Installation guide
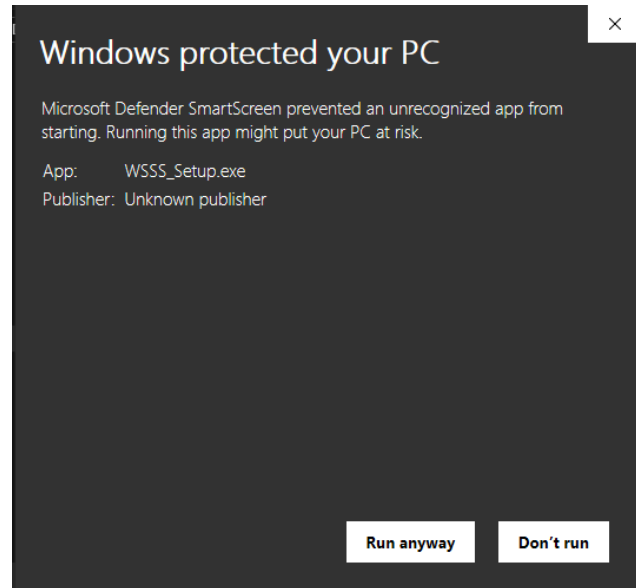
1. Download the installer from github:
   https://github.com/Team-Controller-NAU/Controller/blob/main/project-docs/WSSS_Setup.exe
   a. This installer is not signed as of writing, so this windows defender warning will occur. Press "More info" -> "Run anyway" to continue with the installation.
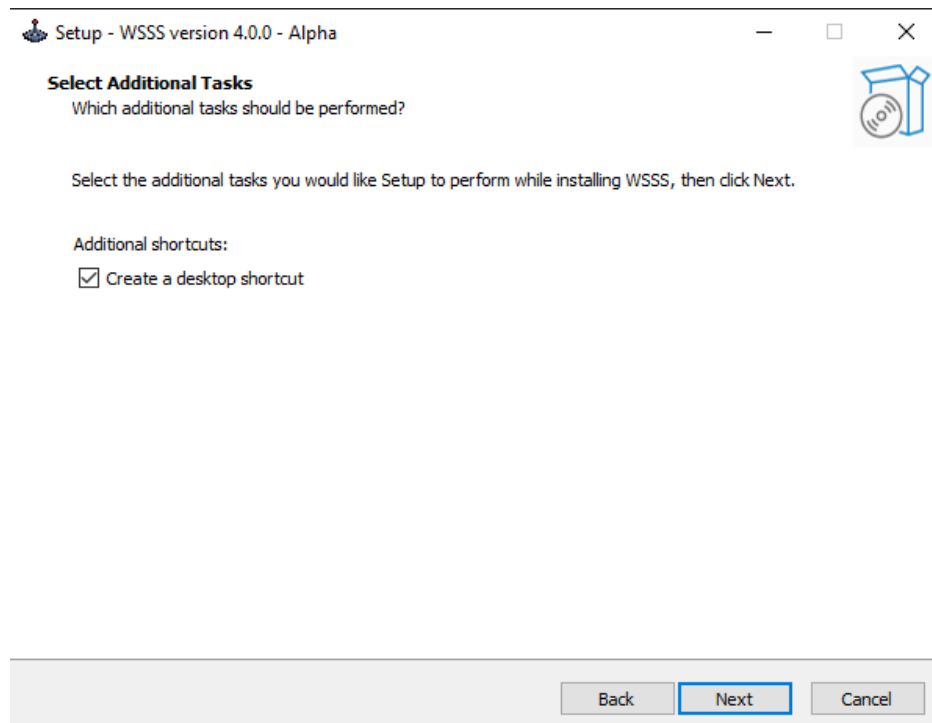

2. Once installed, open the installer. The installer will open to the screen below. This is to accept the end user agreement the QT Framework uses.
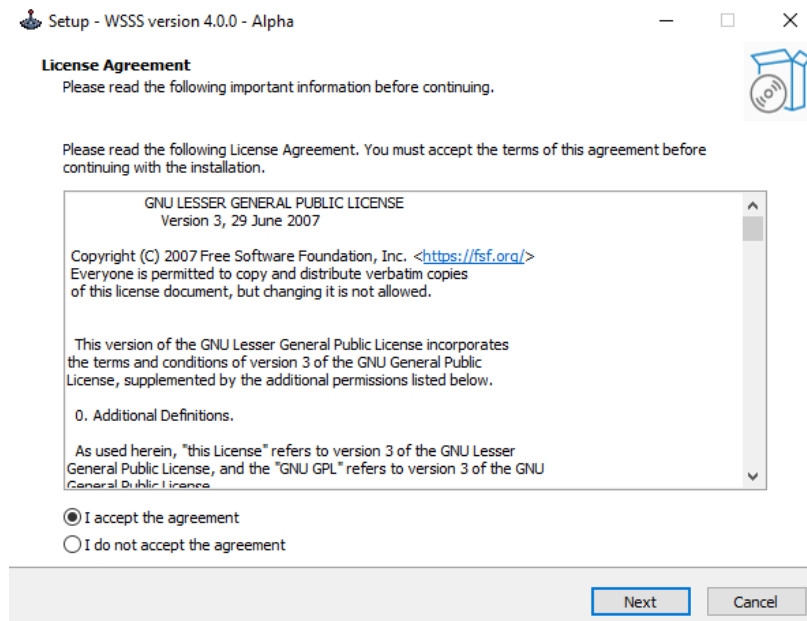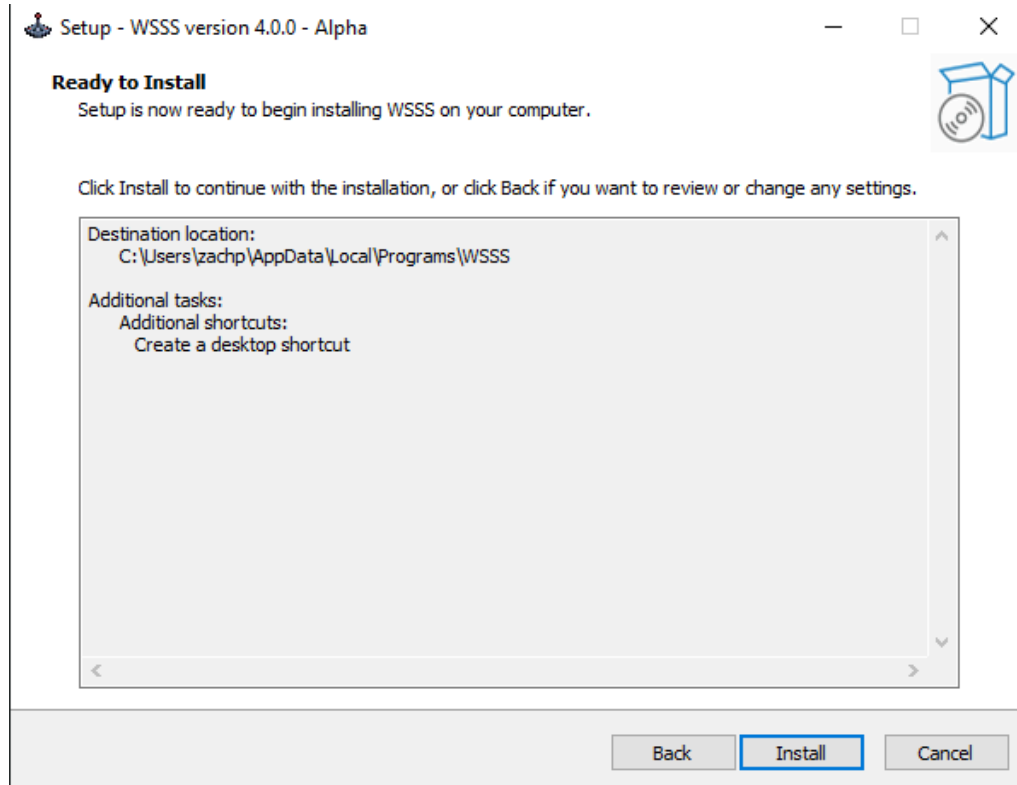

3. Once accepted, the installer will then show this screen. You can select where the application is installed.
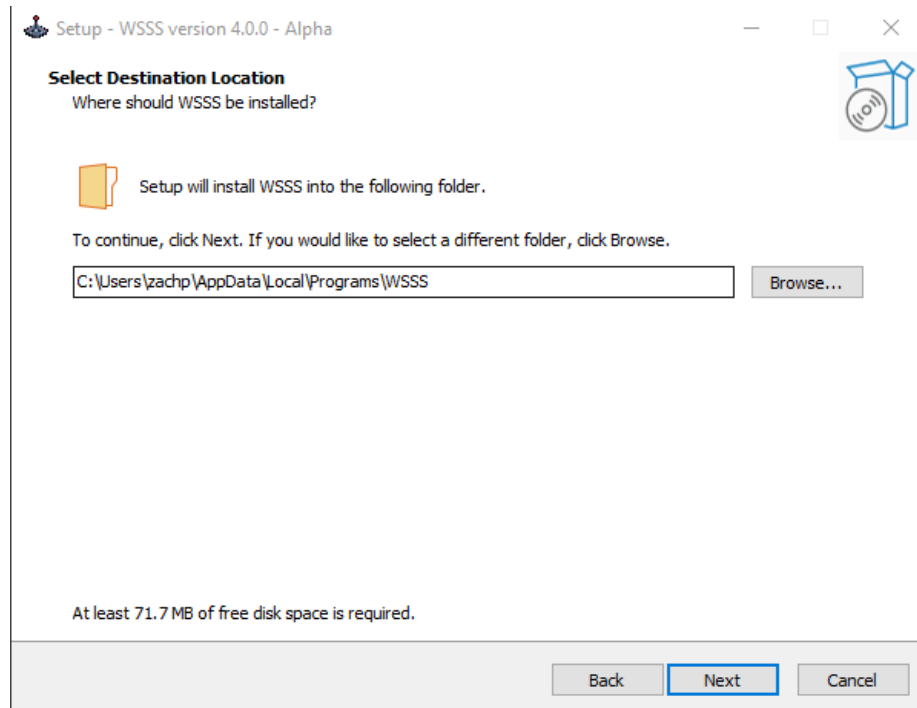
4. This screen shows the option to create a desktop shortcut.

5. This final screen displays the installation confirmation. After clicking the install button, the application will download and install on to the user's computer.

[OPTIONAL] Installing Virtualized Serial Ports

For testing serial communication, we often used virtualized serial ports to facilitate communication between our controller simulator and our application without the need for serial hardware. To do this you must install 2 serial drivers and a serial bus to connect them. We used an application called com0com (the installer is automatically downloaded when visiting the link).

Once you launch the installer, we recommend you uncheck the box labeled **CNCA0<->CNCB0** It is meant to automatically set up the ports but we have experienced issues using this feature.
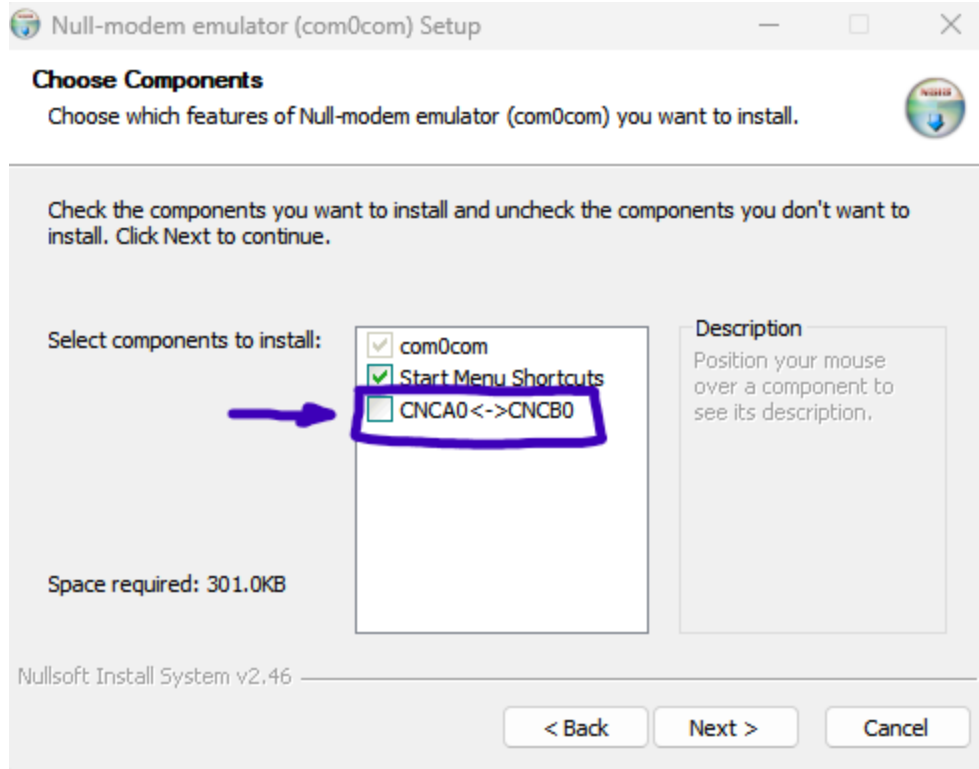
Continue with the setup until you get to the "**Finish"** page. Here you will check "**Launch Setup Command Prompt**" then finish. In the command prompt you can type "help" to get a list of commands to set up and customize your ports.
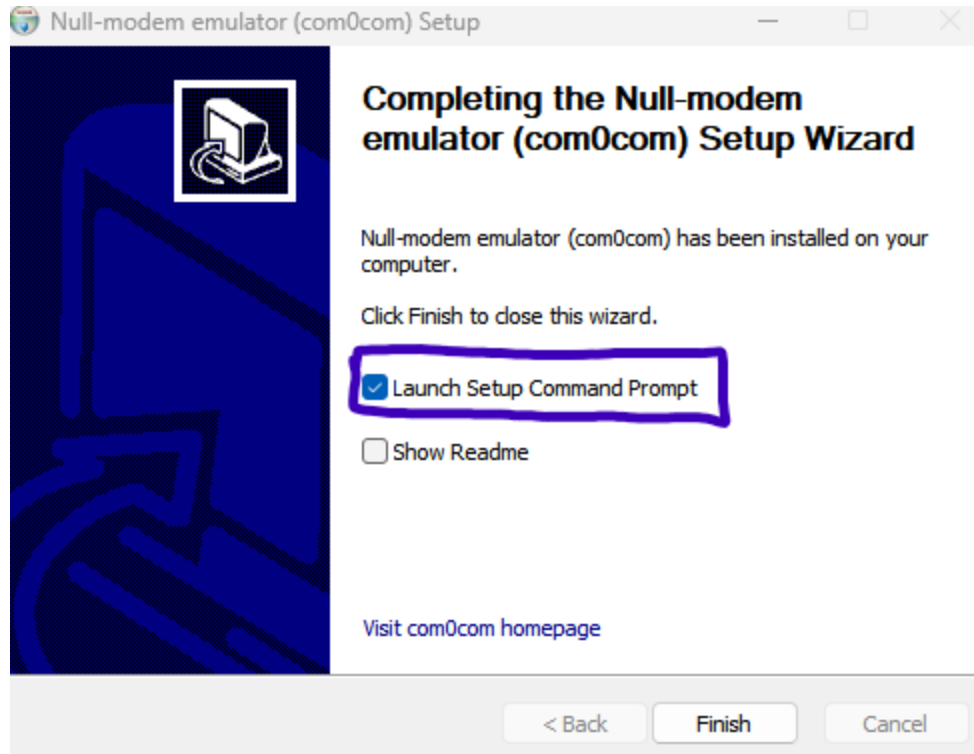
For example in the command prompt you can enter the following commands (with your desired port names… port names should begin with COM followed by a number) to create the virtualized ports and check if the process was successful.

install PortName=COM9 PortName=COM10

And then to list the current ports to confirm success, type:

list

After this process, your virtualized ports will be accessible by our application and you can close the command prompt. If you experience issues, you can visit online forums and/or the ReadMe documentation for troubleshooting help.

To use these serial ports in the application, select one of them on the **Developer page**, then click **start CSim**. Navigate to the **Connection page**, select the other port and click **connect.**

Additional Information

Tool-tips
Many of the elements on the application have tool-tips which can be viewed by hovering your mouse over them for 1 second. After which you will be given a brief description of what the purpose of the element is.

Cross-Session Settings
The **connection page** offers the option to save your preferred serial port and settings using the **Save as Default** button. The next time you log into the application your preferred values will be automatically set for you. A similar feature is offered in the **settings page** denoted by the gear icon. This page automatically saves your settings for next time with no need to specifically set them as needed in the connection settings page. Finally the **log file location** selected in the **events page** is also stored for use in your next session without the need to specifically tell the program to save it.

Notifications
Notifications are given as a means to keep the user updated on some of the processes that are occurring during the program's execution. Green notifications denote normal operation while red denotes some type of error has occurred. If everything is working correctly, you should never see any red notifications. However if they do occur, a description of the problem will be given to provide you with some idea of the nature of the issue. Red notifications will change the notification page icon to include a red dot in the top right of the bell in case you missed the notification pop up text.

Log Files
Log file names are generated by our application with -A or -M at the end of the name representing autosaved and manual log files respectively. To identify the auto saved log file in use for a particular session, you can view the notification page to get the path and name. The number at the beginning of the name is used to distinguish log files from one another so the

program can delete the oldest one if the log file limit is reached (this limit can be changed in the settings page). If the number at the beginning of the file name is changed, it will affect the functionality of the auto delete feature. Additionally if text within the log file is changed, we may not be able to load its data later with the **load events from log file** feature on the **events page**. To permanently save an auto saved log file so that our program doesn't eventually delete it, you can change its name to anything you like (removing the -A suffix will prevent the program from considering it an auto saved file and it will be ignored).

<u>Developer Page</u>

Various features are provided in the developer page for interacting with the application from the perspective of the weapon controller. This page was not formally tested and bugs may be present. Since it will not be included in the final user release version of the application, we didn't bother making this page bulletproof. However at the time of writing this, we have not had any issues using its features.

<u>Conditional Features</u>

Some elements namely the connection settings, log file location, and load events from log file feature are disabled during an ongoing connection.

Research

Administrator Rights

When creating the installer through the Inno Setup (https://jrsoftware.org/isinfo.php), a setting can be enabled and disabled to prevent the use of admin rights. This can be seen in the script Inno Setup generated to create the installer. Also included below is documentation describing the *PrivilegesRequired* line.

```
; Remove the following line to run in administrative install mode (install for all users.)
PrivilegesRequired=lowest
```

https://jrsoftware.org/ishelp/index.php?topic=setup_privilegesrequired

Microsoft SmartScreen

Microsoft SmartScreen warns users when they attempt to install/run a foreign application that does not have a verified publisher attached to it. We have researched some methods for overcoming this problem:

a. Submit for code review directly to Microsoft for each latest release (can take up to a week or longer each time)

b. Purchase or use an existing Extended Validation (EV) code signing certificate by an approved Microsoft third party ($250-700)

c. Purchase or use an existing Organization Validation (OV) code signing certificate by an approved Microsoft third party ($100-500)