



life.augmented

STM32H5 Security workshop Tools installation

Tomas Team

Tools requirements

- HW Requirements :
 - PC with Windows 10 or upper
 - USB Type C cable
 - STM32H573I-DK will be delivered by ST during the Workshop.
- SW Requirements :
 - [STM32CubeMX](#) version 6.9.2 or upper
 - [STM32CubeH5](#) version 1.1.1
 - [STM32TRUSTEE-SM](#) version 1.0.0
 - [STM32CubeIDE](#) version 1.13.2 or upper
 - [STM32CubeProgrammer](#) version 2.14.0 or upper
 - [Material for hands-on](#)
 - Terminal application (TeraTerm)

Tools installation : STM32CubeMX

- [STM32CubeMX](#) version 6.9.2 or upper
- Download and install the package.

Tools installation

- SW Requirements :
 - [STM32CubeMX](#) version 6.9.2 or upper 
 - [STM32CubeH5](#) version 1.1.1
 - [STM32TRUSTEE-SM](#) version 1.0.0
 - [STM32CubeIDE](#) version 1.13.2 or upper
 - [STM32CubeProgrammer](#) version 2.14.0 or upper
 - [Material for hands-on](#)
 - Terminal application (TeraTerm)



Tools installation : STM32H5Cube

Launch STM32CubeMX and Login

The screenshot displays the STM32CubeMX software interface. At the top, the title bar reads "MX STM32CubeMX Untitled". The menu bar includes "File", "Window", and "Help". A pink circle with the number "1" highlights the "myST" user icon in the top right corner, which is also enclosed in a pink rectangle. Below the icon, the text "Login Alt-L" is visible. The main interface is divided into three sections: "Existing Projects", "New Project", and "Manage software installations".

Existing Projects

Recent Opened Projects

Project Name	MX Icon
Test_bank2.ioc <i>Last modified date : 31/08/2023 8:42:31</i>	MX
Test_bank1.ioc <i>Last modified date : 31/08/2023 8:31:26</i>	MX
test.ioc <i>Last modified date : 30/08/2023 10:34:00</i>	MX
Tamper_detection.ioc <i>Last modified date : 29/08/2023 15:01:03</i>	MX
Last_test.ioc <i>Last modified date : 03/08/2023 15:13:46</i>	MX

Other Projects

[Data collection information notice](#)

New Project

I need to :

- Start My project from MCU
[ACCESS TO MCU SELECTOR](#)
- Start My project from ST Board
[ACCESS TO BOARD SELECTOR](#)
- Start My project from Example
[ACCESS TO EXAMPLE SELECTOR](#)

Manage software installations

Check for STM32CubeMX and embedded softwa...

[CHECK FOR UPDATES](#)

Install or remove embedded software packages

[INSTALL / REMOVE](#)

FreeRTOS is back for latest STM32 series now available as a STM32Cube expansion

[Pinout & Configuration](#)

[About STM32](#) [External Tools](#)



Tools installation : STM32H5Cube

Enter your ST account credential or create an account

MX User Authentication Dialog

Already registered?

Enter your e-mail address and password to login your myST user.

E-mail address

Password

☐ Remember me on this computer. ⓘ

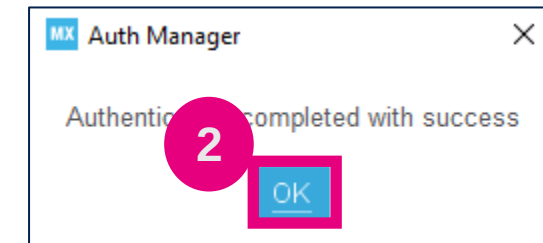
Login

New user?

myST brings you a set of personalized features:

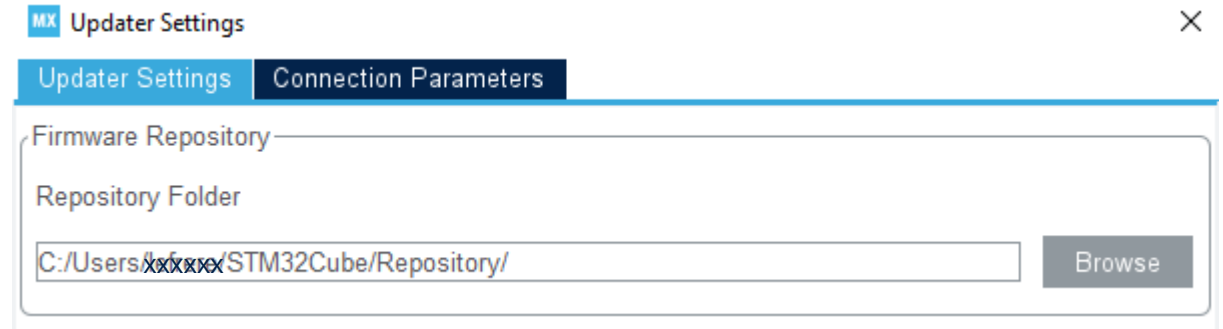
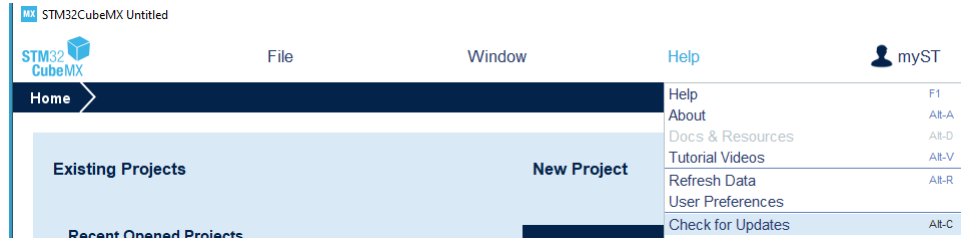
- Participate to ST Events
- Stay informed with ST eNewsletters
- Get help with ST Online Support
- Discuss on the ST Community
- Benefit from our Online Design Tools
- Download Software
- Order free samples
- Manage your weekly product updates
- Buy ST Products & Tools

Create Account





Issue with space in repository path...



- By default the repository is :
C:\Users\<<user name>\lefrere\STM32Cube\Repository\
- If you have space in you <user name>, you will have issue with Secure Manager.
- Please modify the Repository folder to avoid space. If not possible, go on installation and as workaround once installed (slide 12) copy STM32Cube_FW_H5_V1.1.1 to a location without space
For example :
C:\Training\STM32H5_Workshop



Tools installation : STM32H5Cube

Select Help->Manage embedded software package

The screenshot displays the STM32CubeMX application interface. The top menu bar includes 'File', 'Window', and 'Help'. The 'Help' menu is open, showing options like 'Help', 'About', 'Docs & Resources', 'Tutorial Videos', 'Refresh Data' (highlighted with a red box and a red circle with the number 1), 'User Preferences', 'Check for Updates', 'Manage embedded software packages', and 'Updater Settings ...'. The main workspace is divided into two panels. The left panel, titled 'Existing Projects', lists 'Recent Opened Projects' (Test_bank2.ioc, Test_bank1.ioc, test.ioc, Tamper_detection.ioc, Last_test.ioc) and 'Other Projects'. The right panel, titled 'Manage software installations', contains a 'CHECK FOR UPDATES' button, a section for 'Install or remove embedded software packages' with an 'INSTALL / REMOVE' button, and a carousel slide titled 'Starting with STM32H5' with a 'Project Manager > BootPath Settings' link. The bottom of the interface features a footer with the ST logo, 'life.augmented', and links for 'About STM32' and 'External Tools'.



