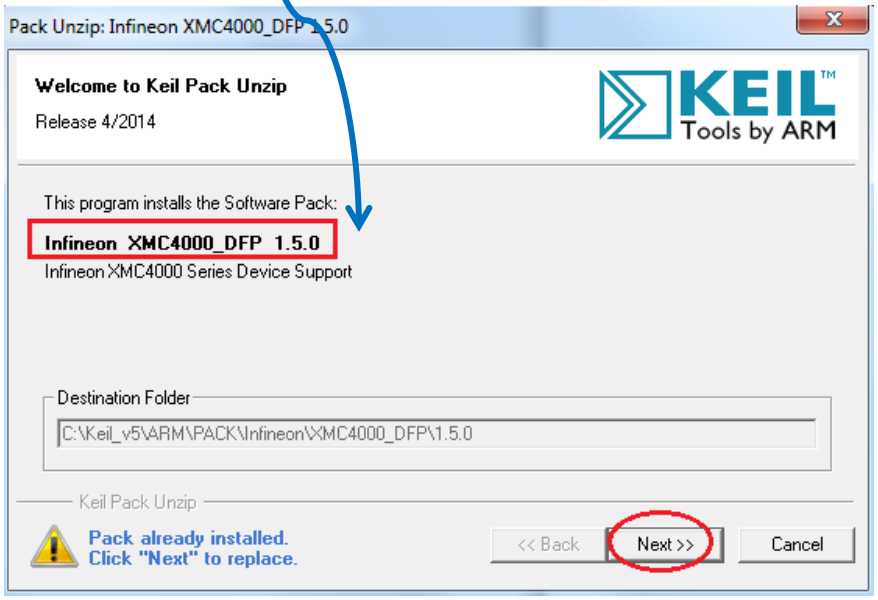


Downloaded PACK file

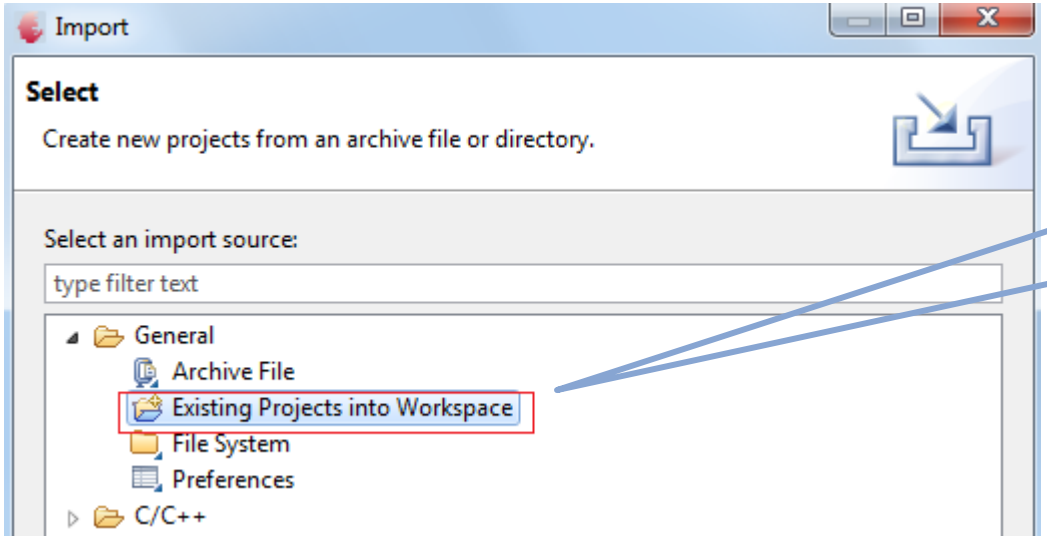
Double click
"Infienon_XMC1000_DFP_1.5.0.pack
install XMC1000 PACK"



Double click
"Infienon_XMC4000_DFP_1.5.0.pack
install XMC4000 PACK"



Import an Existing DAVE™ Project or Create a New DAVE™ Project with **DAVE 3.1.10**

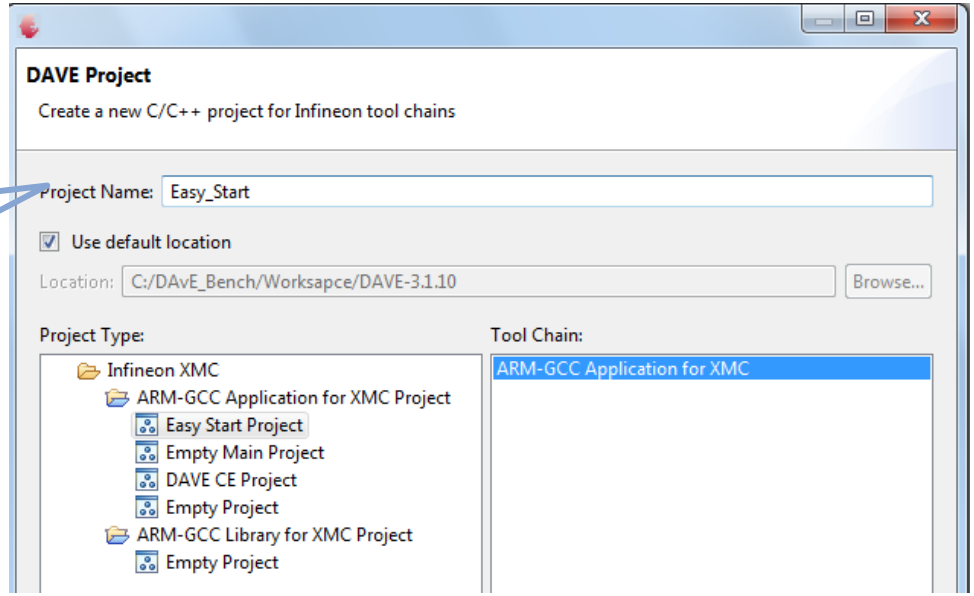


In case of existed project:

