Getting Started with TIVA TM4C123G LaunchPad

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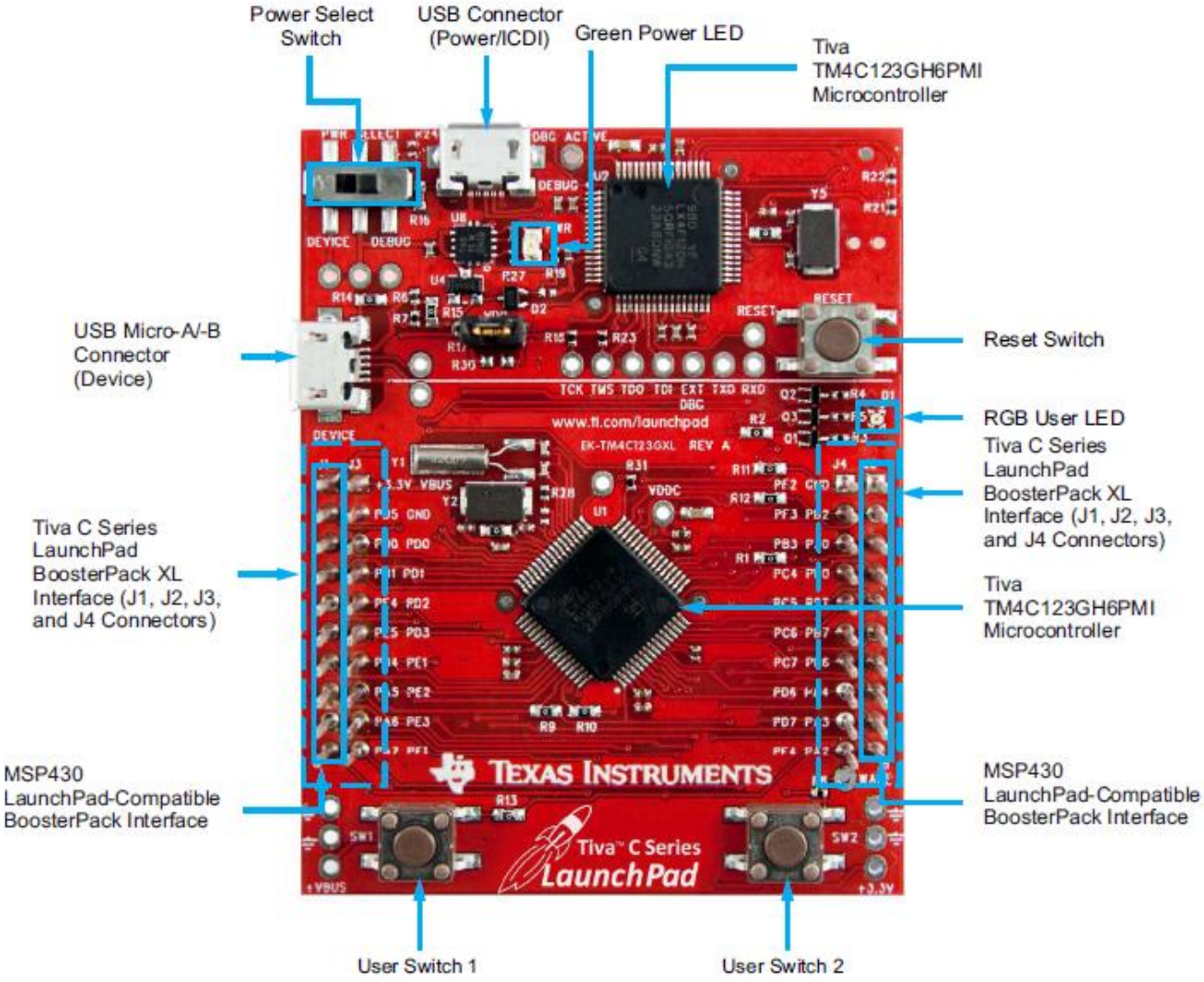
Types of Manuals

- **TIVA Launchpad manual**
  - Explains the board
- **TM4C123GH6PM manual**
  - Explains TIVA micro-controller
- **Cortex M4 processor manual**
  - Explains processor internals: registers, exceptions, instruction set etc
- **ARM Cortex v7-M architecture reference manual**
  - Explains Cortex M4 which is based on v7-M architecture

TIVA Launchpad



Getting Started with Keil µVision5

INTRODUCTION

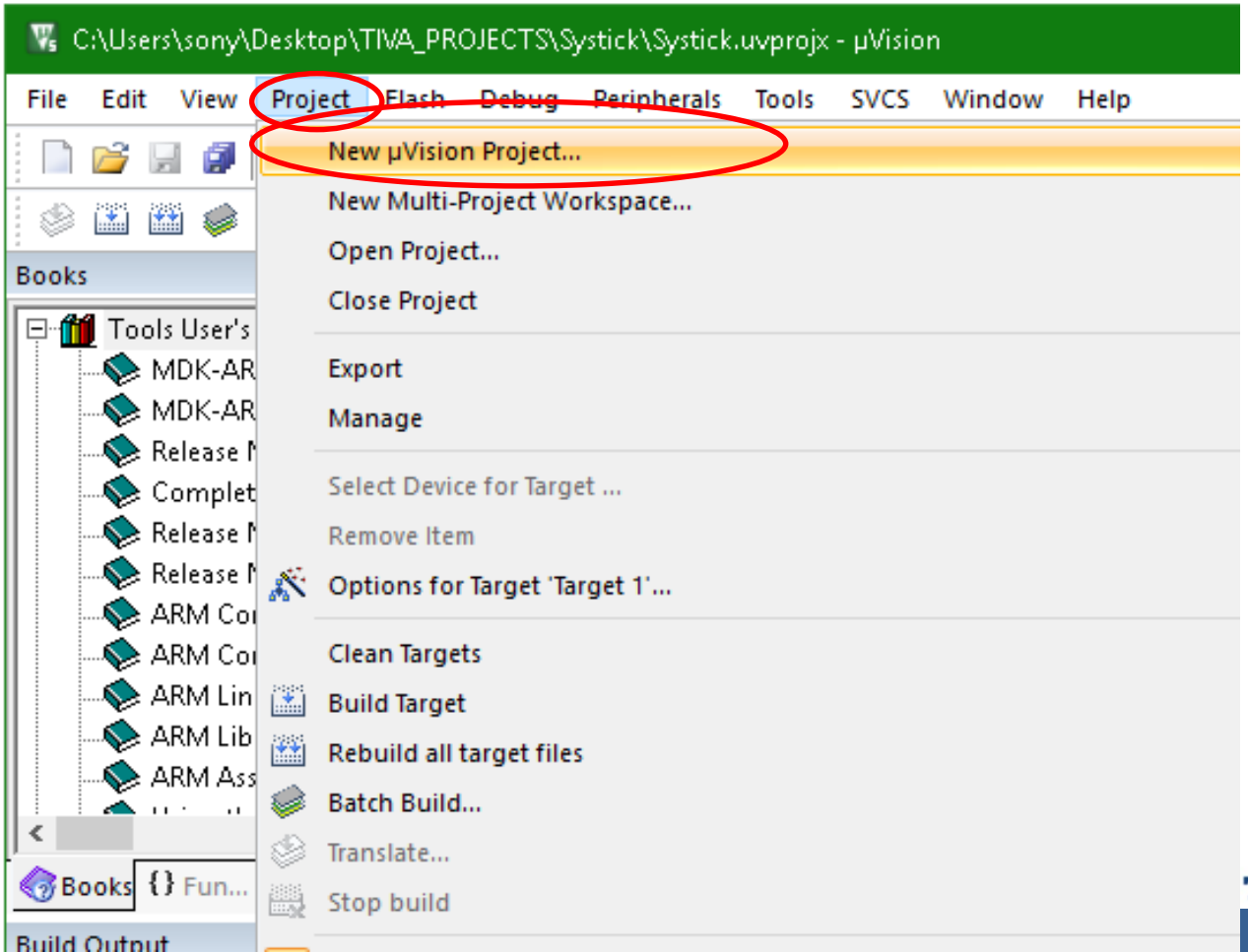
- Keil uVision is an IDE (Integrated Development Environment)
- Helps you build and compile programs.
- Keil uVision works both as an assembler and a compiler
- Code can be written in Assembly or C Language.
- Downloaded from ARM official website by filling a simple form
- https://www.keil.com/demo/eval/arm.htm#/DOWNLOAD