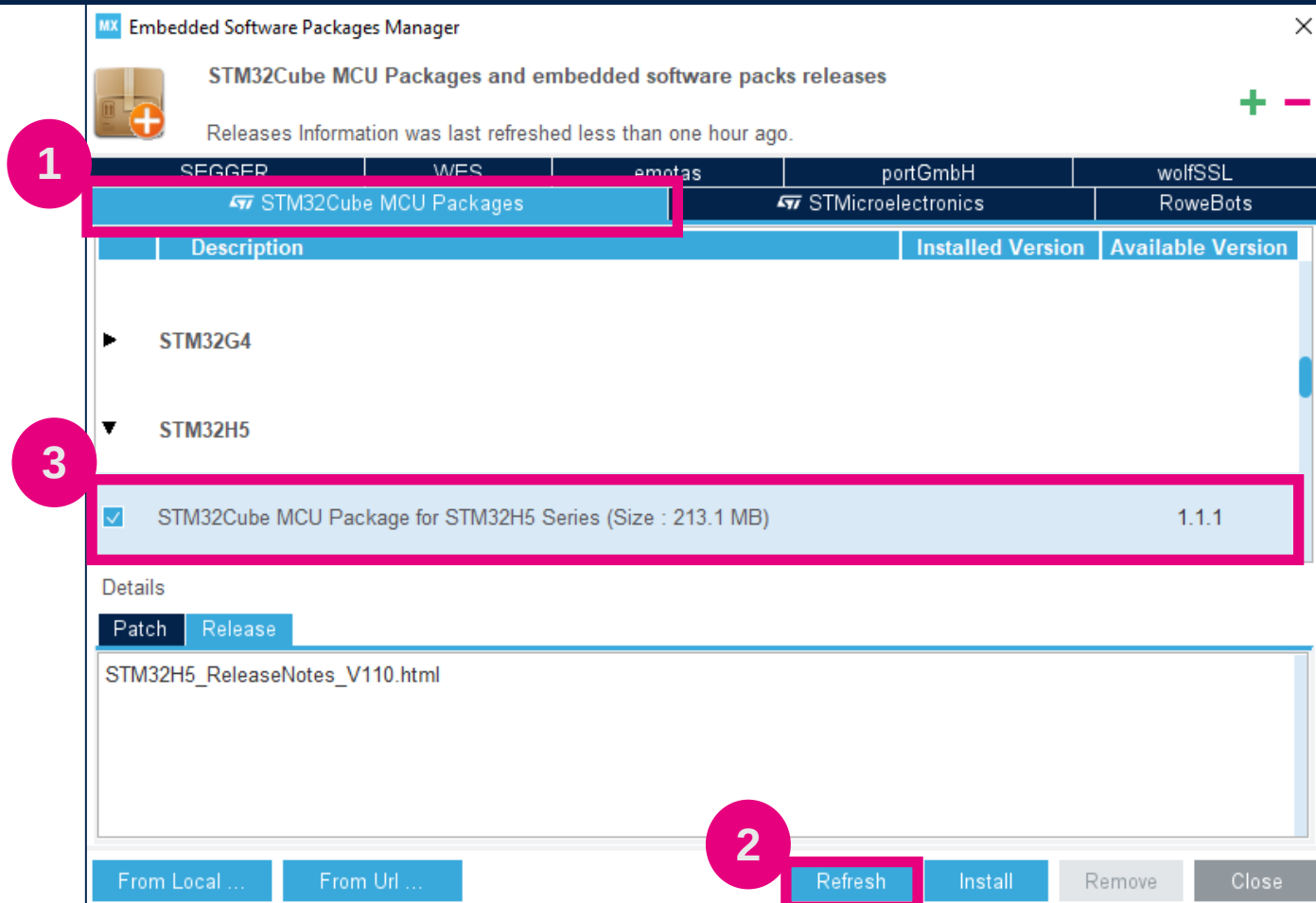
Tools installation : STM32H5Cube

Select Help->Manage embedded software package

The screenshot shows the STM32CubeMX application interface. The top menu bar includes 'File', 'Window', and 'Help'. The 'Help' menu is open, displaying options: 'Help', 'About', 'Docs & Resources', 'Tutorial Videos', 'Refresh Data', 'User Preferences', 'Check for Updates', 'Manage embedded software packages', and 'Updater Settings ...'. A red circle with the number '1' highlights the 'Manage embedded software packages' option. The main workspace is divided into three panels. The left panel, titled 'Existing Projects', lists 'Recent Opened Projects' (Test_bank2.ioc, Test_bank1.ioc, test.ioc, Tamper_detection.ioc, Last_test.ioc) and 'Other Projects'. The middle panel, titled 'New Project', offers options to 'Start My project from MCU', 'Start My project from ST Board', or 'Start My project from Example', each with an 'ACCESS TO' button. The right panel, titled 'Manage software installations', includes a 'CHECK FOR UPDATES' button, a section to 'Install or remove embedded software packages' with an 'INSTALL / REMOVE' button, and a carousel slide titled 'Starting with STM32H5'.

Tools installation : STM32H5Cube

Select Help->Manage embedded software package



1

3

2

MX Embedded Software Packages Manager

STM32Cube MCU Packages and embedded software packs releases

Releases Information was last refreshed less than one hour ago.

Description	Installed Version	Available Version
STM32G4		
STM32H5		
☒ STM32Cube MCU Package for STM32H5 Series (Size : 213.1 MB)		1.1.1

Details

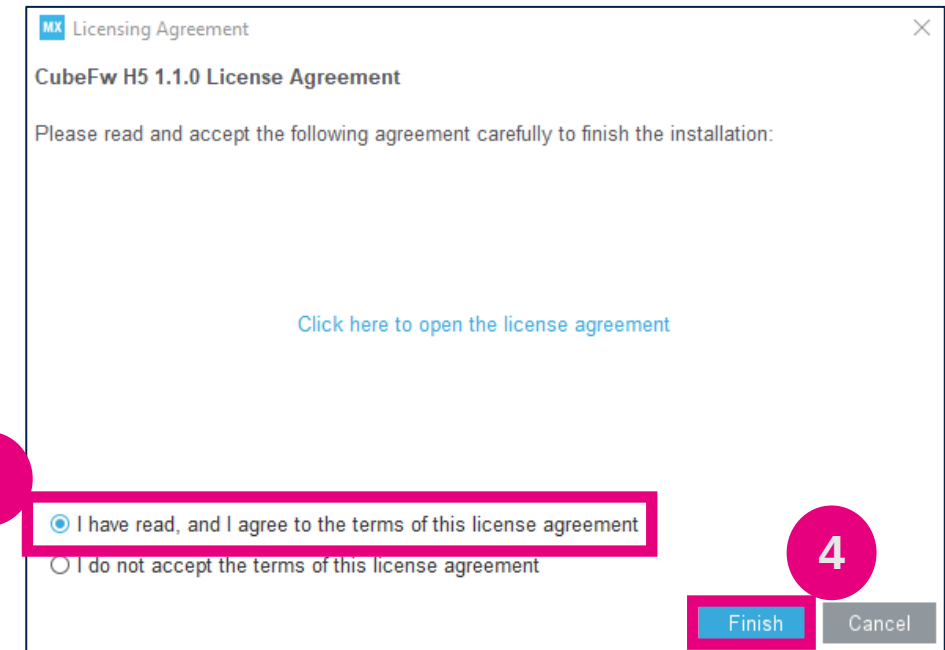
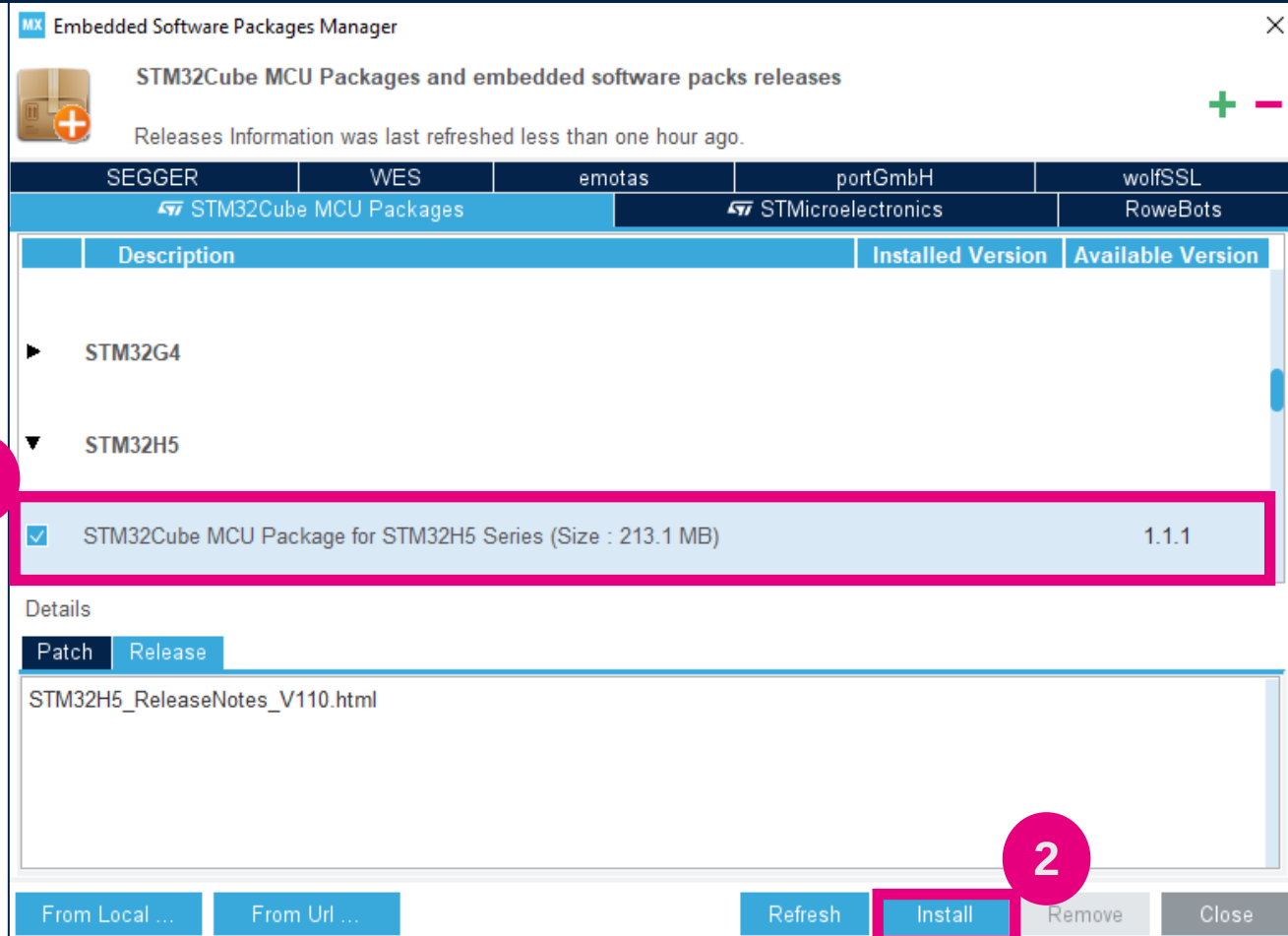
Patch Release