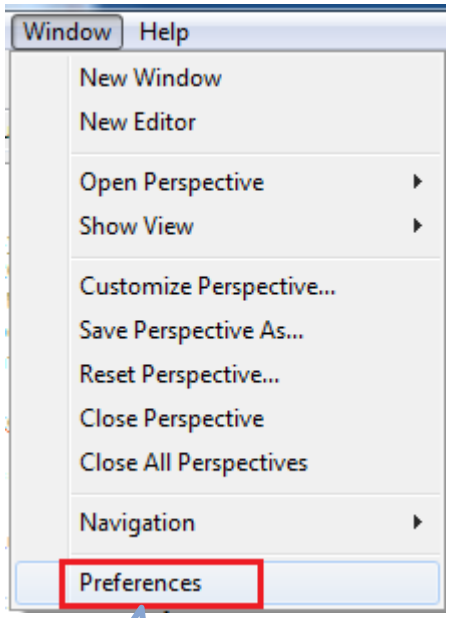
Step 1: import the existed project

In case of new project:

Step 2: define a new **DAVE CE** project

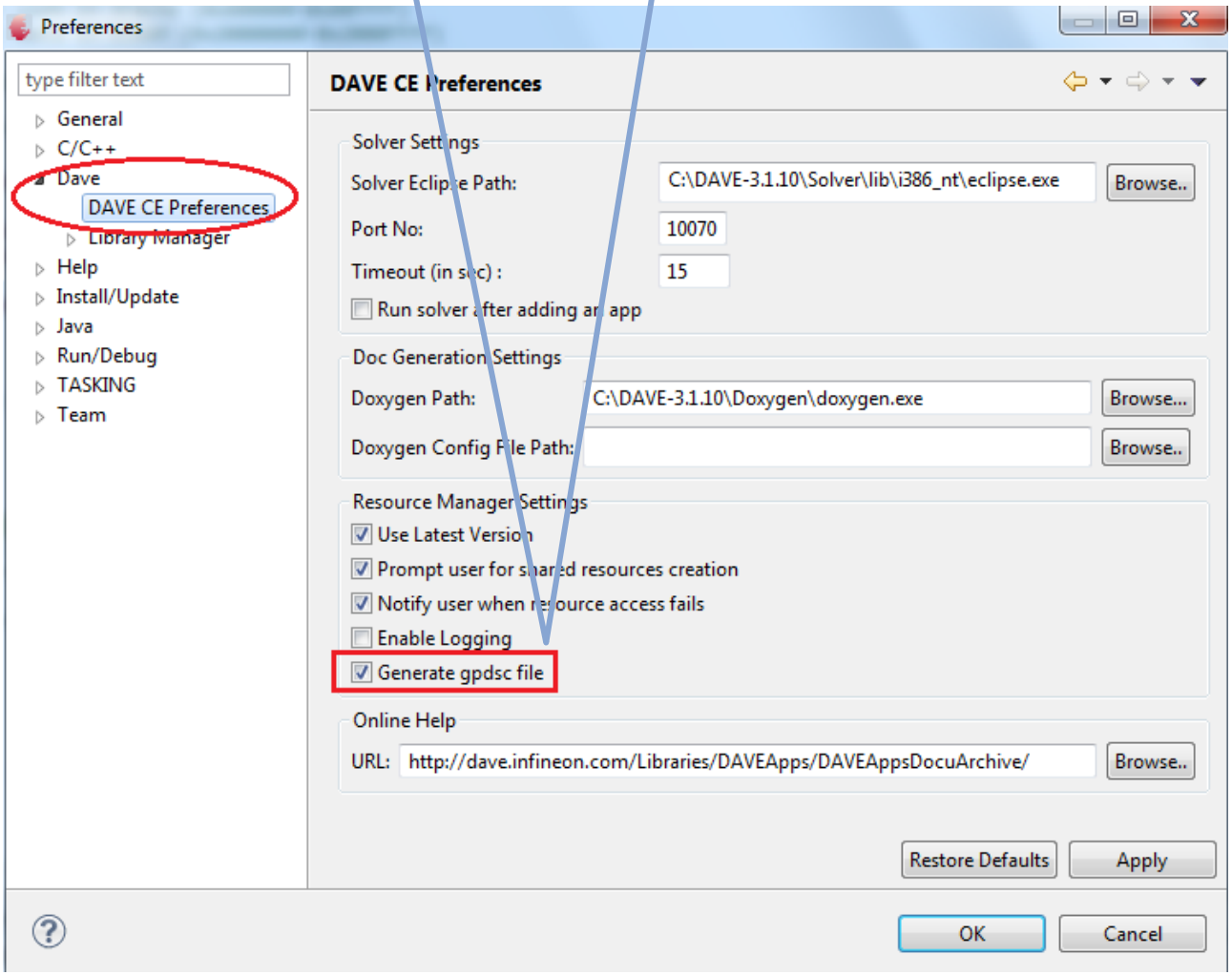


Enable “Generate gpdsc file” in DAVE™

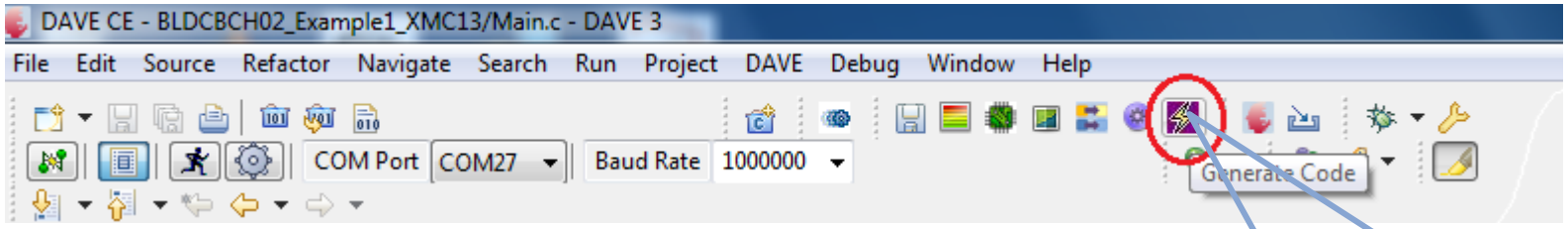


Step 1: open Preferences window

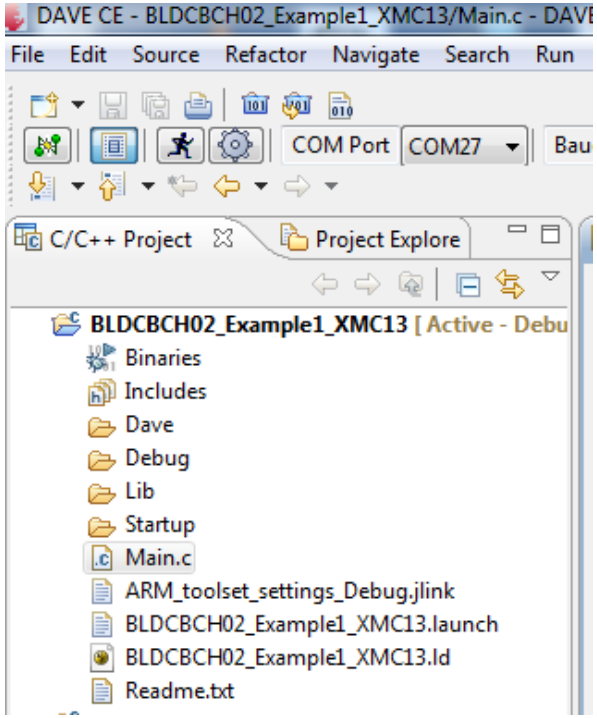
Step 2: select “generate gpdsc file”