OBJECTIVES

- Create a Project using Keil µVision5
- Create your source files in C/C++ or Assembly
- Build your application with the Project Manager
- Debug and correct errors in source files, verify and optimize your application
- Download your code to Flash ROM or SRAM and test the linked application

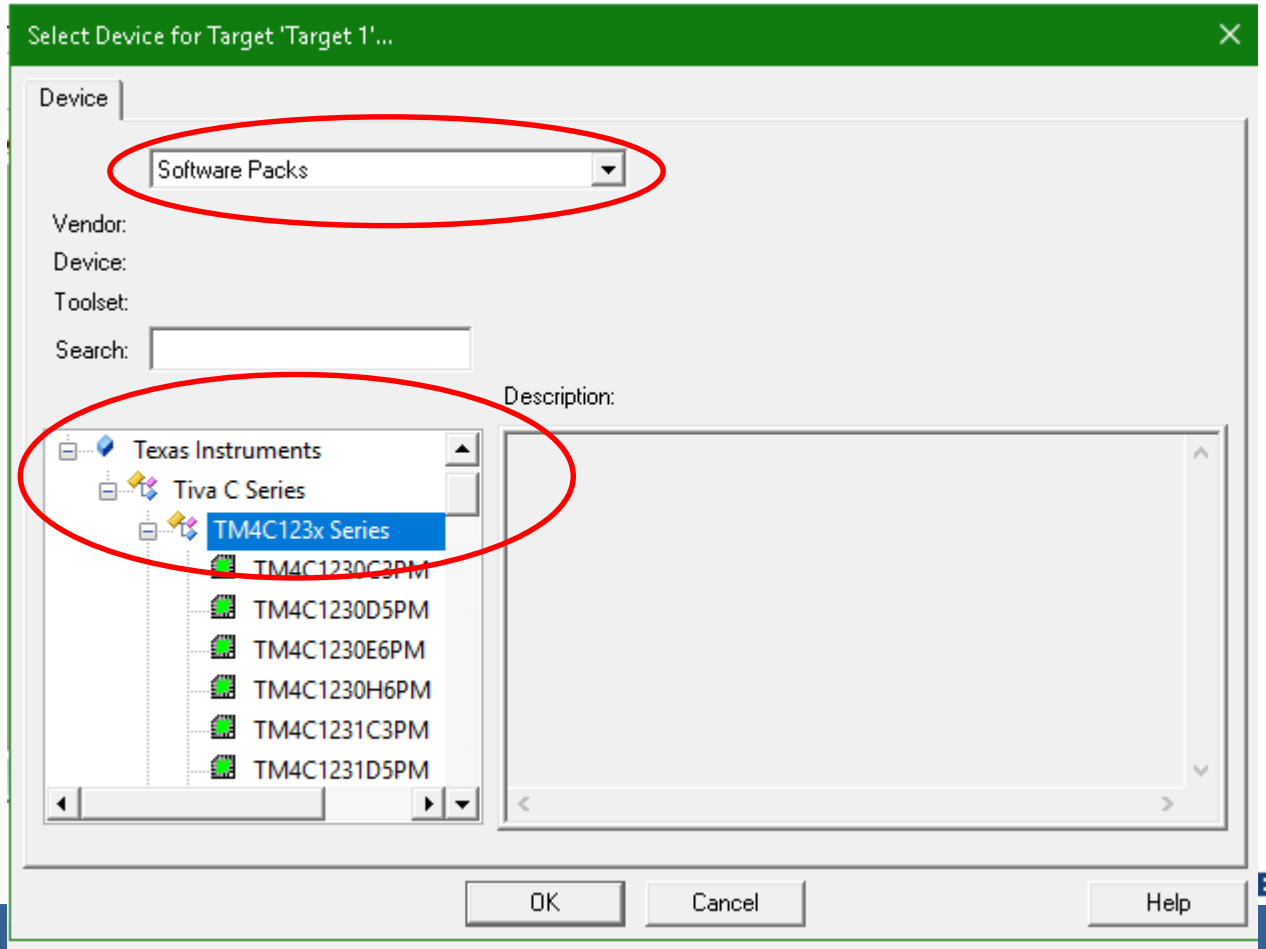
CREATING A NEW PROJECT

- Launch Keil uVision
- From menu, select Project→New uVision Project.



