

Preparation for Workshop

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1 Introduction

This document is to help the participant setup the environment and some related materials required to successfully attend "LoRa PHY Basics Workshop". This document assumes that the attendee has no previous experience in LoRa and no prior development environment setup.

2 Setting Up the Development Environment

For this workshop, we will be using the System Workbench for STM32 [2] which is a free IDE on Windows, Ubuntu and OS X.

The download link [5] can be found in the References section. You should create an account before you are able to download.

If everything went without errors, you should have the window as seen in Figure 1.

Create a new workspace folder for the workshop (not really necessary, only for easiness of working) and switch the workspace of eclipse (by going to file->switch workspace->other.. and then browse to the workspace folder).

3 Importing the LoRaWAN software expansion package

1. Import the I-CUBE-LRWAN [3] software expansion package.
2. Extract it in the workspace folder.

Now we need to import the code into eclipse and build the code to check if everything was setup properly. For this we go to the following sub folder:
STM32CubeExpansion_LRWAN_V1.2.0\Projects\B-L072Z-LRWAN1\Applications\
LoRa\PingPong\SW4STM32\mlm32107x01
Double click on the .project file.

If everything went correctly, the project gets imported under the name "mlm32l07x01". To build this project you can click the build icon (the hammer looking icon) after selecting the project.

The main file can be found under Projects->PingPong folder.

If it builds successfully, then we see the output as seen in Figure 2.

In order to change the code, we will change the main file, but since we dont want to affect the original main file we will create a duplicate of the existing main file in the workspace by:

1. Click on PingPong folder and right-click->new->file. Name it whatever you want but remember to have ".c" in the end of the name , we will change its name later.
2. copy the whole code from main file to the new file.
3. delete the main.c file from eclipse workspace. Since this is a link, deleting this file does not delete the actual main.c file. Hence our original main.c file remains unchanged.
4. rename the filename to "main.c".
5. Build the code to confirm everything is in order.

Now the basic setup is complete.

4 Recommended Reading

Before attending the workshop it is recommended that the attendee knows some details like the board being used and brief introduction on LoRa.

Board information can be found in [4].

To start reading about LoRa one could start from this link [1].

References

- [1] <https://www.semtech.com/lora>.
- [2] <https://www.st.com/en/development-tools/sw4stm32.html>.
- [3] <https://www.st.com/en/embedded-software/i-cube-lrwan.html>.
- [4] <https://www.st.com/en/evaluation-tools/b-l072z-lrwan1.html>.
- [5] <http://www.openstm32.org/homepage>.

5 Appendix

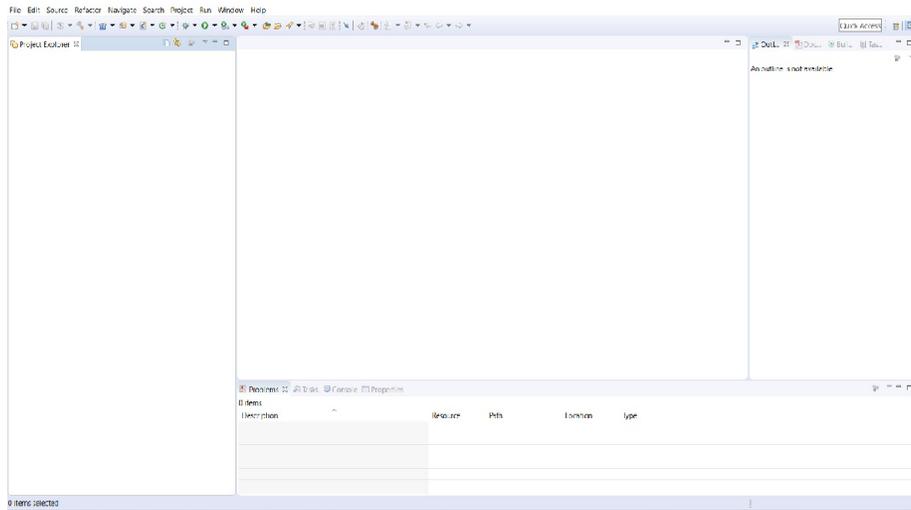


Figure 1: Development Environment after successful setup