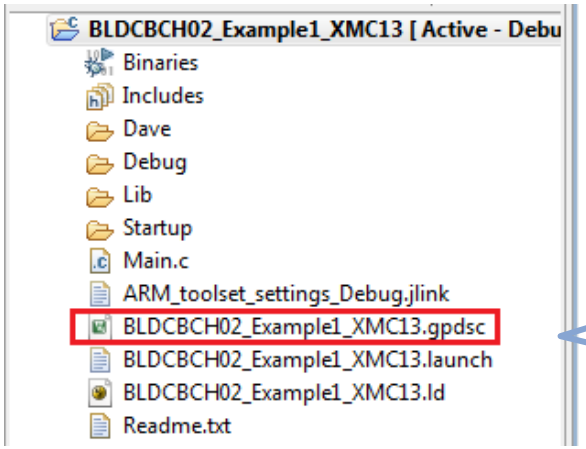
In Cases an Existing DAVE™ Example Project is Used



Step 1:
- **Re-generate** Code



Before code regeneration



After code regeneration

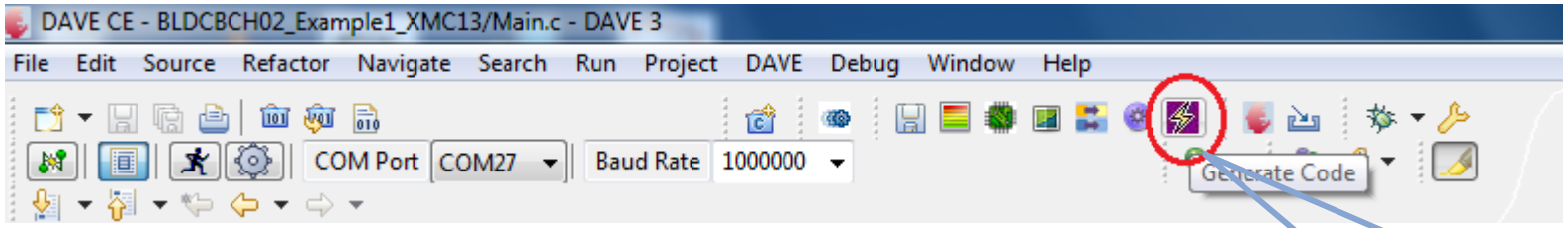
BLDCBCH02_Example1_XMC13.*gpdsc*

is generated.

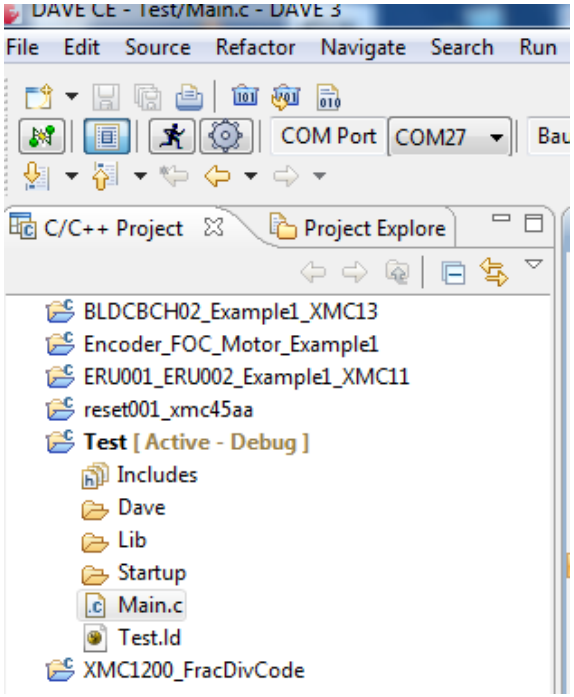
If required, existing user code (main.c) has to be manually added to the MDK project

In Case of New DAVE™ Project

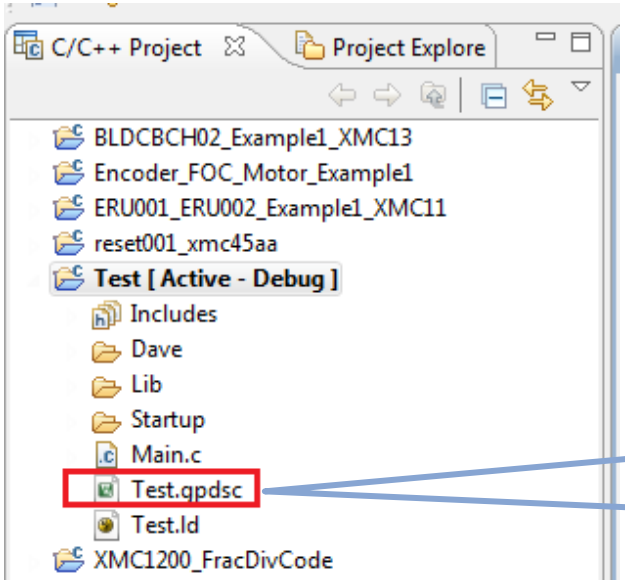
Note: Before continue with step 4.1 select and configure the required DAVE Apps



Step 1:
- **Generate** Code



Before code regeneration



Test.gpdsc is generated.

After code regeneration

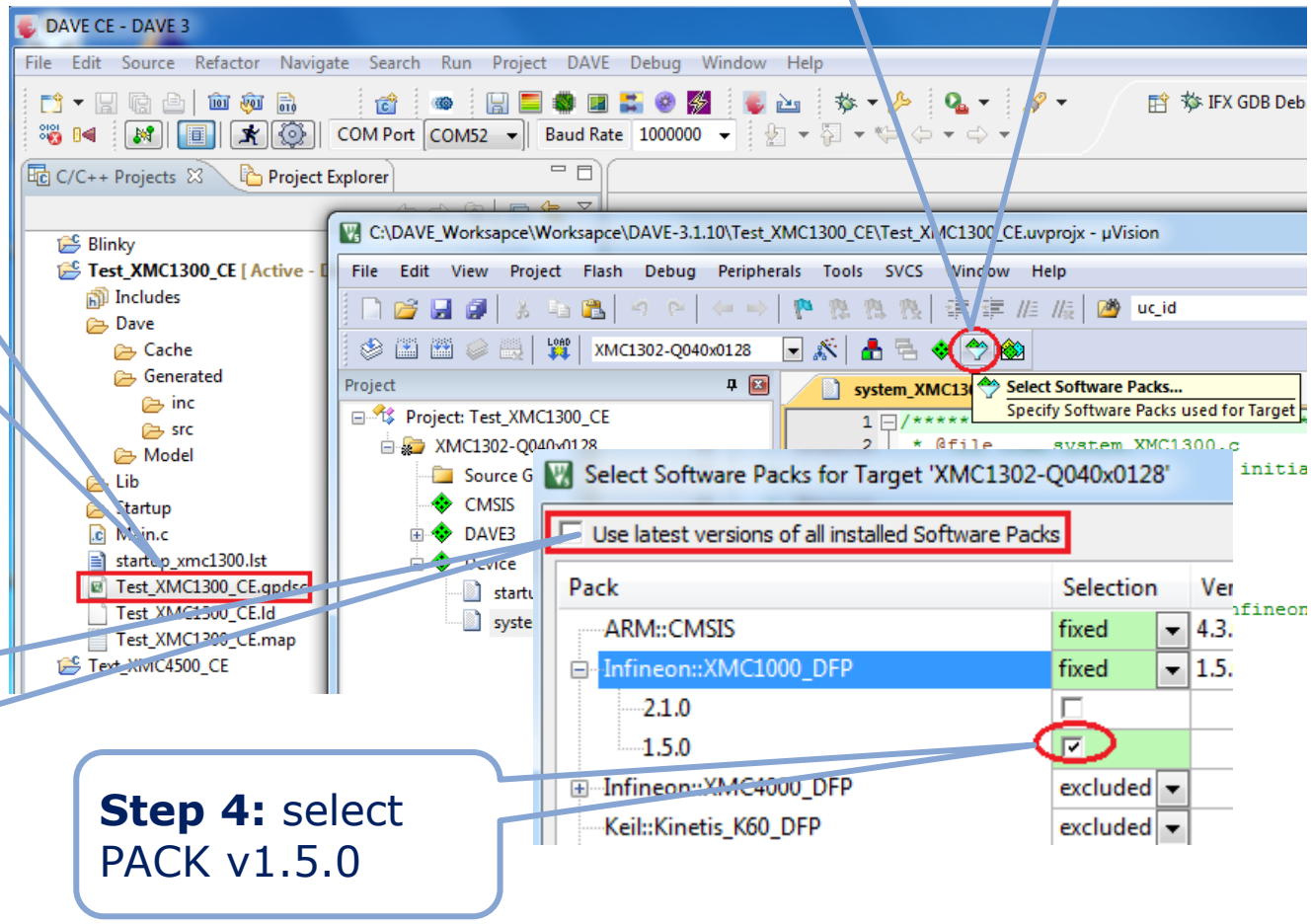
Open MDK Project and Select PACK v1.5.0 (1/3)

Step 1: double click **.gpdsc** file to open the Keil µVision

Step 2: click "Select Software Packs"