STM32H5_ReleaseNotes_V110.html

From Local ... From Url ... Refresh Install Remove Close

Tools installation : STM32H5Cube

Select Help->Manage embedded software package





Tools installation : STM32H5Cube

Package is installed

MX

Embedded Software Packages Manager

✕



STM32Cube MCU Packages and embedded software packs releases

+

-

Releases Information was last refreshed less than one hour ago.

SEGGER	WES	emotas	portGmbH	wolfSSL
STM32Cube MCU Packages		STMicroelectronics		RoweBots
Description	Installed Version	Available Version		
▶ STM32G4				
▼ STM32H5				
■ STM32Cube MCU Package for STM32H5 Series	1.1.1	1.1.1		

Details

From Local ...

From Url ...

Refresh

Install

Remove

Close

Tools installation

- SW Requirements:
 - [STM32CubeMX](#) version 6.9.2 or upper 
 - [STM32CubeH5](#) version 1.1.1 
 - [STM32TRUSTEE-SM](#) version 1.0.0
 - [STM32CubeIDE](#) version 1.13.2 or upper
 - [STM32CubeProgrammer](#) version 2.14.0 or upper
 - [Material for hands-on](#)
 - Terminal application (TeraTerm)

Tools installation : Secure Manager

Request the secure manager

- Available here <https://www.st.com/en/embedded-software/stm32trustee-sm.html>

Get Software

Part Number	General Description	ECCN (US)	Download
+ X-CUBE-SEC-M-H5	Secure manager embedded software for STM32Cube	5D002.c.1	Request Software

- Request software and fill the form

Tools installation : Secure Manager

Fill the form

Request Software

Project Title:	
Project Description:	
Application:	Please choose an application
End Application:	Please choose a sub-application
Nature of Business:	
Military Related:	
Country/Region where the Software will be used:	
Please keep me informed about future updates for this product.	☐
Comment:	

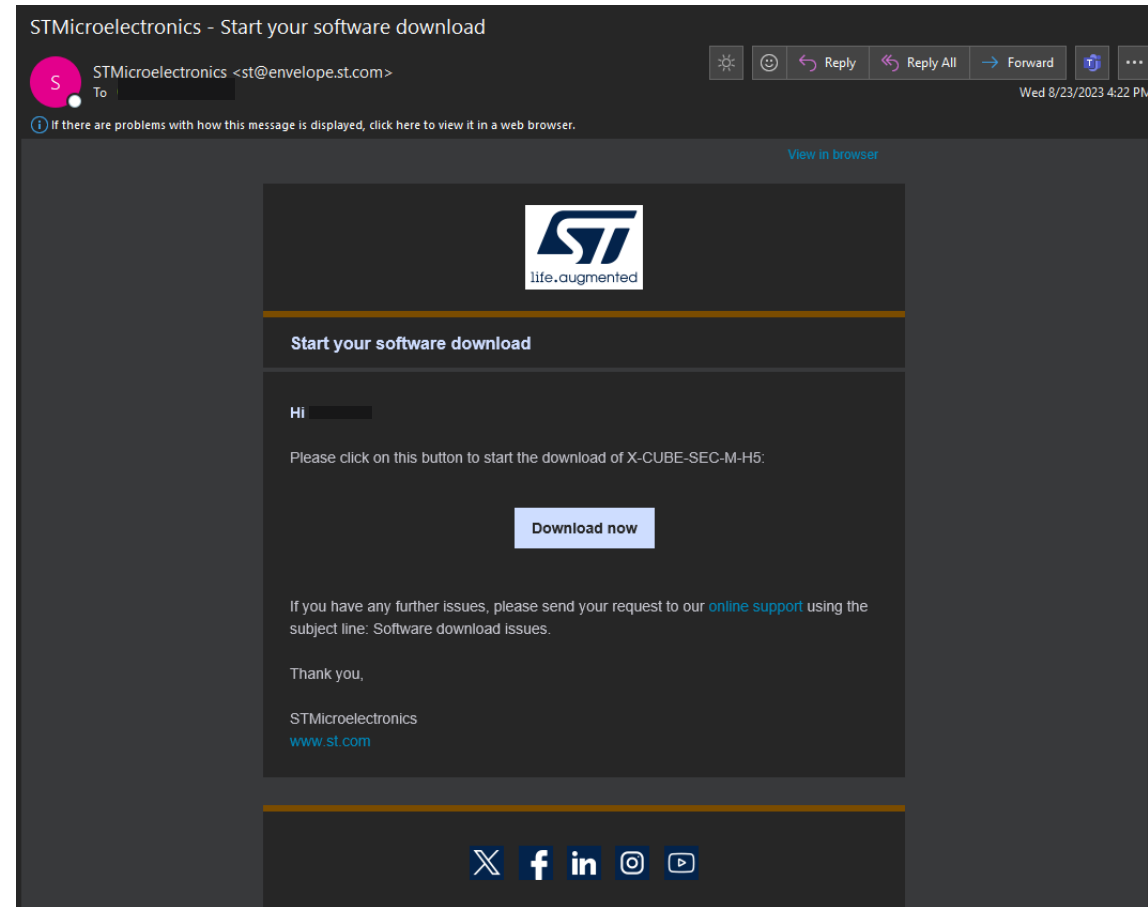
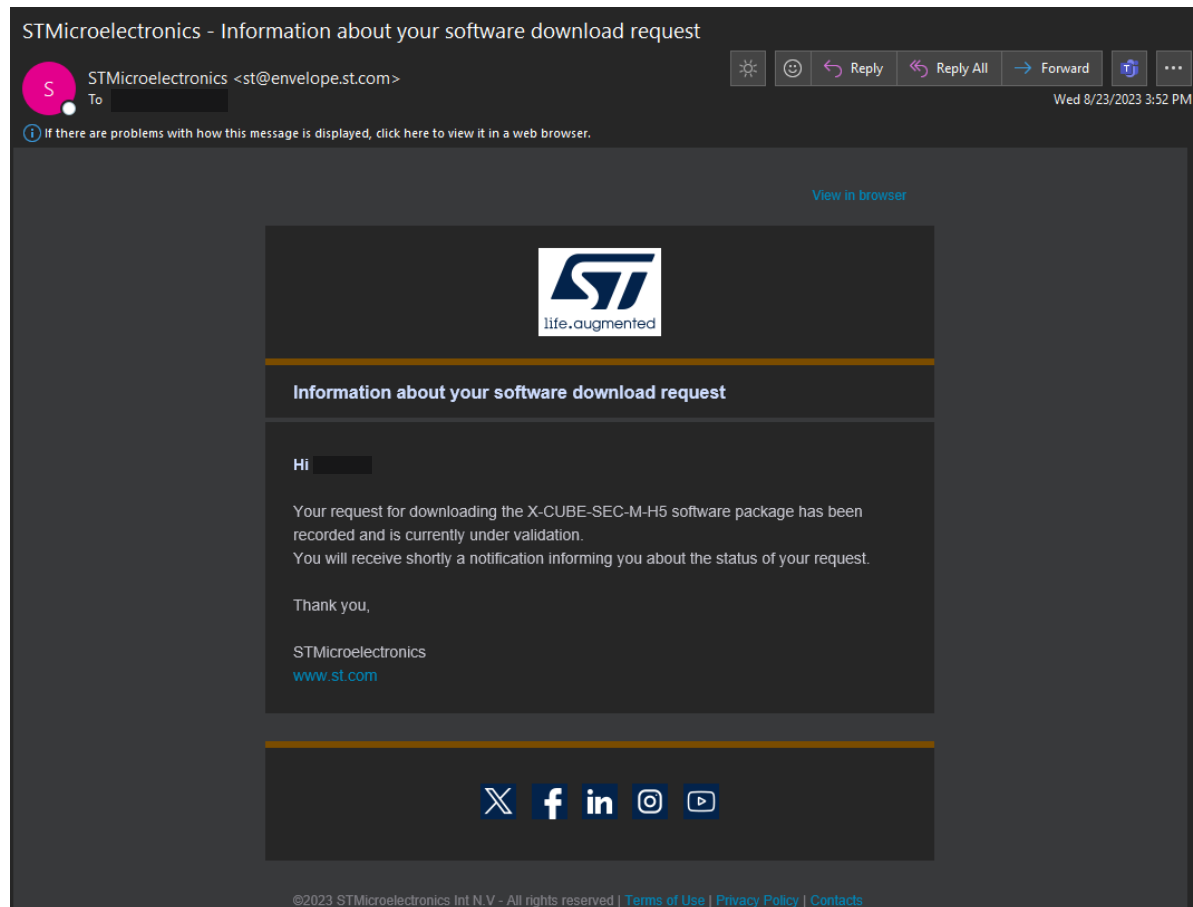
☐ I accept all [Terms & Conditions](#) of the Export Control regulations

Cancel

Confirm Request

Tools installation : Secure Manager

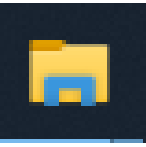
Check your mail box ! You will receive a download link within 24h



Tools installation : Secure Manager

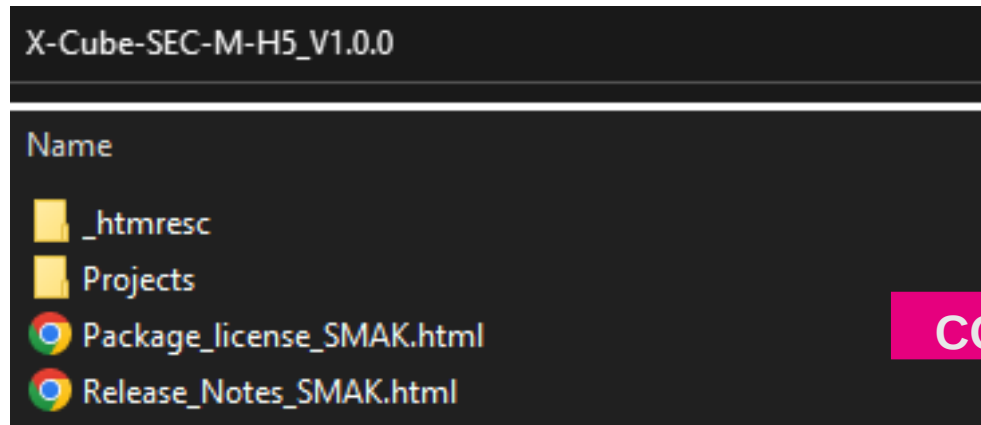
Content of en.x-cube-sec-m-h5-1.0.0.zip

```
X-CUBE-SEC-M-H5_V1.0.0
├── Package_license_SMAK.html
├── Release_Notes_SMAK.html
├── Projects
│   ├── STM32H573I-DK
│   │   ├── ROT_Provisioning
│   │   │   ├── LICENSE.txt
│   │   │   └── SM
│   │   │       └── Binary
│   │   │           ├── SecureManagerPackage_PROD_v1.0.0.ssfi
│   │   │           └── version.bat
│   └── _htmresc
│       ├── Add_button.svg
│       ├── favicon.png
│       ├── mini-st_2020.css
│       ├── Security_Secure_Manager.png
│       ├── st_logo_2020.png
│       └── Update.svg
```

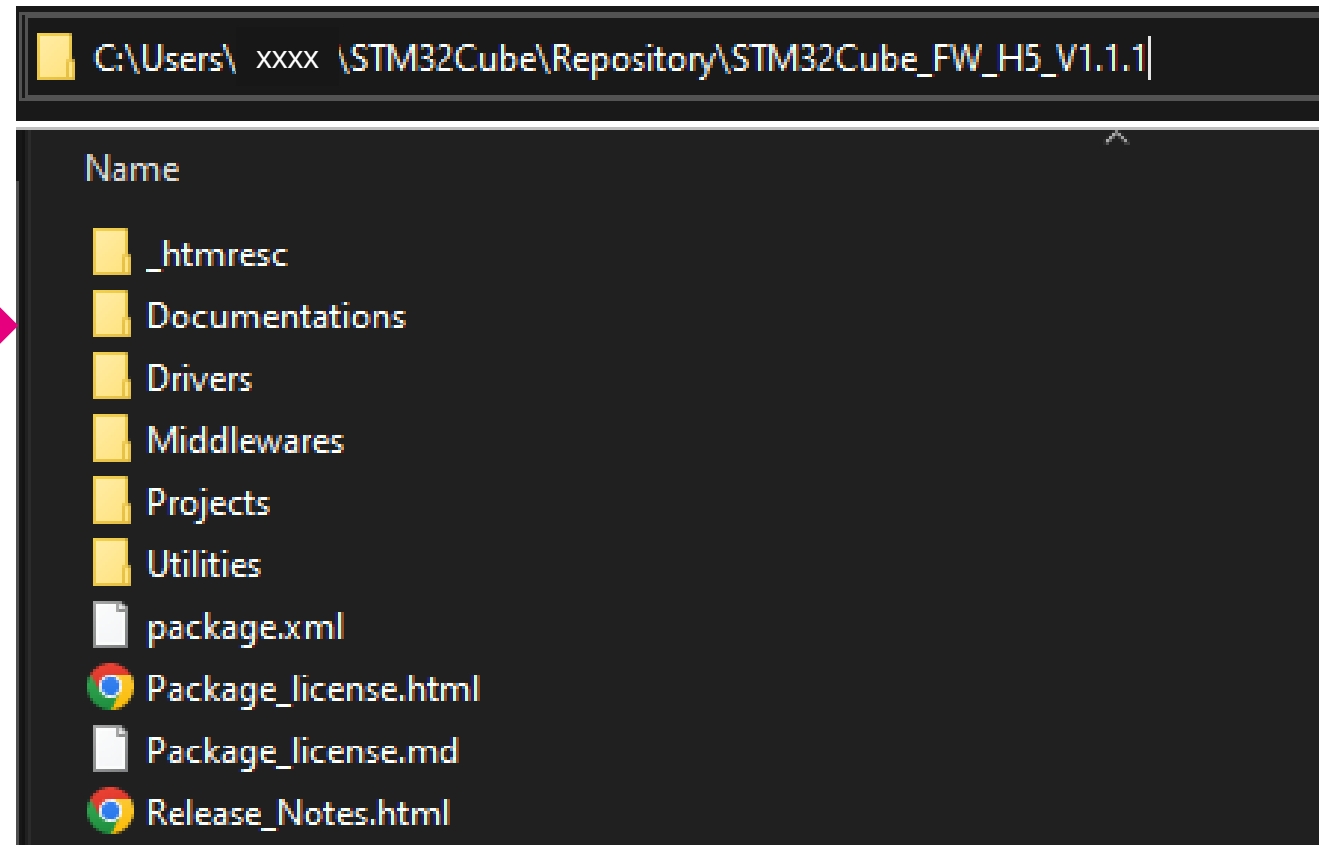


Tools installation : Secure Manager

Unzip en.x-cube-sec-m-h5-1.0.0.zip on STM32Cube_FW_H5_V1.1.1



COPY



Tools installation

- SW Requirements:
 - [STM32CubeMX](#) version 6.9.2 or upper 
 - [STM32CubeH5](#) version 1.1.1 
 - [STM32TRUSTEE-SM](#) version 1.0.0 
 - [STM32CubeIDE](#) version 1.13.2 or upper
 - [STM32CubeProgrammer](#) version 2.14.0 or upper
 - [Material for hands-on](#)
 - Terminal application (TeraTerm)

Tools installation : STM32CubeIDE

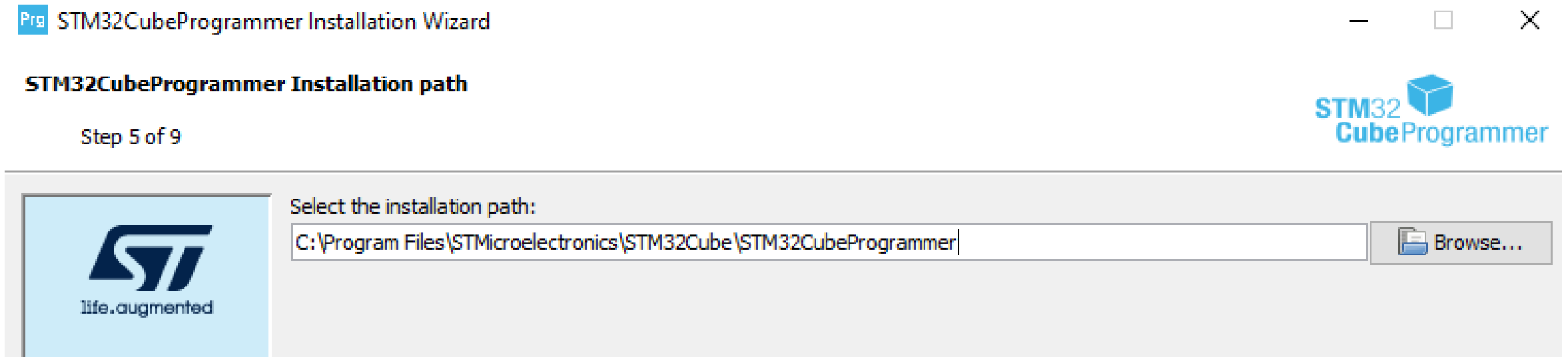
- [STM32CubeIDE](#) version 1.13.2 or upper
- Download and install the package.
- [STM32CubeIDE installation guide](#)

Tools installation

- SW Requirements:
 - [STM32CubeMX](#) version 6.9.2 or upper 
 - [STM32CubeH5](#) version 1.1.1 
 - [STM32TRUSTEE-SM](#) version 1.0.0 
 - [STM32CubeIDE](#) version 1.13.2 or upper 
 - [STM32CubeProgrammer](#) version 2.14.0 or upper
 - [Material for hands-on](#)
 - Terminal application (TeraTerm)

Tools installation : STM32CubeProgrammer

- [STM32CubeProgrammer](#) version 2.14.0 or upper
- Remark : please keep the default path installation if possible.



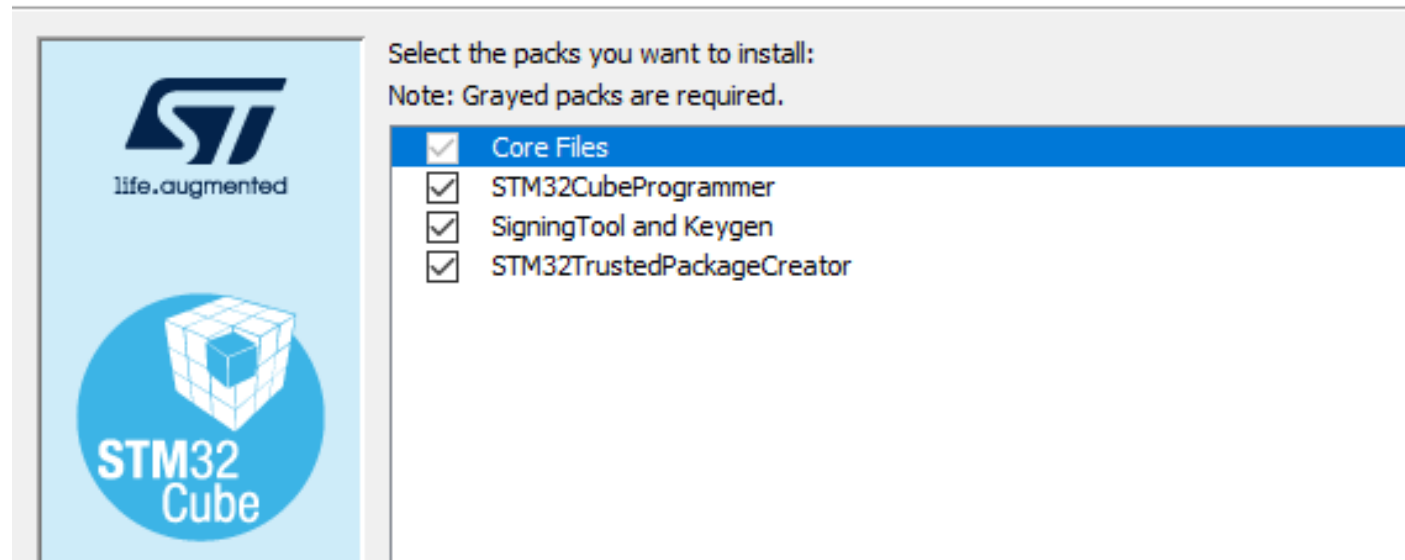
Tools installation : STM32CubeProgrammer

- Install all the components (default selection)

Prg STM32CubeProgrammer Installation Wizard

STM32CubeProgrammer Components selection

Step 6 of 9



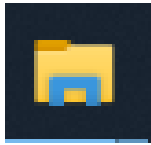
Tools installation : STM32CubeProgrammer

- If you haven't installed STM32CubeProgrammer in the default folder :

C:\Program Files\STMicroelectronics\STM32Cube\STM32CubeProgrammer

- Please edit the file :

C:\Users\<your_login>\STM32Cube\Repository\STM32Cube_FW_H5_V1.1.1\Projects\STM32H573I-DK\ROT_Provisioning\env.bat



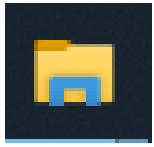
Tools installation : STM32CubeProgrammer

Update those variable with your installation path

\\STM32Cube\Repository\STM32Cube_FW_H5_V1.1.1\Projects\STM32H573I-DK\ROT_Provisioning\env.bat - Notepad++

View Encoding Language Settings Tools Macro Run Plugins Window ?

```
1 @ECHO OFF
2
3 :: =====
4 :: ..... General
5 :: =====
6 :: Configure tools installation path
7 set stm32programmercli="C:\Program
Files\STMicroelectronics\STM32Cube\STM32CubeProgrammer\bin\STM32_Programmer_CLI.exe"
8 set stm32tpccli="C:\Program
Files\STMicroelectronics\STM32Cube\STM32CubeProgrammer\bin\STM32TrustedPackageCreator_CLI.exe"
9
10 :: =====
11 :: ..... STiRoT boot path
12 :: =====
```



Tools installation : STM32CubeProgrammer

- If you haven't installed STM32CubeProgrammer in the default folder :

C:\Program Files\STMicroelectronics\STM32Cube\STM32CubeProgrammer

- Please edit the file :

C:\Program

Files\STMicroelectronics\STM32Cube\STM32CubeMX\db\plugins\projectmanager\envBat.ftl

Update this variable with your installation path

```
1  [#ftl]
2  @ECHO OFF
3  :: =====
4  ::                               General
5  :: =====
6  set stm32programmercli="C:\Program Files\STMicroelectronics\STM32Cube\STM32CubeProgrammer\bin\STM32_Programmer_CLI.exe"
7  [!if %BOOTPATHTYPE% == (BOOTPATHTYPE=="SI_TK01_0K01_SECURE_MANAGER")]
```

Tools installation

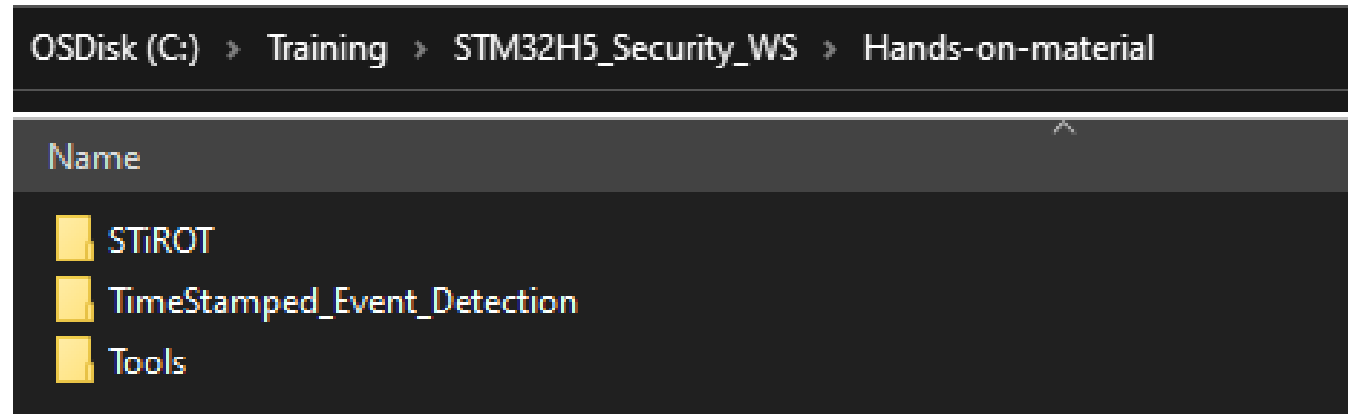
- SW Requirements:
 - [STM32CubeMX](#) version 6.9.2 or upper 
 - [STM32CubeH5](#) version 1.1.1 
 - [STM32TRUSTEE-SM](#) version 1.0.0 
 - [STM32CubeIDE](#) version 1.13.2 or upper 
 - [STM32CubeProgrammer](#) version 2.14.0 or upper 
 - [Material for hands-on](#)
 - Terminal application (TeraTerm)

Tool installation : Material for hands-on

- Download the archive : STM32H5_Security_WS_V1.0.zip available thanks this link: [Material for hands-on](https://drive.google.com/file/d/18Qv_AIPIp1u_uQBaqZE3_j8byiplT8Rz/view?usp=sharing)

https://drive.google.com/file/d/18Qv_AIPIp1u_uQBaqZE3_j8byiplT8Rz/view?usp=sharing

- Unzip this archive on your local drive.
Suggested path : “C:\Training\STM32H5_Security_WS”
- Expected result :



Tools installation

- SW Requirement :
 - [STM32CubeMX](#) version 6.9.2 or upper 
 - [STM32CubeH5](#) version 1.1.1 
 - [STM32TRUSTEE-SM](#) version 1.0.0 
 - [STM32CubeIDE](#) version 1.13.2 or upper 
 - [STM32CubeProgrammer](#) version 2.14.0 or upper 
 - [Material for hands-on](#) 
 - Terminal application (TeraTerm)

Tools installation : Terminal application

- Terminal application used in this workshop is TeraTerm
- You should be able to get TeraTerm from [here](#)
- Get the zip file and extract it to your preferred directory
- For convenience you can change some default settings
 - To get default baudrate to 115200, you can edit the TERATERM.INI file and change the line BaudRate=9600 to BaudRate=115200
 - To get popup window selecting com port by default, change Port=tcpip to Port=Serial in the same configuration file.

