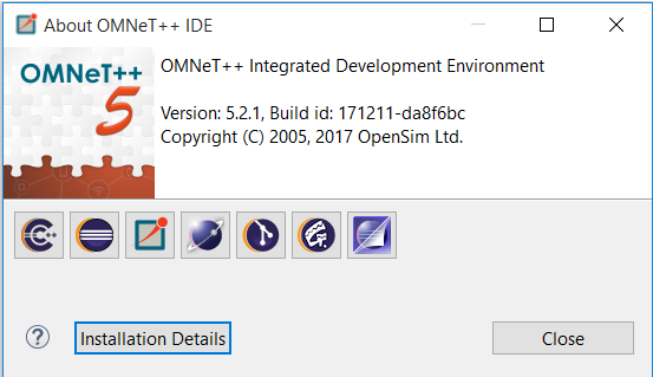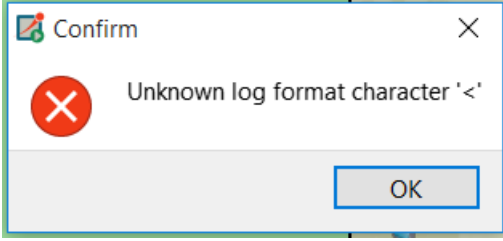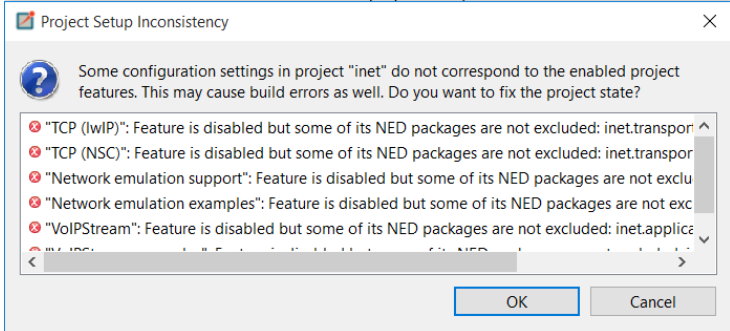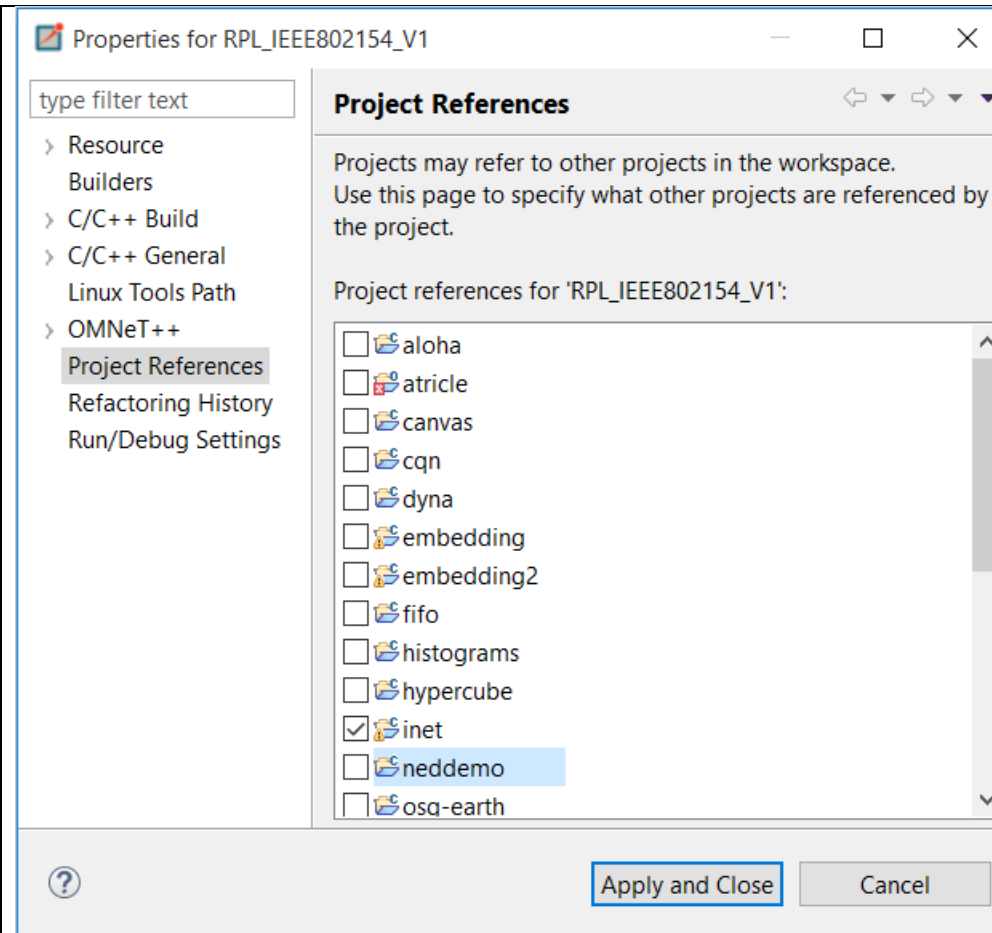# Implementing RPL in OMNET ++