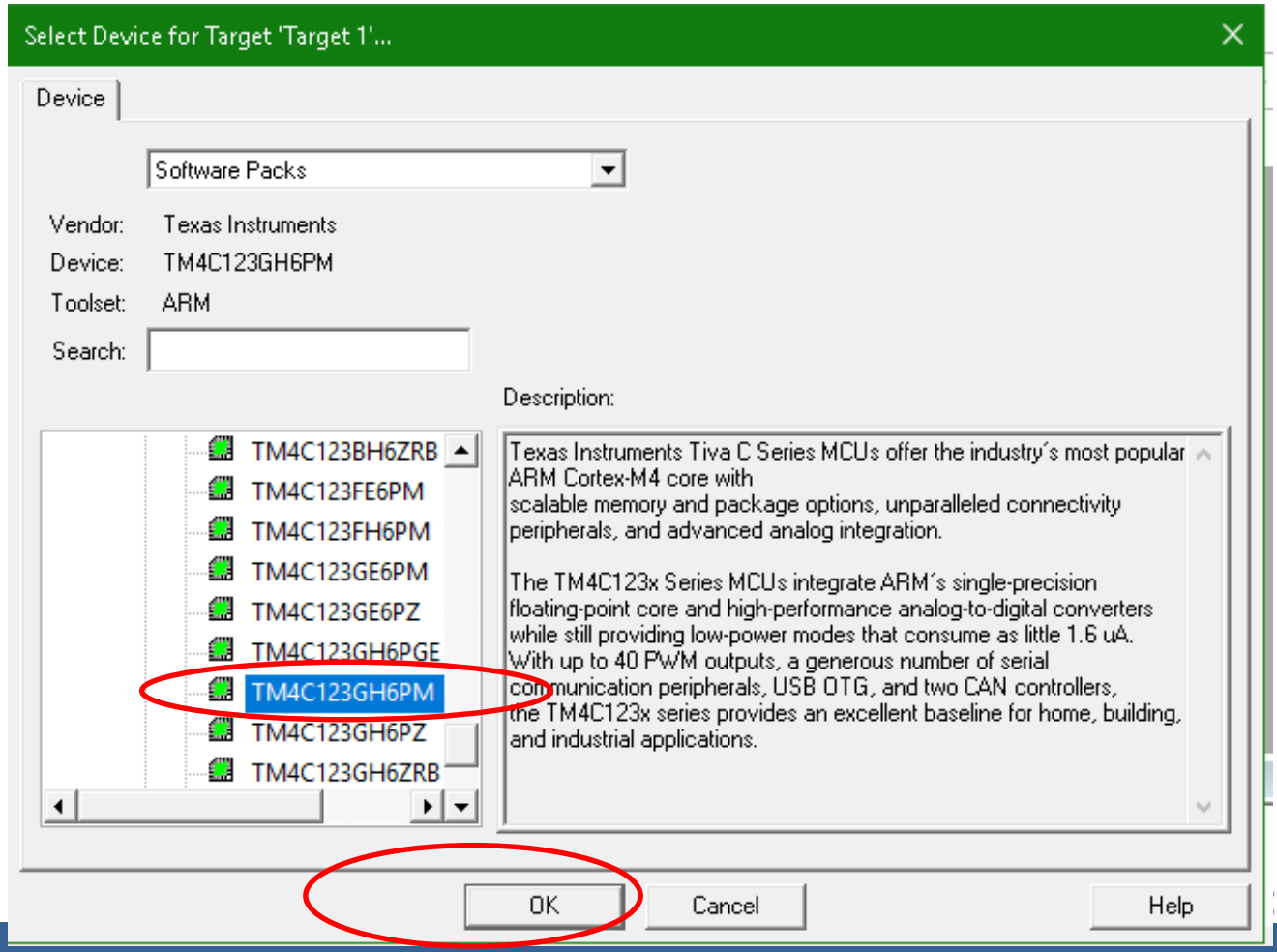
Cont.…

- Always create a new project in a separate folder
- Select the Required Microcontroller from pop-up window



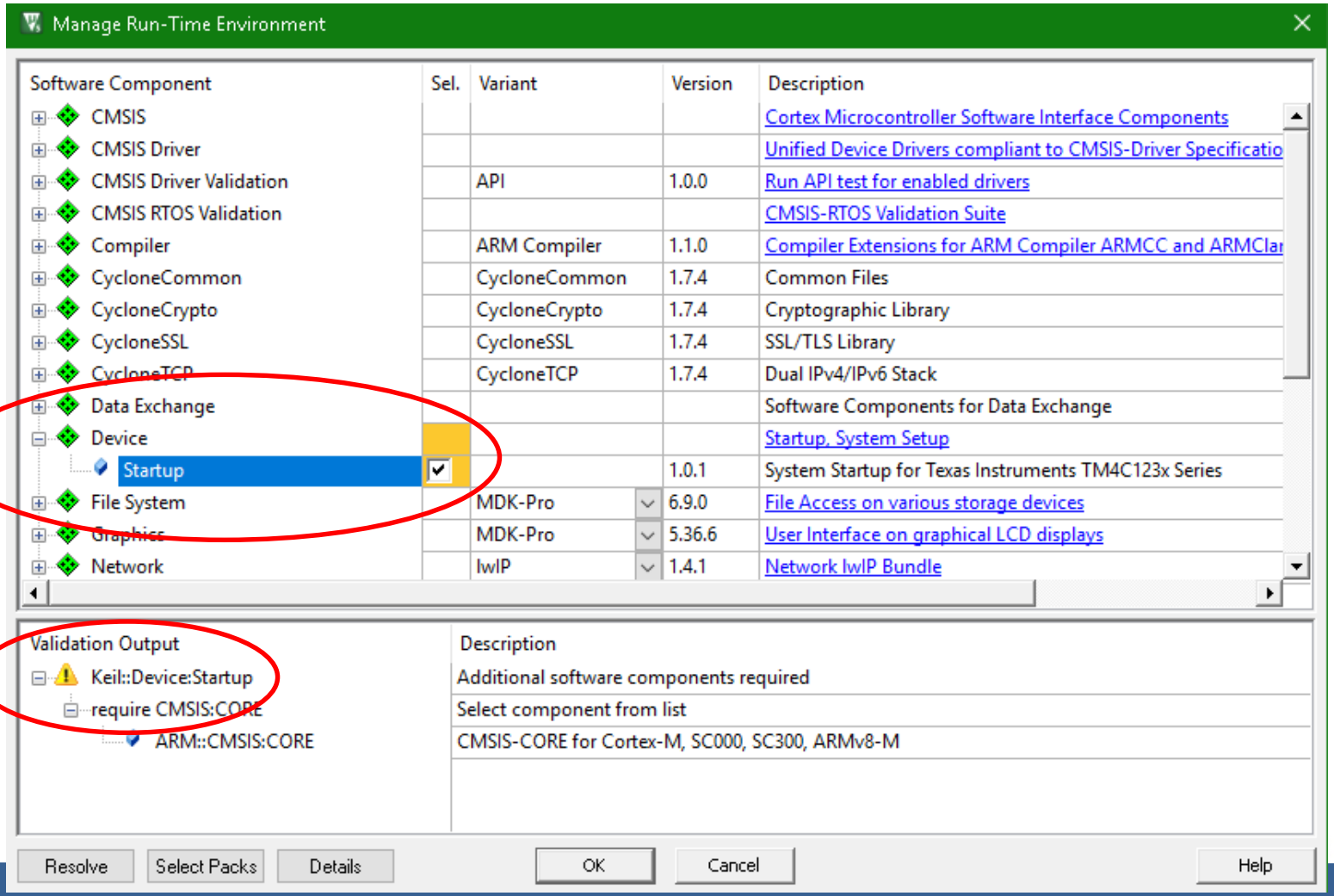
Cont.…

- ❑ Select the Required Microcontroller from pop-up window
- ❑ Click “OK”



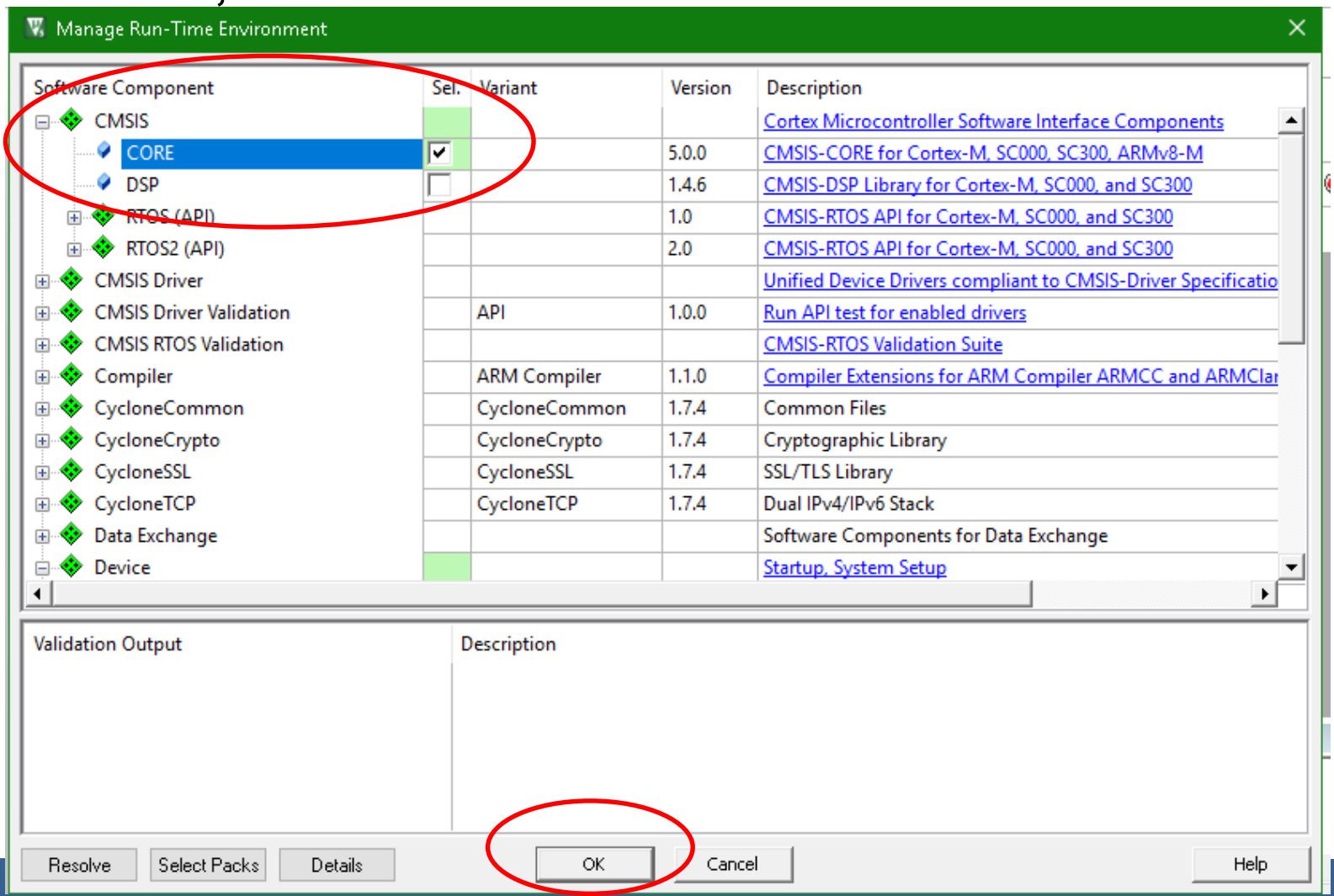
Cont.…

- Manage run time environment pop-up window will be opened
- Expand “Device”, Select “startup”



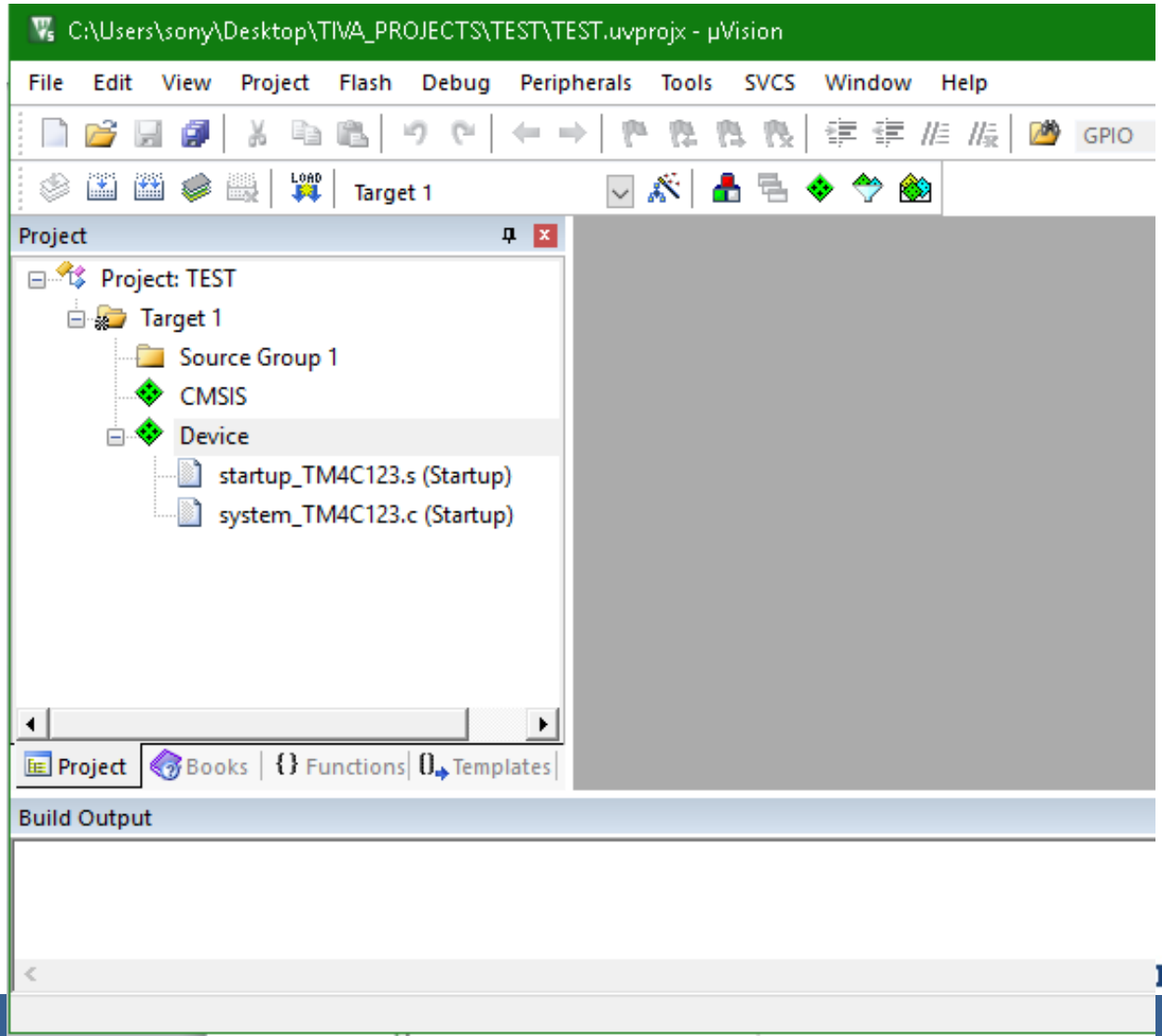
Cont.…

- In Manage run time environment window
- Expand “CMSIS”, Select “CORE”



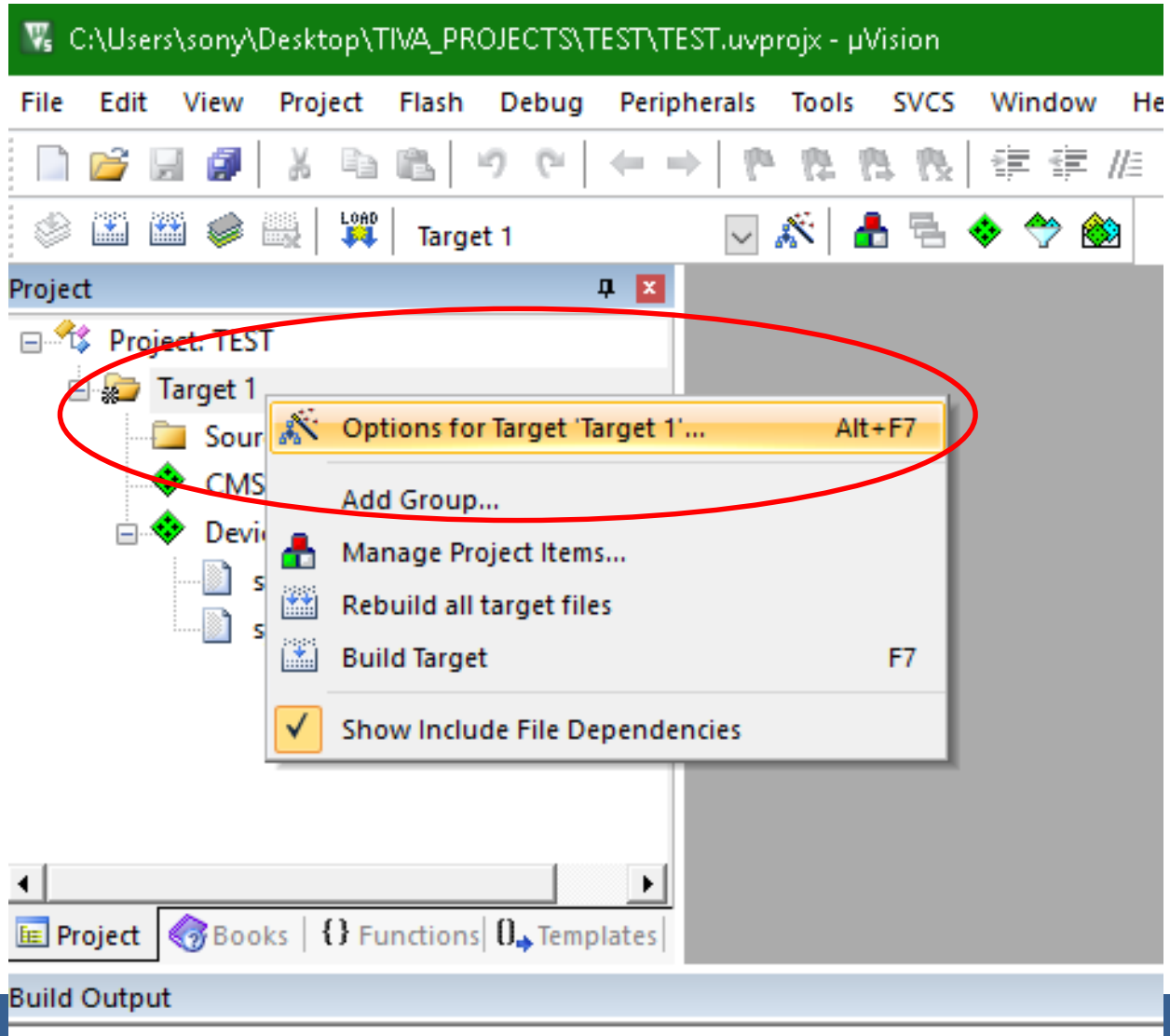
Cont.…

- Now window should be as shown in Fig below



Cont.…

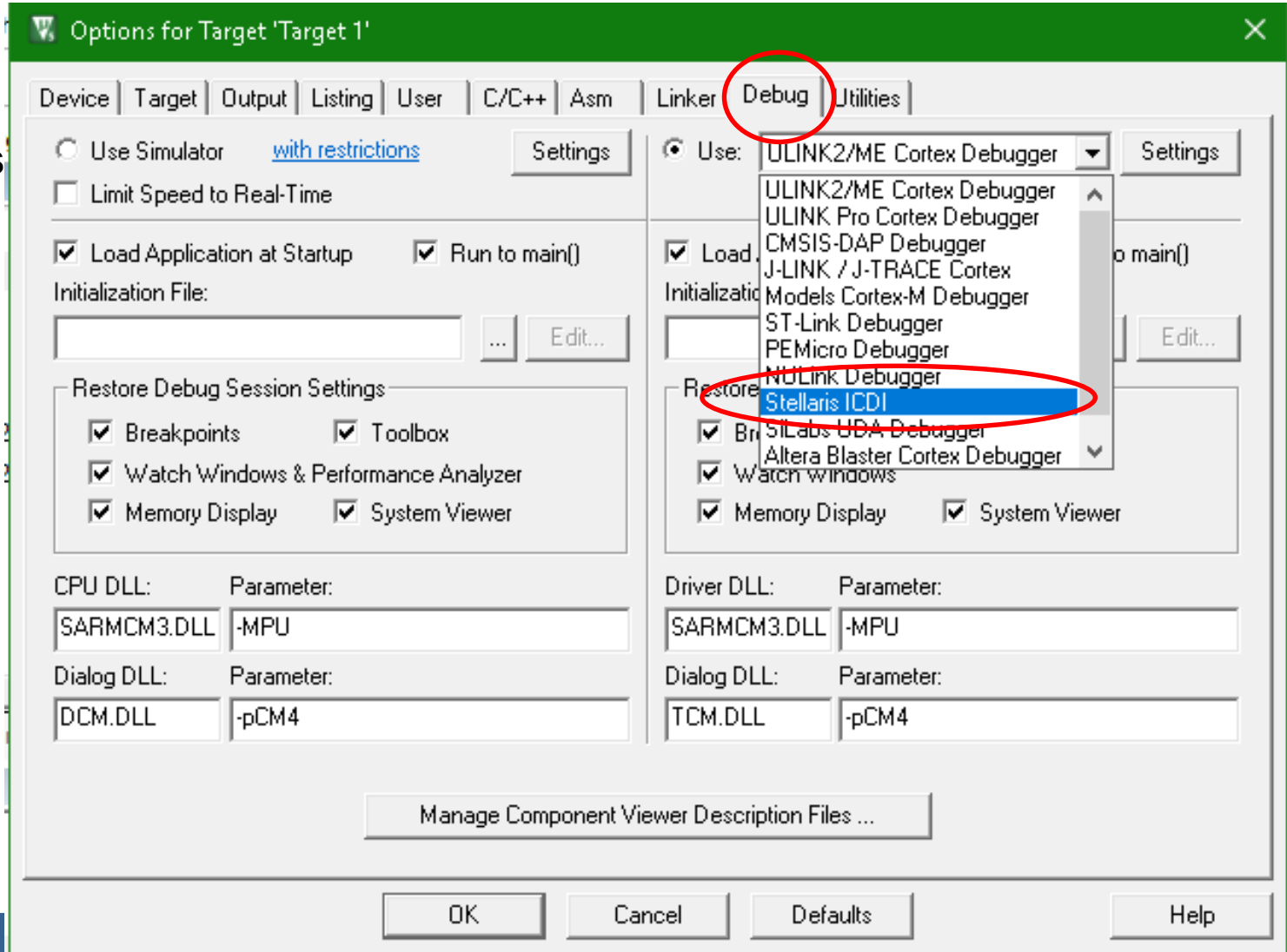
- Right click on “Target1” and select options for Target “Target1”



Cont.…

- **Options for Target “Target1” Pop-up window will be opened**

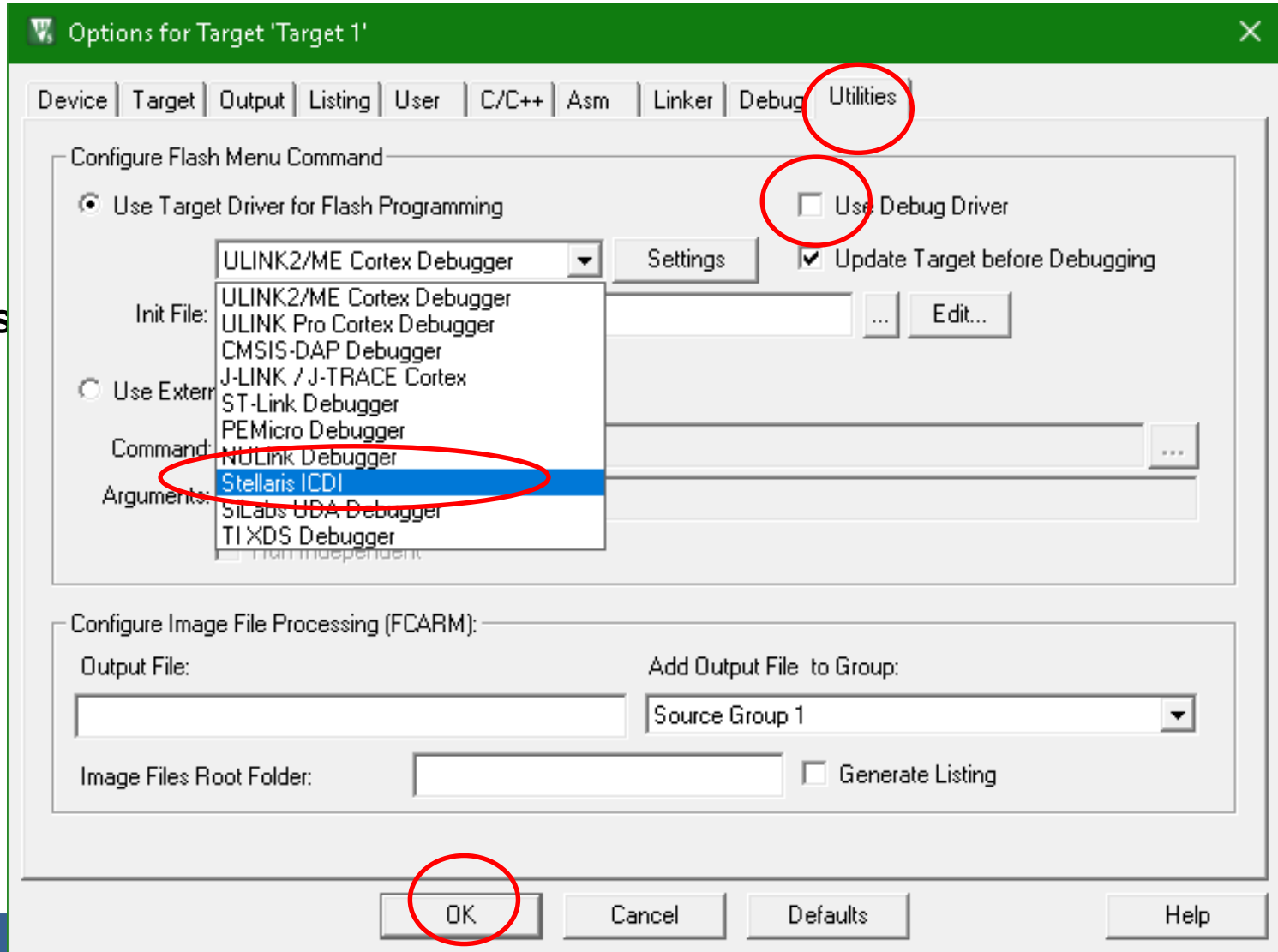
- **Click on Debug**
- **Select “Stellaris ICDI”**



Cont.…

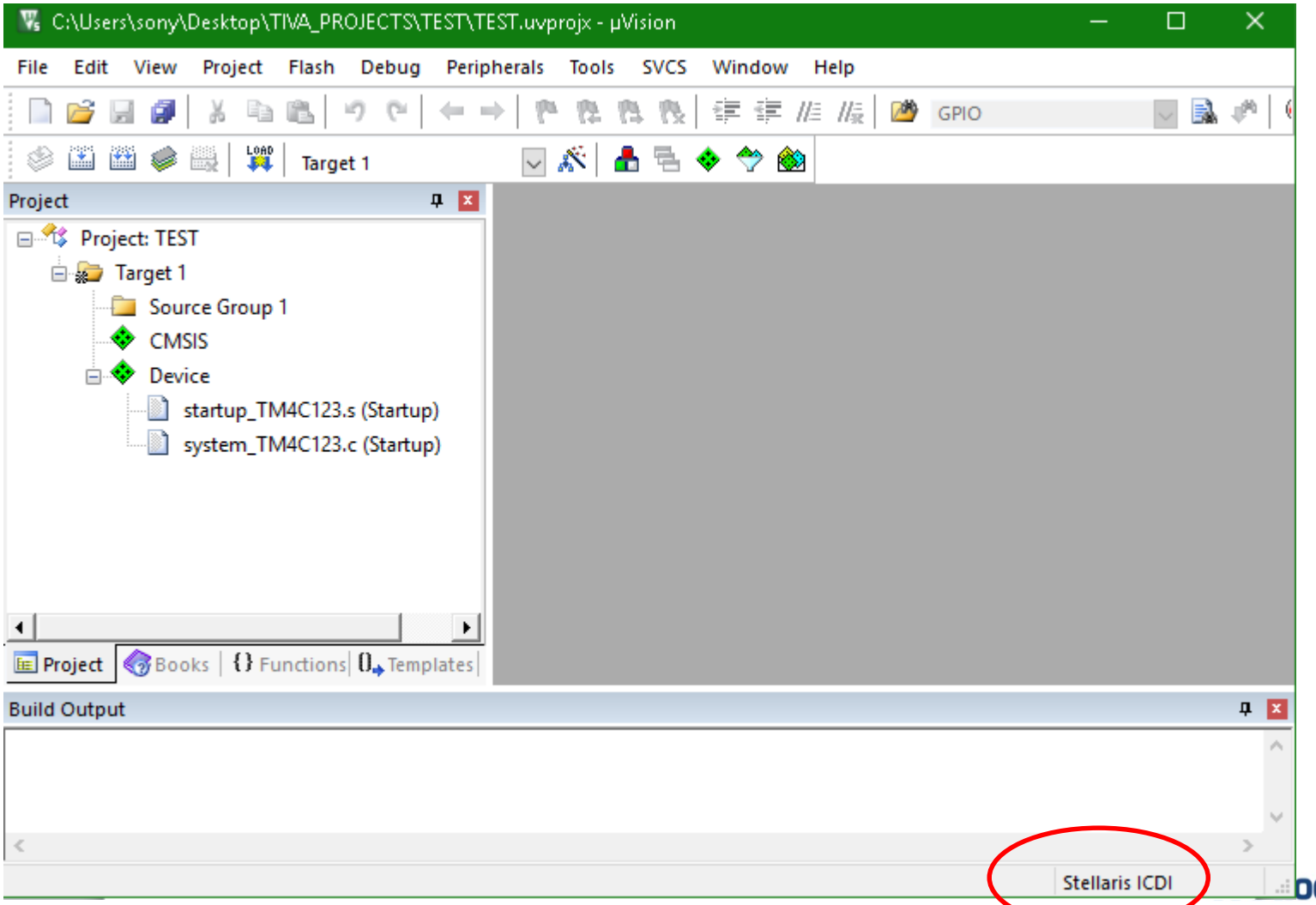
- In options for Target “Target1” Pop-up window

- Click on Utilities
- Un tick “ Use Debug Driver”
- Select “Stellaris ICDI”
- Click “OK”



Cont.…

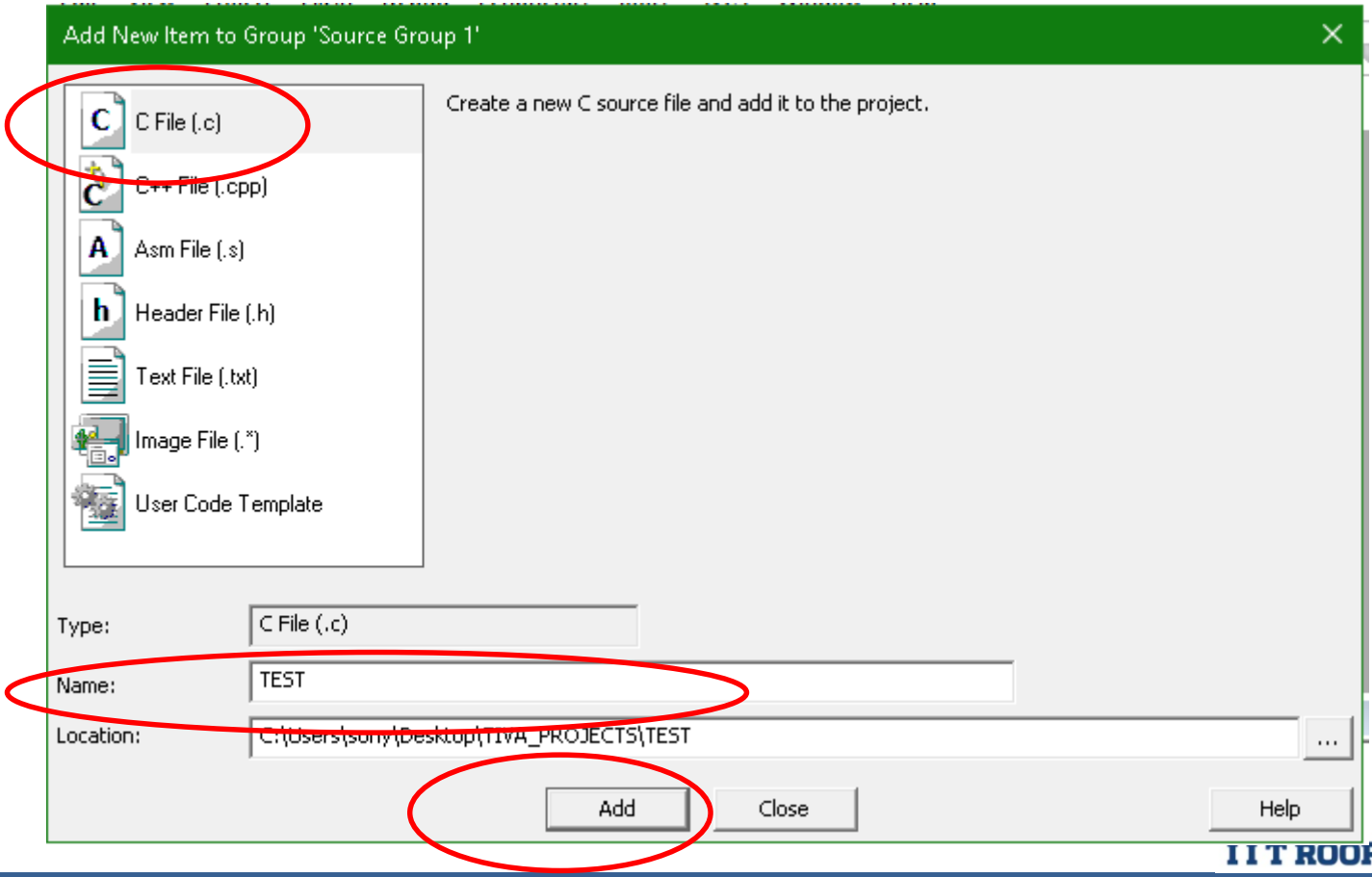
- Now window should be as shown in Fig below



Cont.…

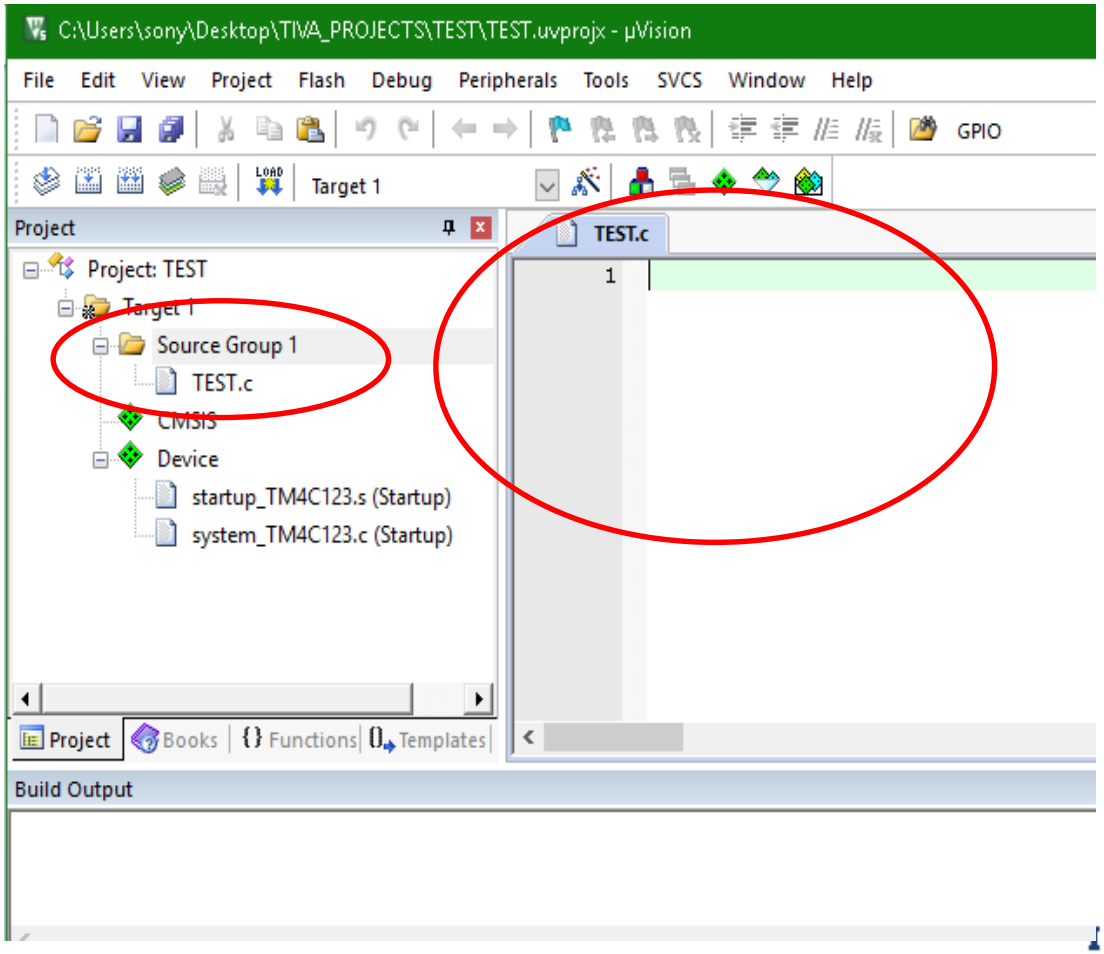
In Add New item to Group “Source Group1” pop-up window

- ❑ **Select C file**
- ❑ **Name the file by writing in the field “Name” & click “Add”**



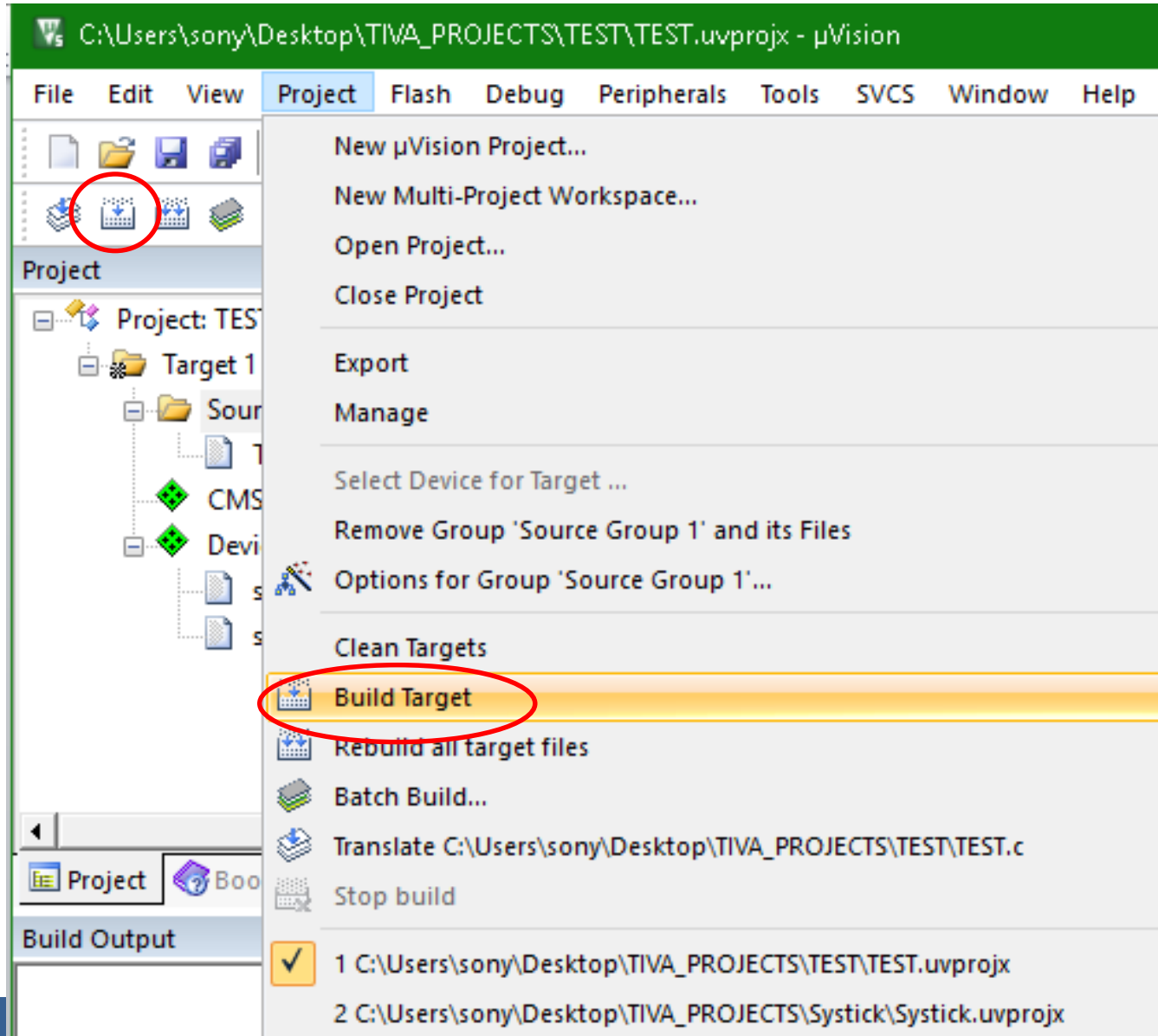
Cont.…

- Now window should be as shown in Fig below
- Write the program using the editor



Build the Project

- Click on Project
  → Build Target



Download the Project

- Click on Flash → Download