Tools installation

- SW Requirement :

- [STM32CubeMX](#) version 6.9.2 or upper 
- [STM32CubeH5](#) version 1.1.1 
- [STM32TRUSTEE-SM](#) version 1.0.0 
- [STM32CubeIDE](#) version 1.13.2 or upper 
- [STM32CubeProgrammer](#) version 2.14.0 or upper 
- [Material for hands-on](#) 
- Terminal application (TeraTerm) 

Sanity check

Sanity check.



Please check if you can find the file : SecureManagerPackage_PROD_v1.0.0.ssfi at this location :

C:\Users\<your_login>\STM32Cube\Repository\STM32Cube_FW_H5_V1.1.1\Projects\STM32H573I-DK\ROT_Provisioning\SM\Binary\

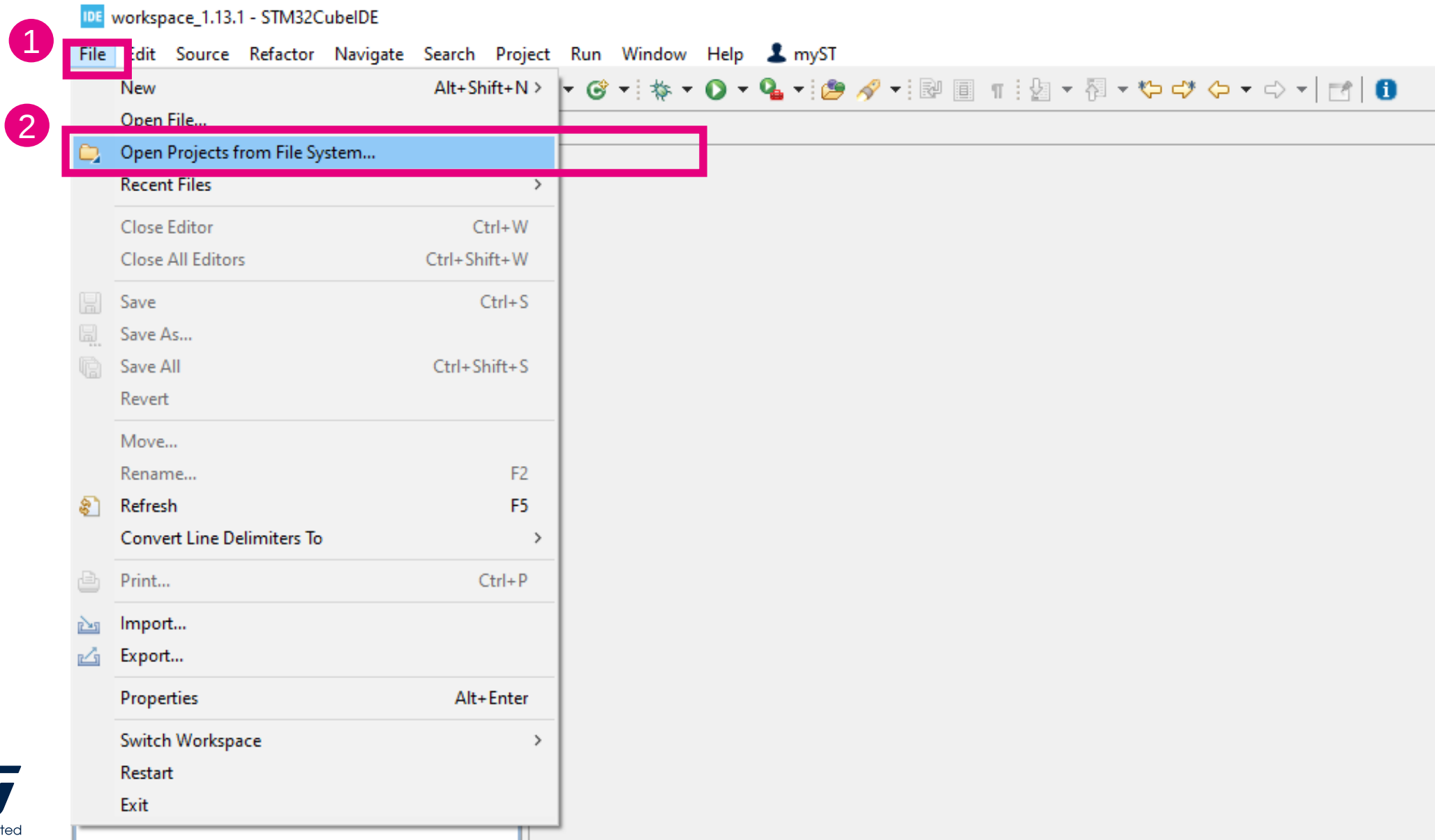


Please compile the CubeIDE project SMAK_Appli :

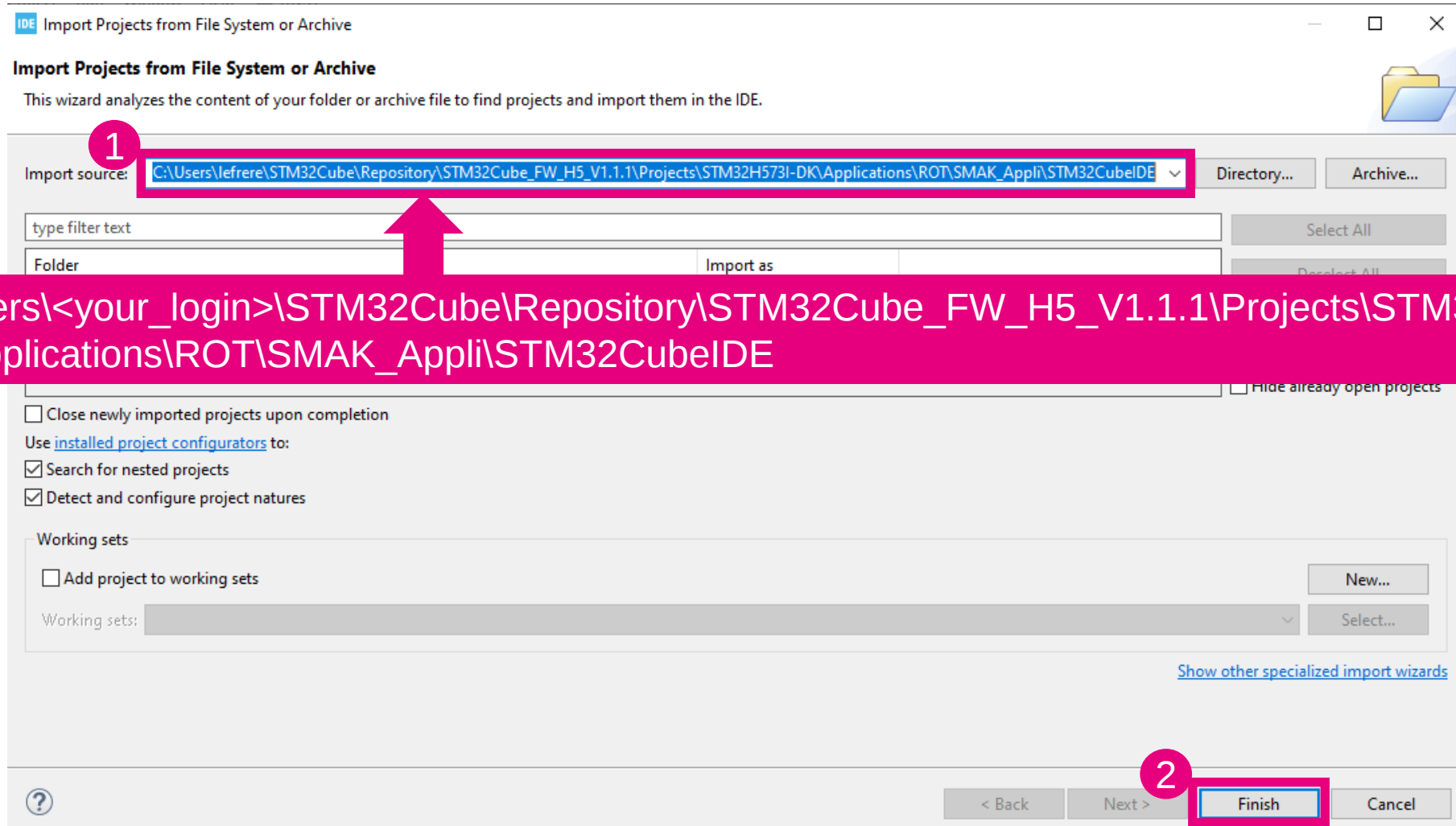
C:\Users\<your_login>\STM32Cube\Repository\STM32Cube_FW_H5_V1.1.1\Projects\STM32H573I-DK\Applications\ROT\SMAK_Appli\STM32CubeIDE

If you are not familiar with STM32CubeIDE follows the instruction in the next slides.

Import SMAK application in the IDE

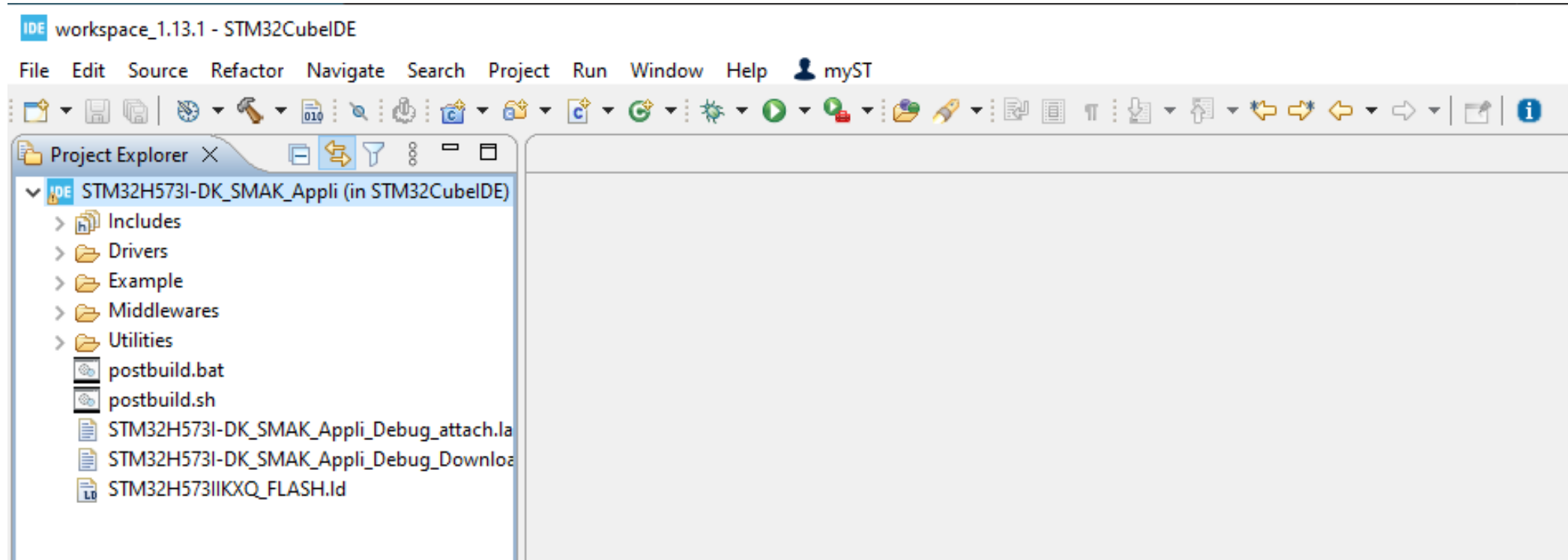


Import SMAK application in the STM32CubeIDE

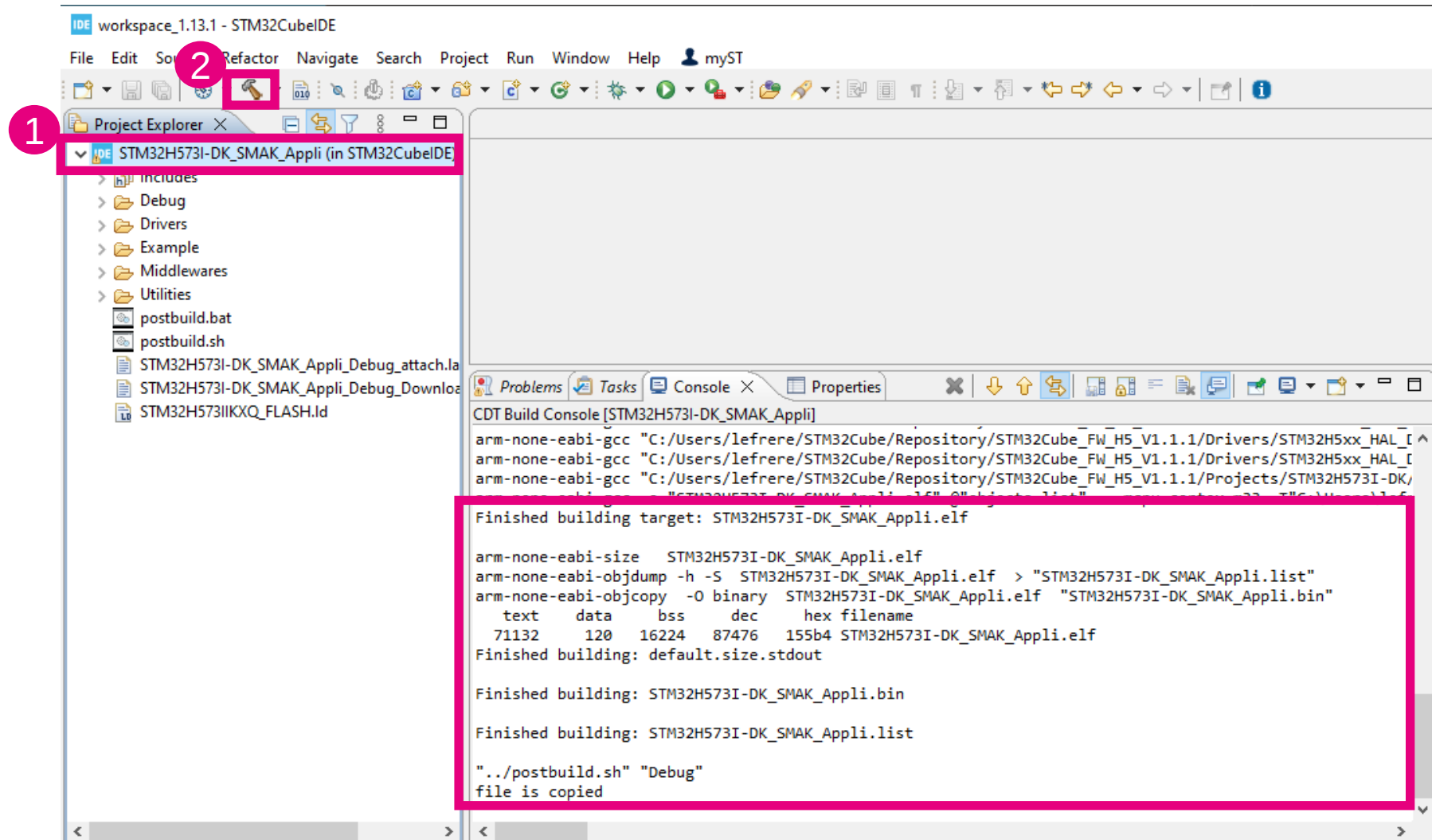


C:\Users\<your_login>\STM32Cube\Repository\STM32Cube_FW_H5_V1.1\Projects\STM32H573I-DK\Applications\ROT\SMAK_Appli\STM32CubeIDE

Import SMAK application in the STM32CubeIDE

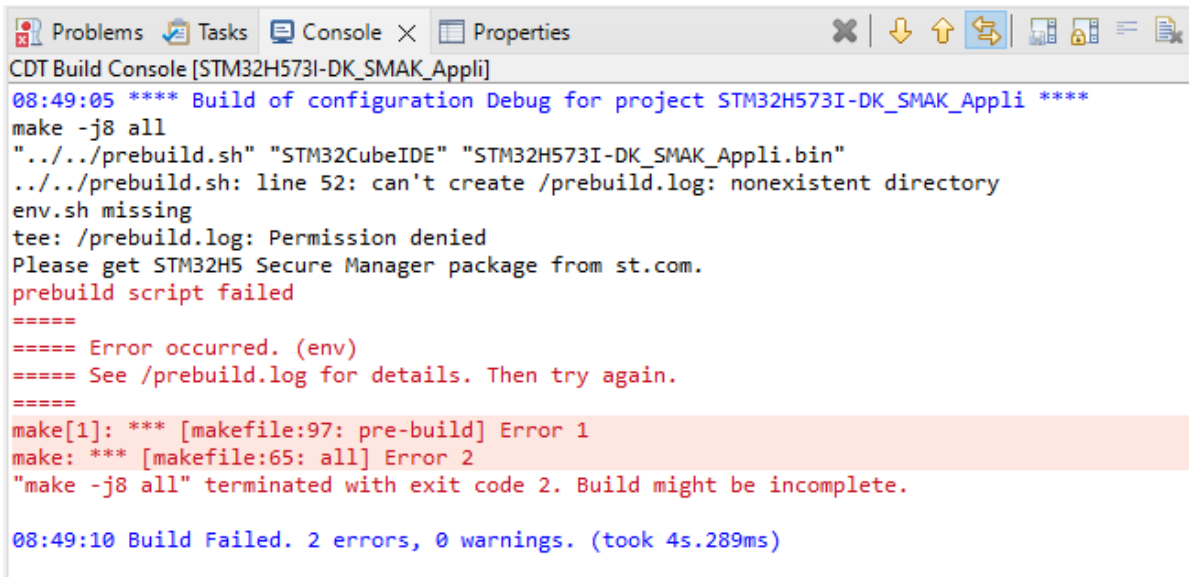


Compile SMAK application with STM32CubeIDE



Issue with STM32CubeIDE 1.14.0

- If you are using STM32CubeIDE 1.14.0



The screenshot shows the CDT Build Console window for a project named 'STM32H573I-DK_SMAK_Appli'. The console output indicates a build failure at 08:49:05. The error message states: 'make -j8 all', followed by '"/.../prebuild.sh" "STM32CubeIDE" "STM32H573I-DK_SMAK_Appli.bin"', and then '"/.../prebuild.sh: line 52: can't create /prebuild.log: nonexistent directory'. This is followed by 'env.sh missing' and 'tee: /prebuild.log: Permission denied'. A message from ST.com suggests getting the STM32H5 Secure Manager package. The build script failed, and an error occurred in the environment (env). The user is advised to see /prebuild.log for details. The console also shows 'make[1]: *** [makefile:97: pre-build] Error 1' and 'make: *** [makefile:65: all] Error 2'. The build terminated with exit code 2, indicating it might be incomplete. The final status at 08:49:10 is 'Build Failed. 2 errors, 0 warnings. (took 4s.289ms)'.

```
CDT Build Console [STM32H573I-DK_SMAK_Appli]
08:49:05 **** Build of configuration Debug for project STM32H573I-DK_SMAK_Appli ****
make -j8 all
"/.../prebuild.sh" "STM32CubeIDE" "STM32H573I-DK_SMAK_Appli.bin"
"/.../prebuild.sh: line 52: can't create /prebuild.log: nonexistent directory
env.sh missing
tee: /prebuild.log: Permission denied
Please get STM32H5 Secure Manager package from st.com.
prebuild script failed
=====
===== Error occurred. (env)
===== See /prebuild.log for details. Then try again.
=====
make[1]: *** [makefile:97: pre-build] Error 1
make: *** [makefile:65: all] Error 2
"make -j8 all" terminated with exit code 2. Build might be incomplete.

08:49:10 Build Failed. 2 errors, 0 warnings. (took 4s.289ms)
```

Issue with STM32CubeIDE 1.14.0

- To workaround this bug copy the file :

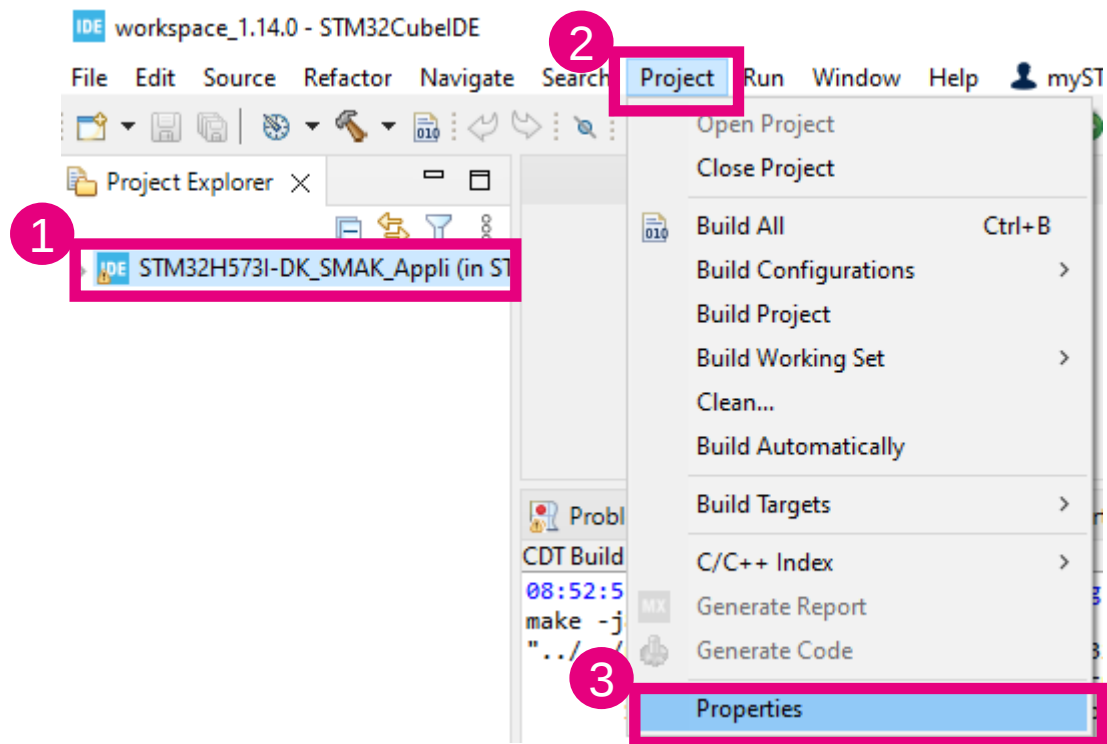
```
C:\Users\<your_login>\STM32Cube\Repository\STM32Cube_FW_H5_V1.1.1\Projects\STM32H573I-DK\Applications\ROT\SMAK_Appli\EWARM\postbuild.bat
```

- To this folder (the current postbuild.bat will be replace)

```
C:\Users\<your_login>\STM32Cube\Repository\STM32Cube_FW_H5_V1.1.1\Projects\STM32H573I-DK\Applications\ROT\SMAK_Appli\STM32CubeIDE\
```

Issue with STM32CubeIDE 1.14.0

- Then in project properties



Issue with STM32CubeIDE 1.14.0

The screenshot shows the 'Settings' window for 'STM32H573I-DK_SMAK_Appli'. The left sidebar contains a tree view with the following items: 'Resource', 'Builders', 'C/C++ Build' (highlighted with a red box and a red circle with the number 1), 'Build Variables', 'Environment', 'Logging', 'Settings' (highlighted with a red box and a red circle with the number 2), 'C/C++ General', 'CMSIS-SVD Settings', 'Project References', and 'Run/Debug Settings'. The main area is titled 'Settings' and has a 'Configuration:' dropdown set to 'Debug [Active]' with a 'Manage Configurations...' button. Below this is a tabbed interface with 'Tool Settings', 'Build Steps' (highlighted with a red box and a red circle with the number 3), 'Build Artifact', 'Binary Parsers', and 'Error Parsers'. The 'Build Steps' tab is active, showing 'Pre-build steps' and 'Post-build steps'. Under 'Pre-build steps', the 'Command:' field contains '"../prebuild.bat" "STM32CubeIDE" "\${ProjName}.bin"' (highlighted with a red box and a red circle with the number 4). A red box with the number 5 is placed over the 'postbuild.bat' part of the 'Post-build steps' command field. Two red callout boxes with white text provide instructions: 'Change the script extension from prebuild.sh to prebuild.bat' (pointing to the prebuild.bat field) and 'Change the script extension from postbuild.sh to postbuild.bat' (pointing to the postbuild.bat field). At the bottom right, the 'Apply and Close' button is highlighted with a red box and a red circle with the number 6, next to a 'Cancel' button.

IDE Properties for STM32H573I-DK_SMAK_Appli

type filter text

> Resource

Builders

1 C/C++ Build

Build Variables

Environment

2 Logging

Settings

> C/C++ General

CMSIS-SVD Settings

Project References

Run/Debug Settings

Settings

Configuration: Debug [Active] Manage Configurations...

Tool Settings 3 Build Steps Build Artifact Binary Parsers Error Parsers

Pre-build steps

4 Command:

"../prebuild.bat" "STM32CubeIDE" "\${ProjName}.bin"

Change the script extension from prebuild.sh to prebuild.bat

Post-build steps

5 Command:

"../postbuild.bat" "\${ConfigName}"

Change the script extension from postbuild.sh to postbuild.bat

6 Apply and Close Cancel

Sanity check done.

Congratulation !

You're ready...

We would be please to meet you at
the STM32H5 Security workshop !

Our technology starts with You



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