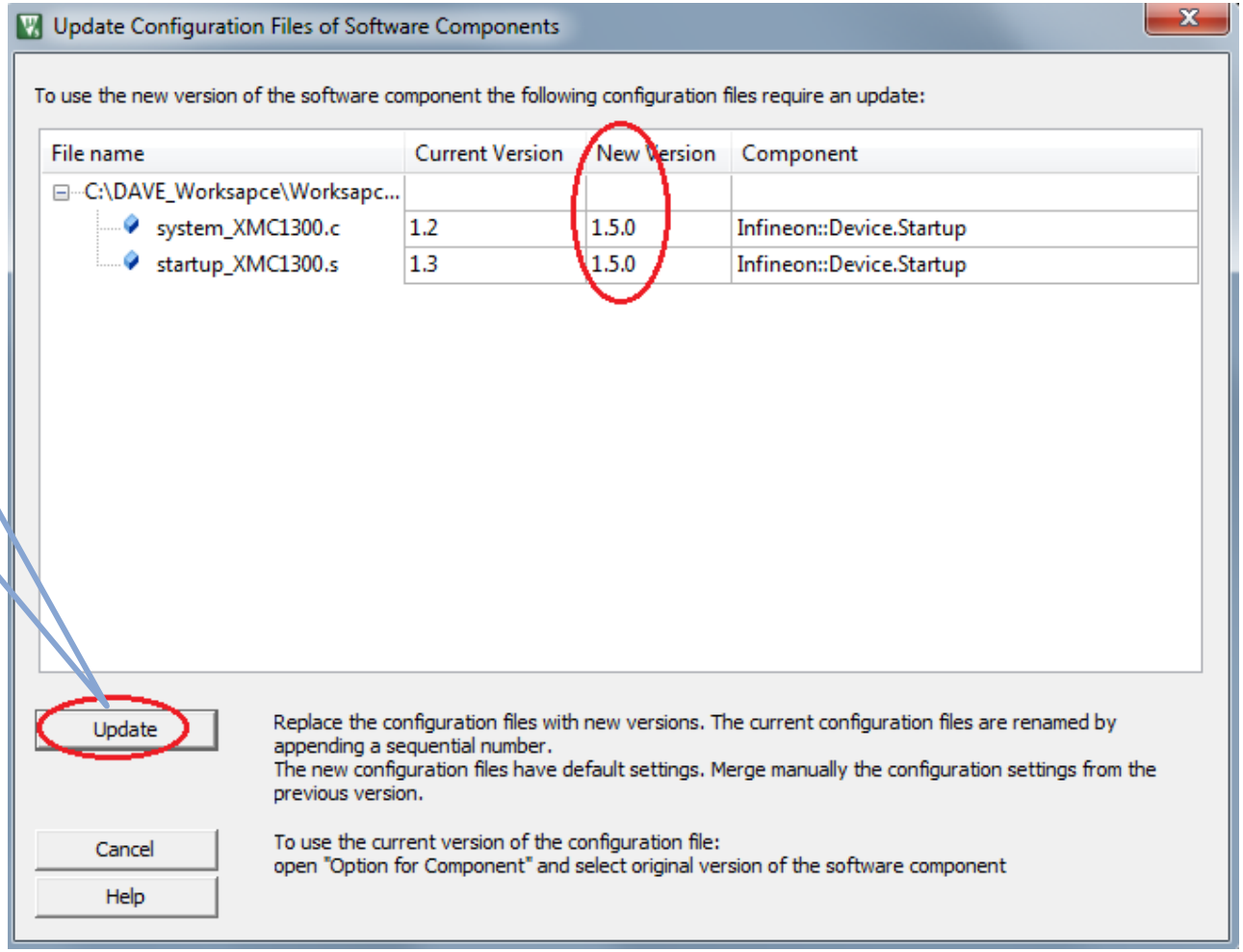
Step 3: deselect "use latest versions …."

Step 4: select PACK v1.5.0



Open MDK Project and Select PACK v1.5.0 (2/3)

Step 1: update the CMSIS files to PACK v1.5.0

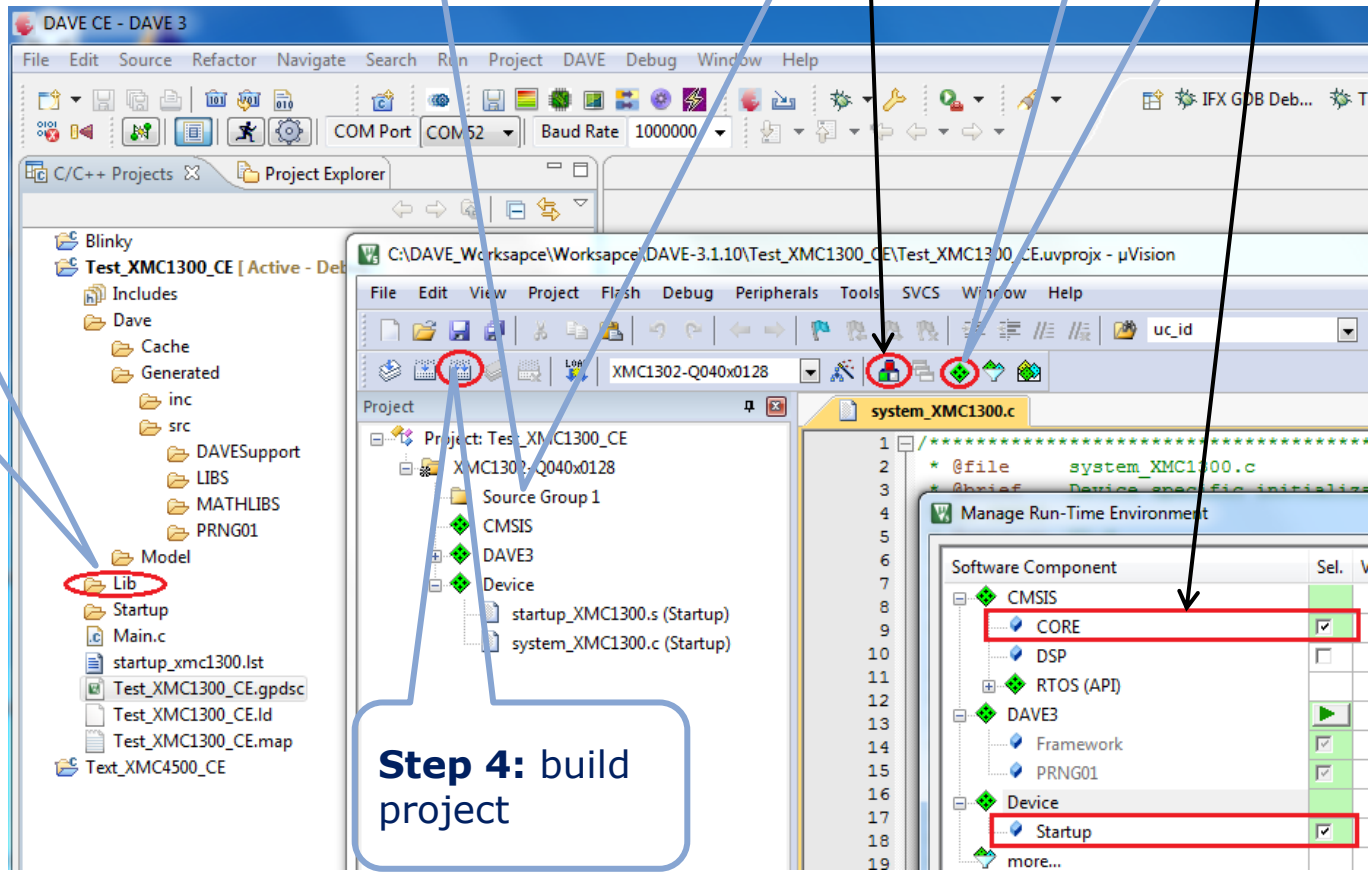


Open MDK Project and Select PACK v1.5.0 (3/3)

Step 2: add the application codes in "Source Group" of project
Important: *gpdsc* file just imports the DAVE generated codes into Keil MDK Project. The application codes must be manually added.

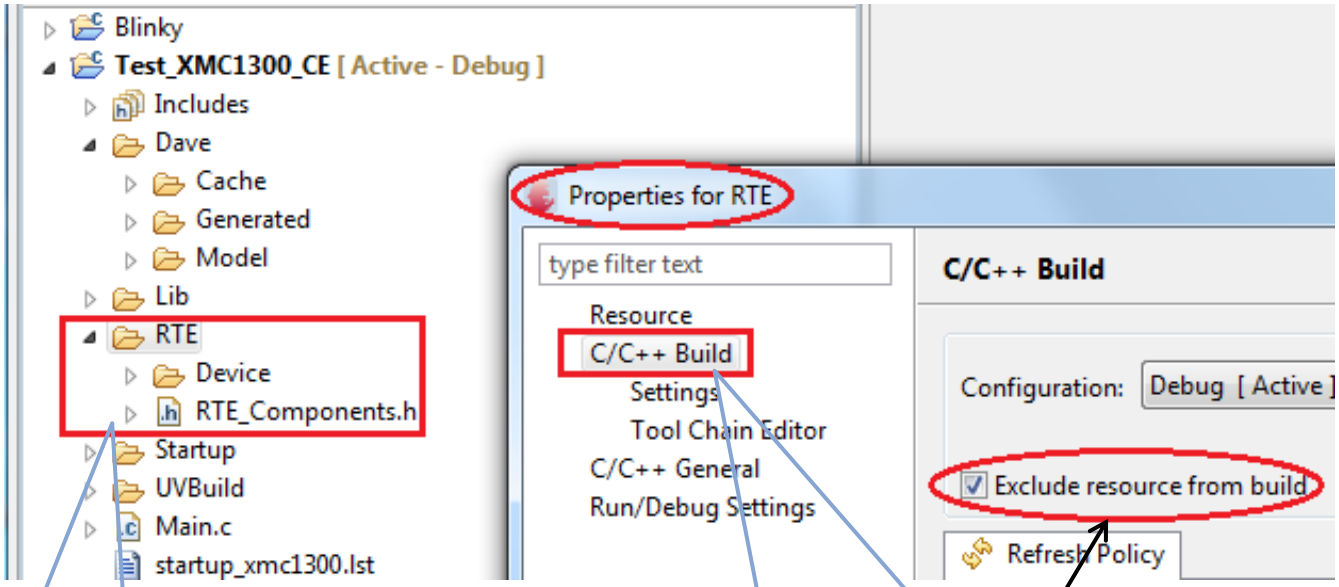
Step 1: check if CMSIS and Startup files are included

Step 3: Add the library contained in DAVE project into MDK project, if it is necessary.



Step 4: build project

If it is required to keep the project buildable in DAVE™: Exclude RTE folder from DAVE™ build



The folder "RTE" is created by Keil project, and **must be** excluded from DAVE3 project.

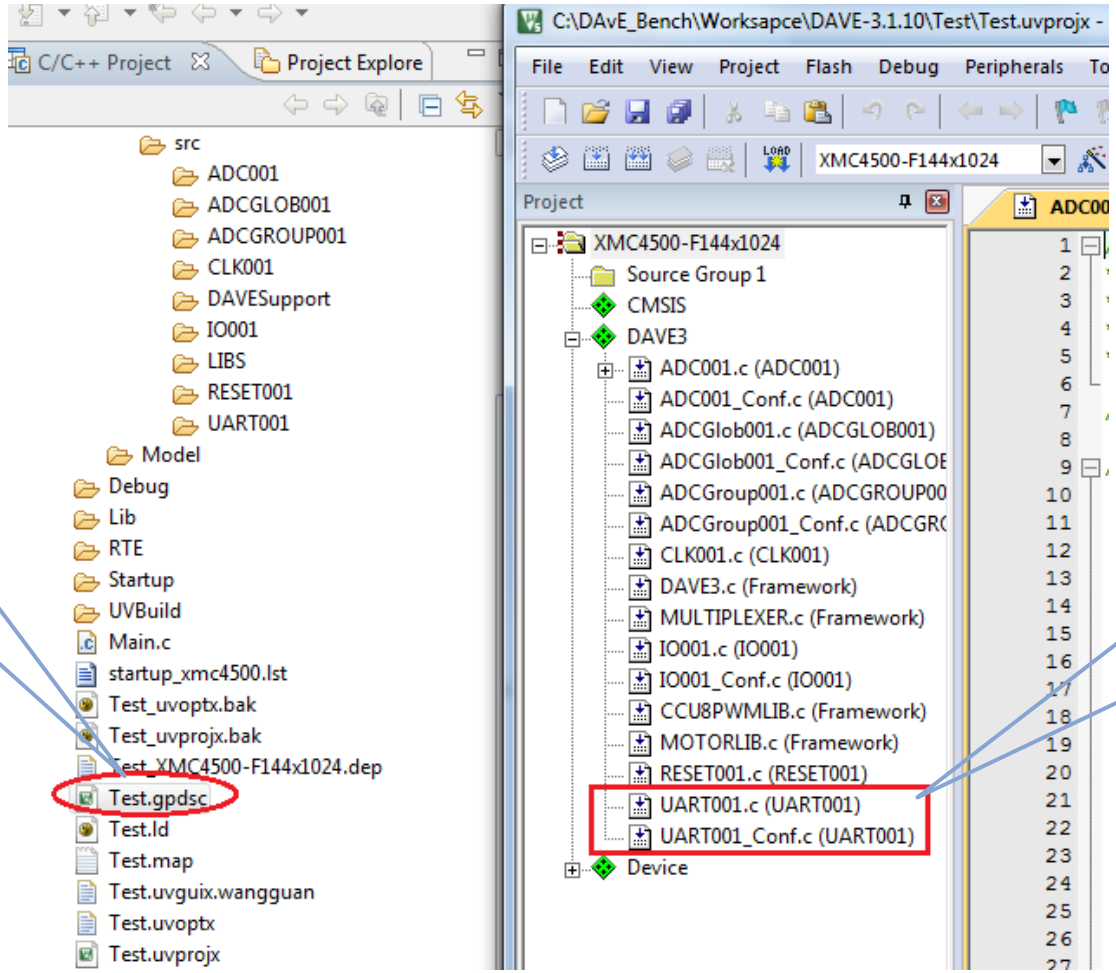
Step 1:

- open "Properties for RTE"
- go to "C/C++ Build"
- select "Exclude resource from build"

IF additional new DAVE™ Apps will be added to the DAVE™ project

This step is just needed, if the new DAVE™ Apps are added and the sources are regenerated in the DAVE™ project. In this case the new sources must be updated in the MDK project.

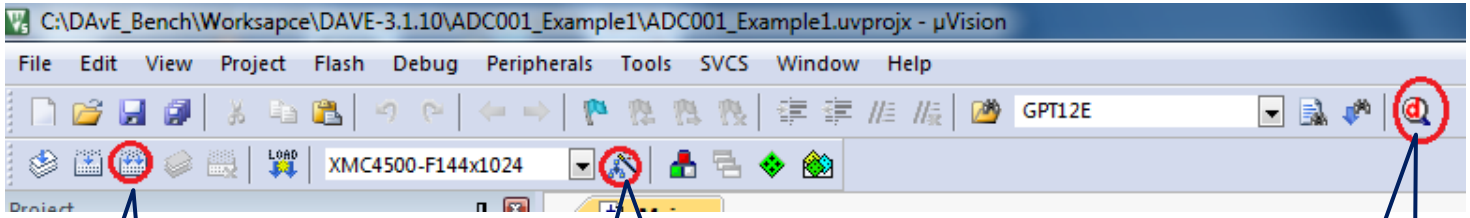
Step 1:
double click the
.gpdsc file



The new source files are added in Keil MDK project.

Build and download MDK project to a XMC4000/1000 Evaluation Board (1/2)

To make the MDK project work Segger JLINK v4.80f or higher should be installed. Furthermore, some steps need to be done manually as follows.

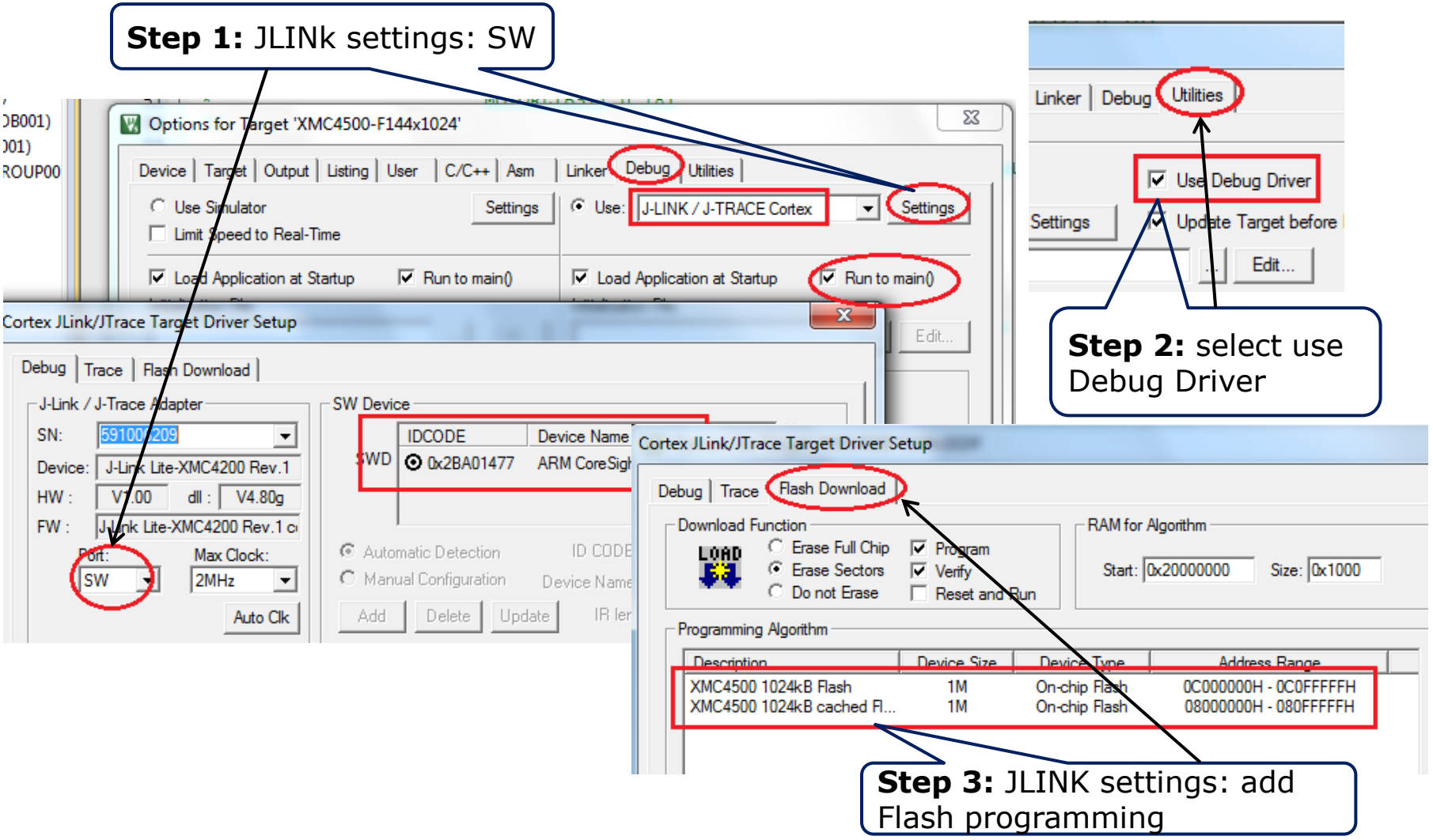


Step 1: Build project

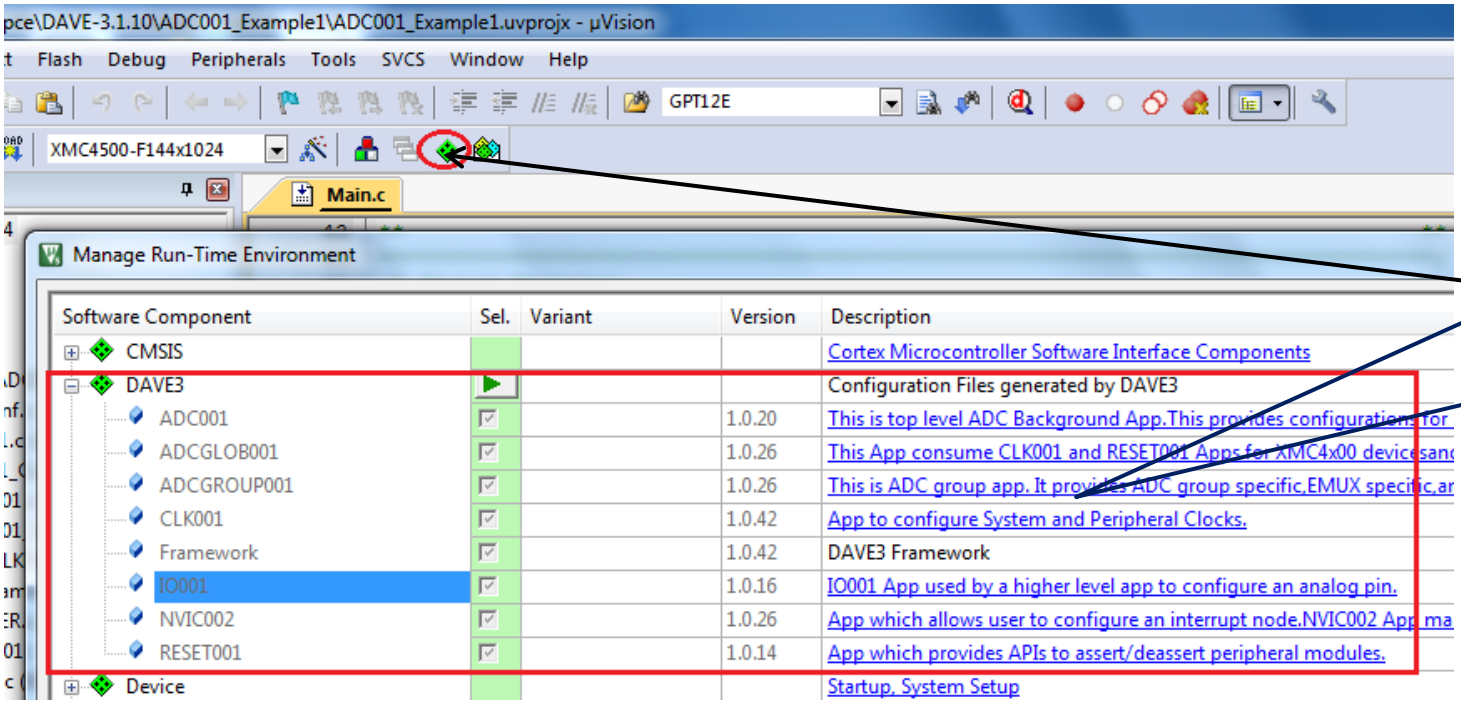
Step 2: select JLINK debugger

Step 3: Start debugger

Build and download MDK project to a XMC4000/1000 Evaluation Board (2/2)



Further Information



Here you can find the documents about DAVE3 Apps

- There is also an App-Note from Keil that describes the importing of the DAVE generated source files into MDK v5.10: http://www.keil.com/appnotes/docs/apnt_258.asp

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