Ref Your paper: Implementation of RPL in OMNet++ 2021	My Work
	I have OMNet++ 5.6.2. I Un-installed it.
V. HOW TO INSTALL AND USE THE IMPLEMENTATION The implemented code is openly available in GitHub [20]. To install it, the next steps should be followed: • Install OMNeT++ – Download OMNeT++ 5.2.1 [9]. – Let OMNeT++ install and use its compiler.	Downloaded the OMNeT++ 5.2.1 source code from https://omnetpp.org/download/old.html OMNeT++ 5.2.1 📅 2017-12-11 Highlights of this release are the fine-tuning of result recording and processing (especially around weighted statistics); many bug fixes and improvements in Qtenv; makefile changes to allow DEBUG and RELEASE builds of models to co-exist, and several related changes in the IDE. READ MORE 🐧 LINUX　　🪟 WINDOWS　　 MAC OS　　 CORE (WITHOUT IDE) Size: 248MB　MD5: 4c73e5a3e23ab12fb3b9d3689e2a8429　　　DOWNLOAD ⬇ IPFS: ipfs get /ipns/ipfs.omnetpp.org/release/5.2.1/omnetpp-5.2.1-src-linux.tgz
After extracting and before installing OMNeT++, change "PREFER CLANG=yes" to "PREFER CLANG=no" in the "configure.user" file in your OMNeT++ installation folder.	Exracted All files. Before Installing, do the following: Open file "configure.user" in NotePad in your OMNeT++ installation folder. Change the parameter "PREFER CLANG=yes" to "PREFER CLANG=no" .
– Install OMNeT++.	• Installed OMNet++ by following steps: 　o Start **mingwenv.cmd** in the omnetpp-5.2.1 directory by double-clicking it in Windows Explorer. 　o Then enter the following commands: 　　▪ $ ./configure 　　▪ $ make [It take a long time in installing and configuring]. [Finally message appears: Now you can type "omnetpp" to start the IDE.] About OMNeT++ IDE　　— □ ✕ OMNeT++ 5 OMNeT++ Integrated Development Environment Version: 5.2.1, Build id: 171211-da8f6bc Copyright (C) 2005, 2017 OpenSim Ltd. ❓ [Installation Details]　　　　[Close]
– To check whether OMNeT++ correctly works or not, run an example of OMNeT++ such as dyna, aloha, tictoc, etc.	• Running the Samples: On command prompt: 　a. type cd samples 　b. type cd aloha 　c. Run a sample: ./aloha 　d. It loads Graphical screen Qtenv with following error

	Confirm ✕
	❌ Unknown log format character '<'
	OK
	
	     e. Clicking OK, will end up the simulation.
	• Solution to the Problem: Got Solution From Google-> StackOverflow
	     a. Locate and delete file ".qtenvrc" from C:\USERS\AZ folder.
	     b. Then run the simulation of ALOHA network.
	     c. It is now OK. All simulations are running correctly.

• Install INET
– Download INET 3.6.3 [19].
– Install and build INET.
	• Download INET 3.6.3:
	    o https://inet.omnetpp.org/2017-12-22-INET-3.6.3-released.html
	    o File name downloaded **: inet-3.6.3-src.tgz**
	• Unpack it into the directory of your choice:
	    o Use 7-Zip/Unzip program to Extract al files in TGZ file
	    o A folder named "**inet-3.6.3-src**" created.
	• It has file: " **inet-3.6.3-src.tar**"
	• Installation of INET 3.6.3
	    o Start the OMNeT++ IDE, and import the project via *File -> Import -> General-> Existing Projects to the Workspace*. A project named INET should appear. Click Finish to install.
	    o Build with *Project -> Build* All
	        ▪ An Error message appears: "Inconsistency error by some projects". Click Ok to proceed.
	        ▪ Building the project: It take a long time to build.
	        ▪ Build ended with the following error message:

– To check whether INET correctly works, run an example of INET such as inet/examples/adhoc/ieee80211, etc.	• Running of INET Examples:
	    1. Inet-> Examples->AODV->omnet.ini runs correctly
	    2. Also Inet-> Examples->DHCP->omnetpp.ini runs correctly

• Install the RPL implementation
– Since the simulation files only include implementation code, the project may not be probably imported by the IDE, and a new OMNeT++ project must be manually created. Therefore, please follow the next substeps:
∗ Click on the menu of "File".
	• All steps are followed carefully
	    1. Created the New OMNet++ Project and named it as "RPL_IEEE802154_V1"
	    2. Copied the RPL code from GitHub in the same Hierarchy as it is:
	       https://github.com/NETSERV-UAH/RPL/tree/master/OMNeTpp5_2_1_INET3_6_3
	    3. Following is the screen shot

∗Select "New".
∗Select "OMNeT++ Project".
∗Type the name of project.
∗Click on "Next".
∗Select "Empty Project".
∗Click on "Finish".
∗Copy all files/folders in the folder to the created project folder.
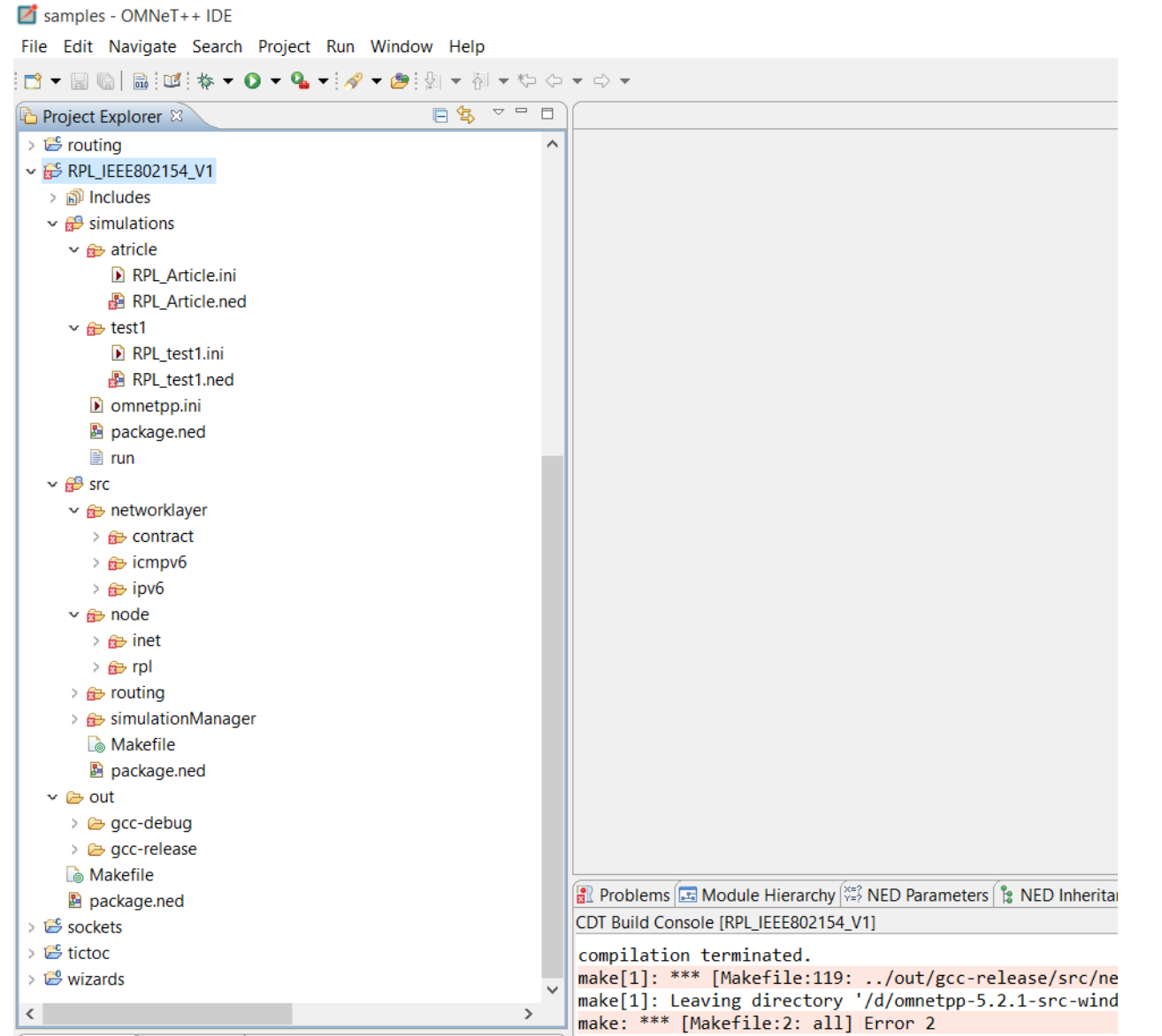
– Introduce INET to the project as a reference/library, Therefore, please follow the next substeps: ∗ Right-click on the project in "Project Explorer" window * Select "Properties". ∗ Select "Project Reference" in the left list. ∗ Select "INET" in the right list. ∗ Click on the "Apply and close".	
– Build and run the project.	Following is the error: