Silabs Connect Windows Application
User Guide
Version 1.0

Table of Contents

1 Introduction

This document explains how to run the Silabs Connect application and execution steps. This application will connect to the RS9116 BLE device and use this connection to get the WLAN scan results to connect the RS9116 WIFI to Desired AP.

2 Prerequisites

2.1 Required Hardware tools

1)Windows PC.

2.2 Required Software tools

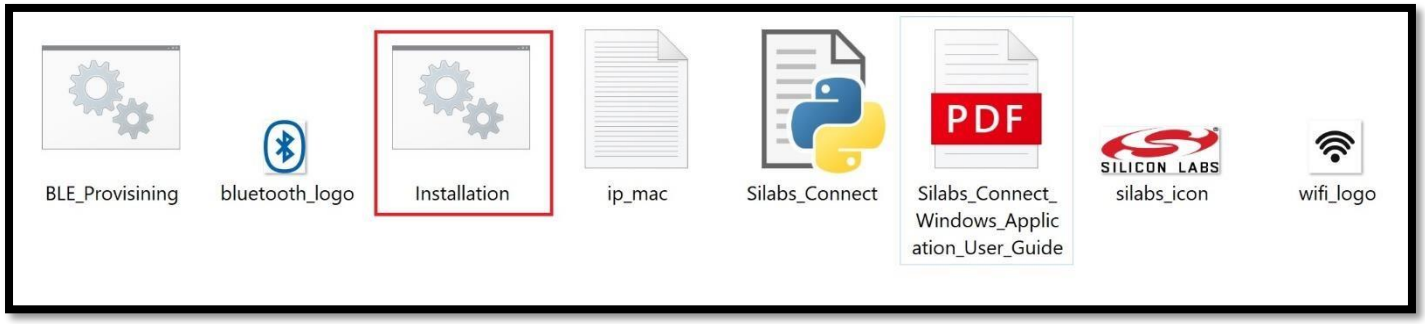
1) Python version 3.7.9 (https://www.python.org/downloads/release/python-379)

2) Install the “bleak” & “pillow” python packages (**“pip install bleak”, “pip install pillow”**)

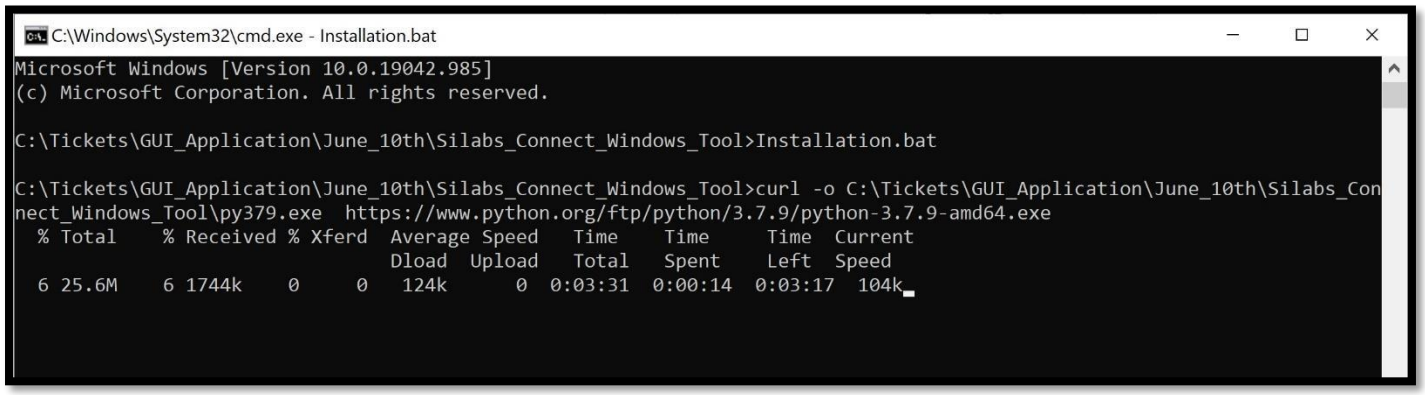
Note: - Make sure python default version should be 3.7.9 in the PC

The package consists of a **batch file** to take care the installation process. Below are the steps need to follow for the installation.

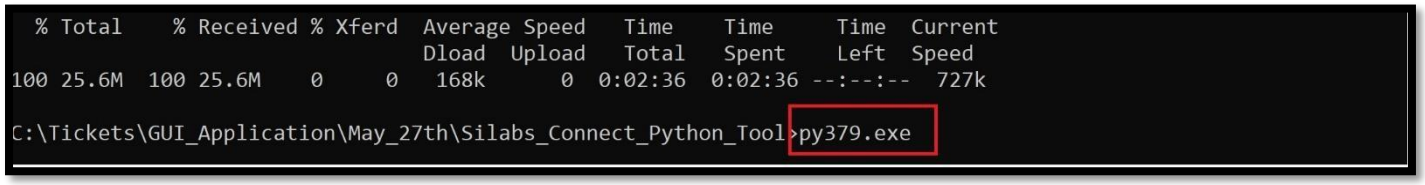
a) Find the “**Installation.bat**” in the below folder structure for installation of package.



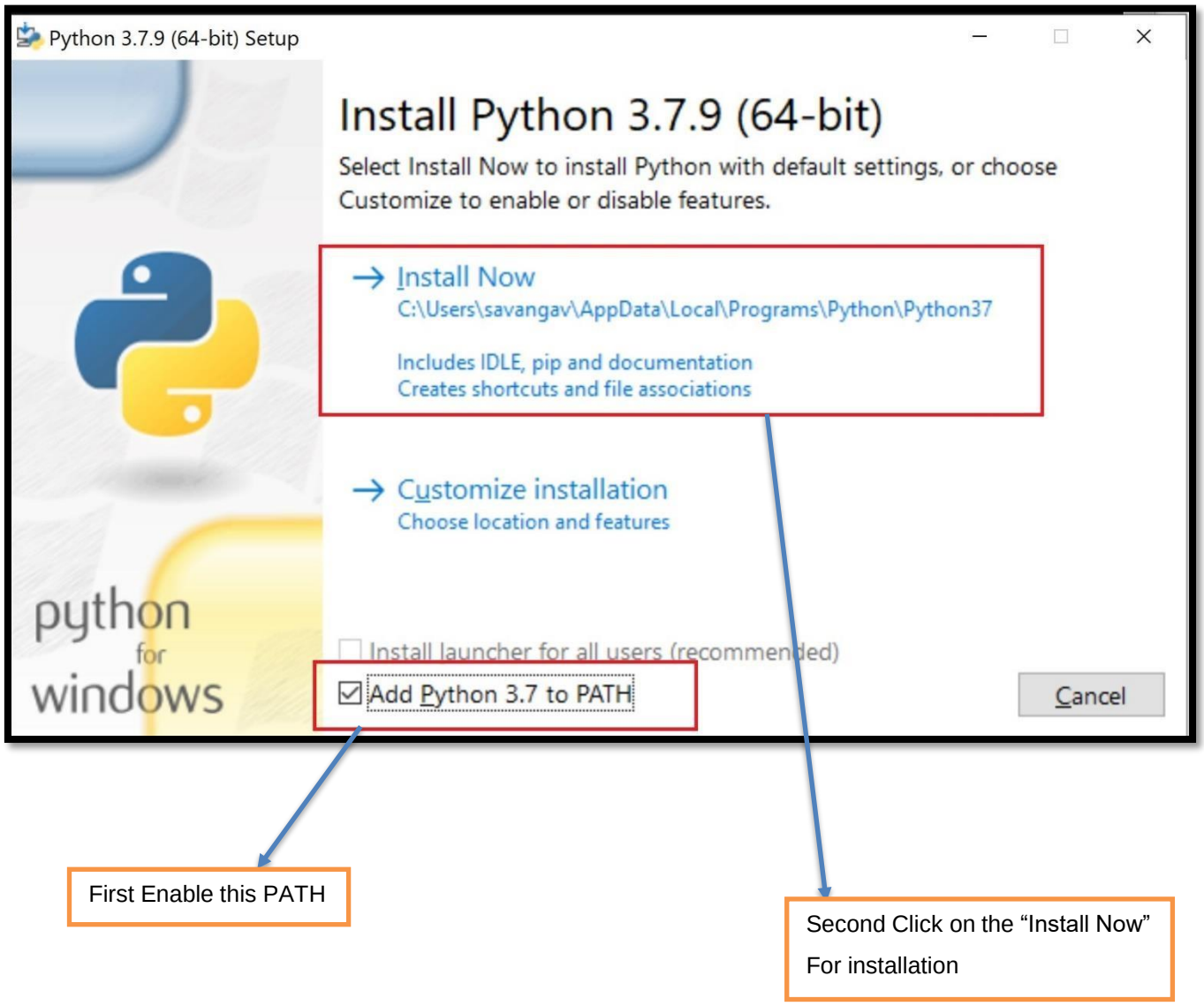
b) Click on the “**Installation.bat**” file in the folder for the installations of python and required packages. Check the below image which will show the installations.



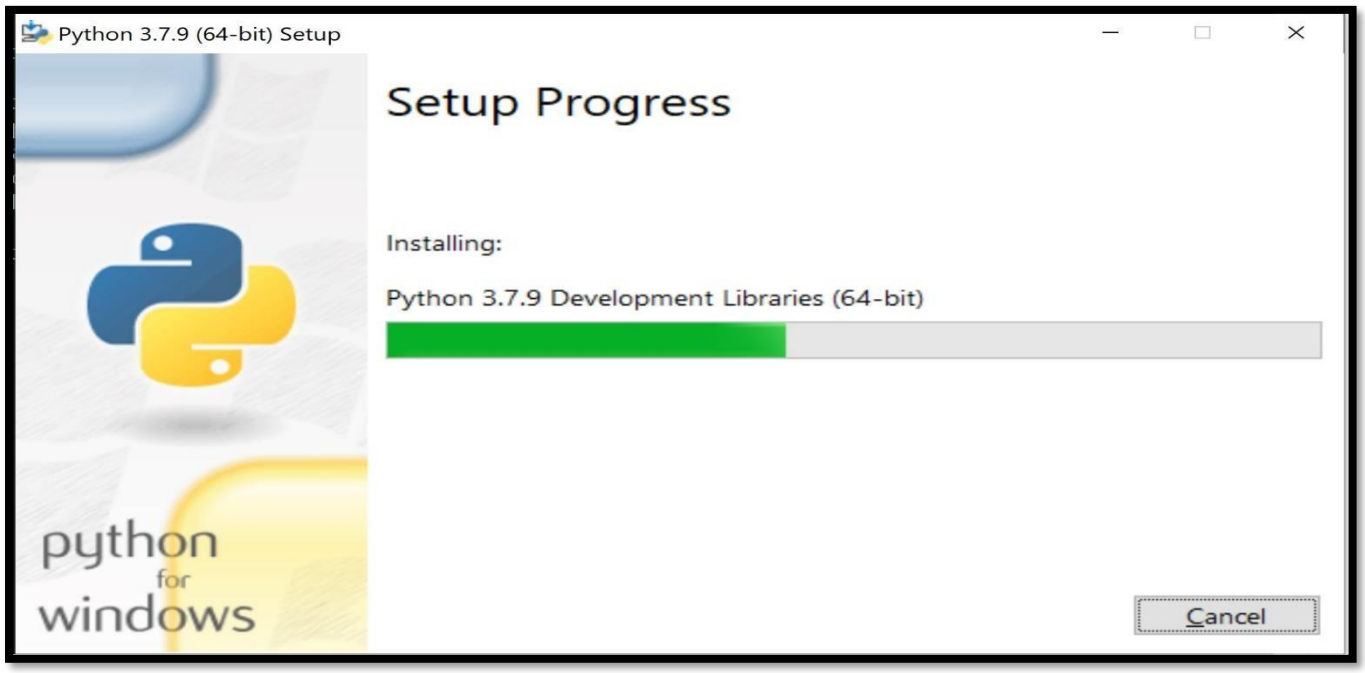
c) First it will download the “python-3.7.9” package.

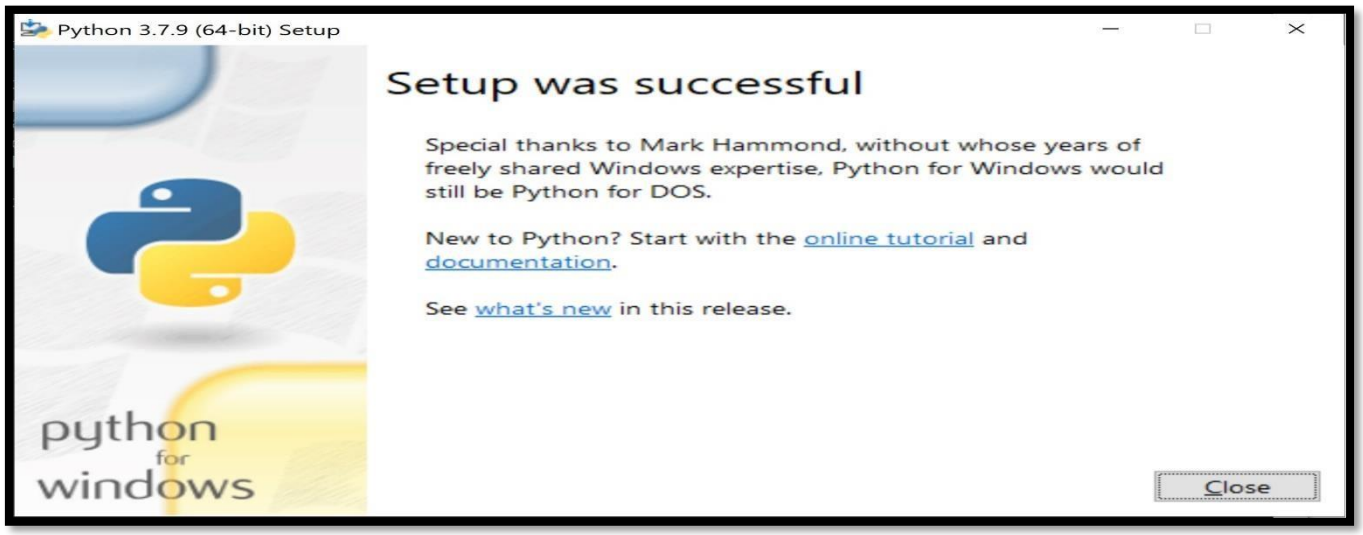


d) After successful downloading of “python-3.7.9” file, pop-up will come. Enable the “**Add Python 3.7 PATH**” next click on the “**Install Now**”.

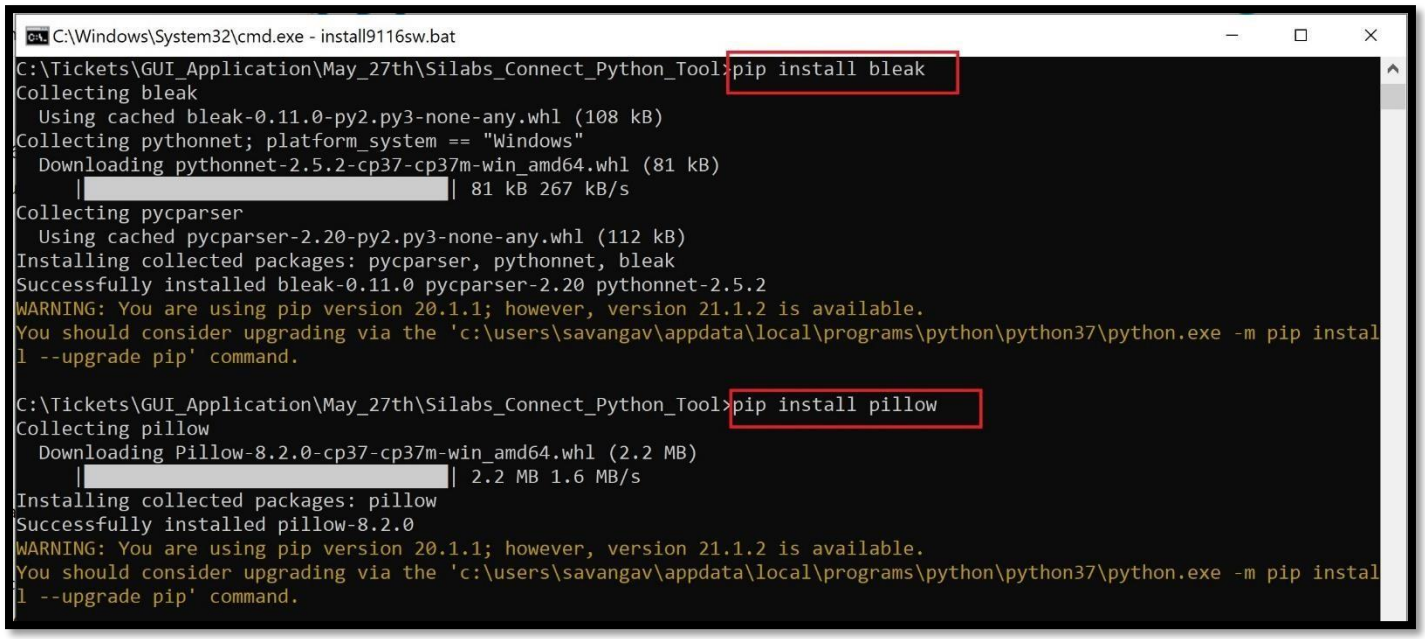


e) When clicked on the “**Installation Now**”, fill will start to install and after successful it will ask for the Finish.





f) Python is installed successfully, now batch file automatically install the "**bleak"** package, after this one more package "**pillow"** also install.



g) Now all the required packages are installed go for the execution process.

3 Silabs Connect Application Execution Steps

By using the Silabs connect application we can connect to the desired access point by configuring RS9116 as a WLAN station using BLE Provisioning. Here explaining about the different types of execution modes.

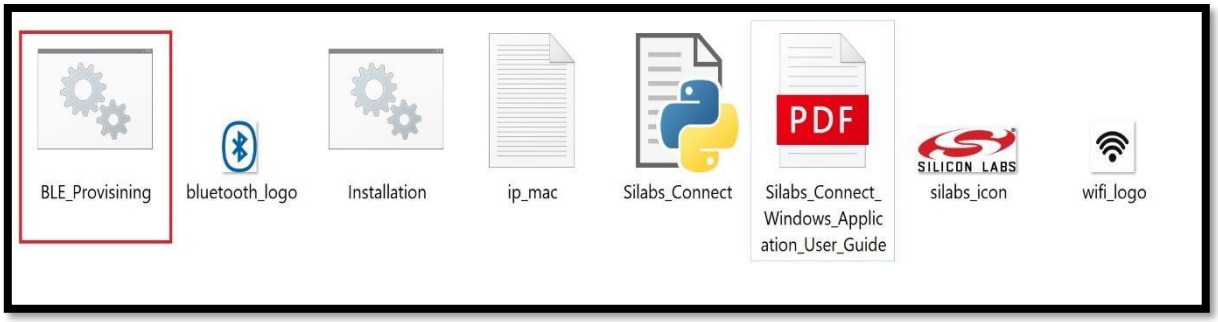
1)RS9116 WLAN Connection Using BLE Provisioning.

2)RS9116 BLE Disconnection After Successful Connection.

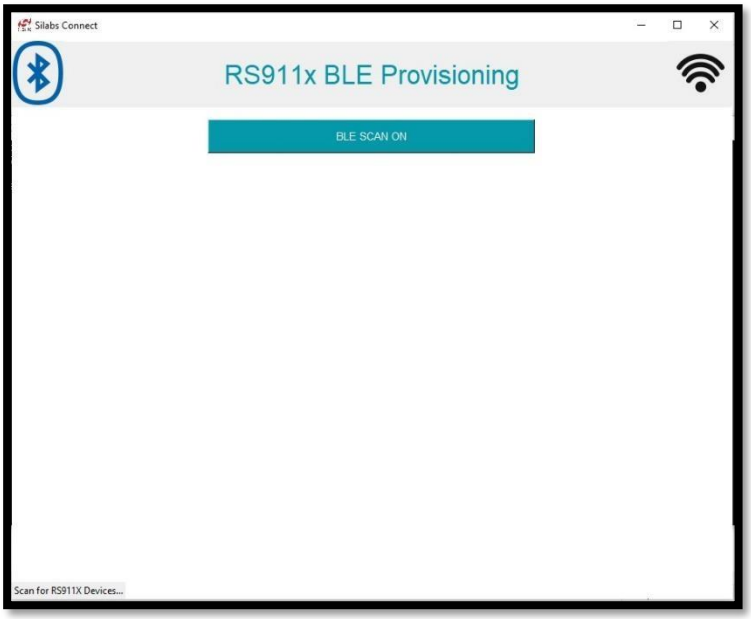
3) Initiate RS9116 WLAN Disconnection After Successful Connection.

3.1 RS9116 WLAN Connection Using BLE Provisioning.

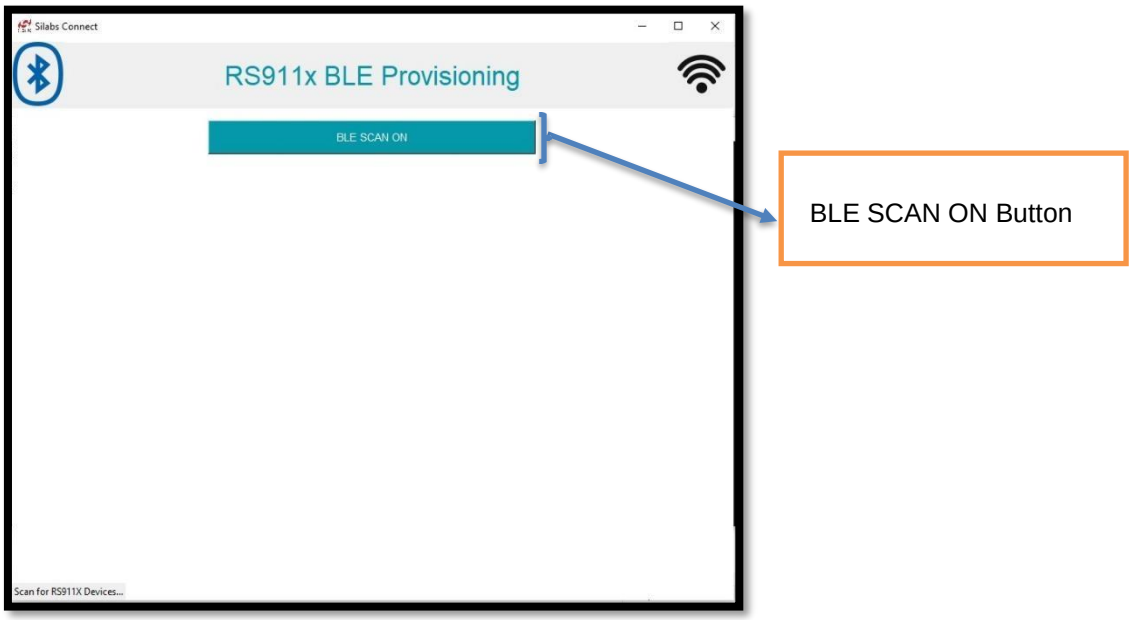
1. The package contains the one more batch file "**BLE_Provisining.bat**". Find the batch file in the below picture.



2. Click on the "**BLE_Provisining.bat**" file for running the Provisioning application.



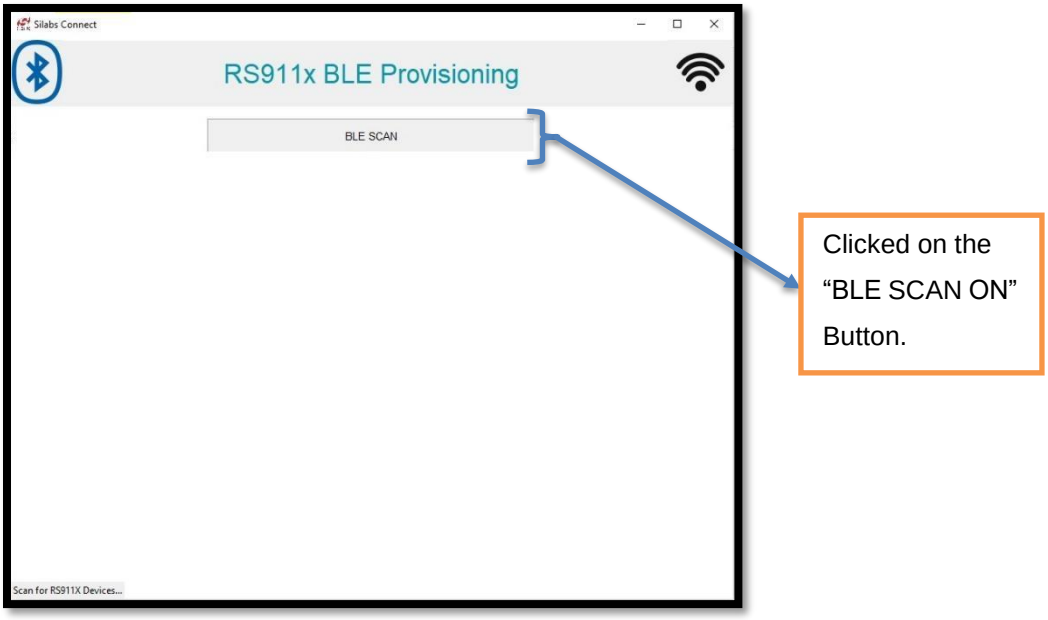
3. Executing the application in the command prompt as stated in the above point will open the GUI (with the "BLE SCAN ON" button.)

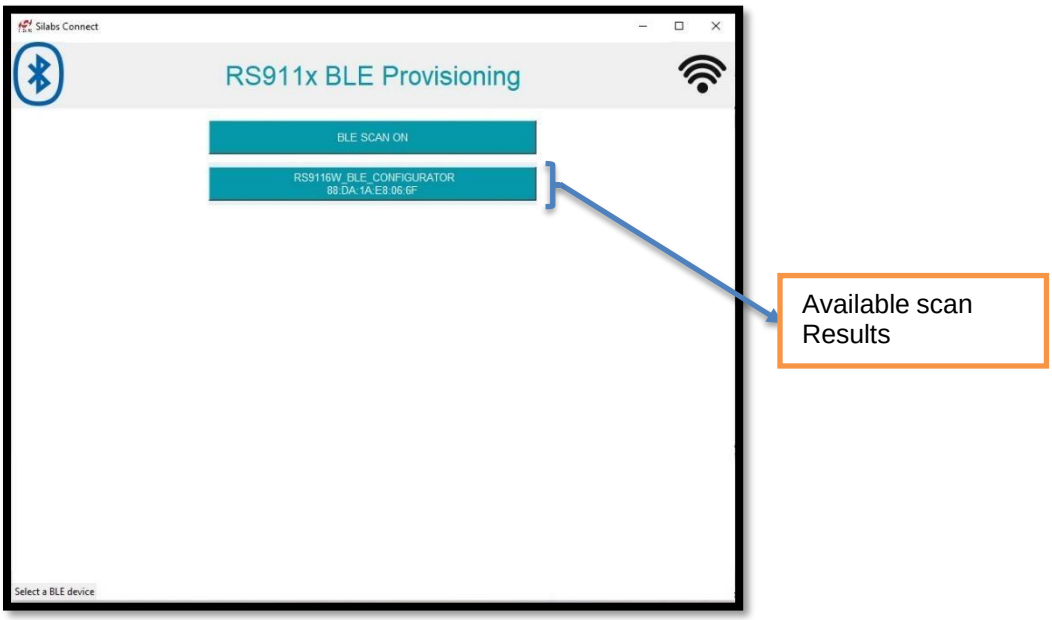


4. When you click on the "**BLE SCAN ON**" button, all the "**RS9116 BLE Devices**" that are available nearby are displayed in the window.

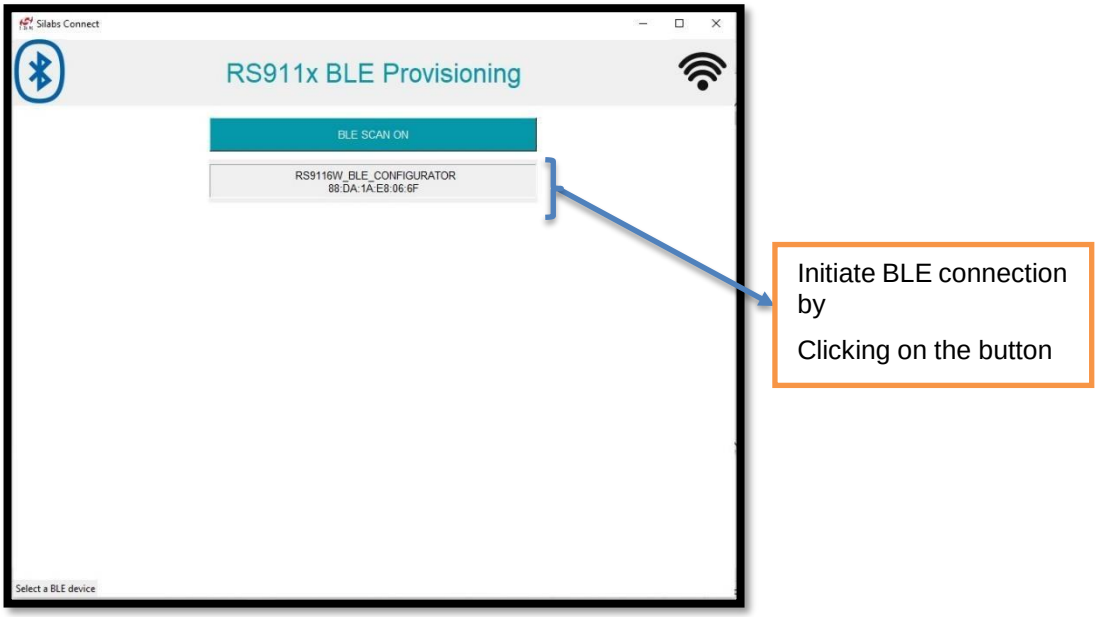
Note: - Until we initiate the connection, it will display the BLE scan results on window.

Note: - RS9116 BLE device should advertise with the name "**BLE_CONFIGURATOR**".

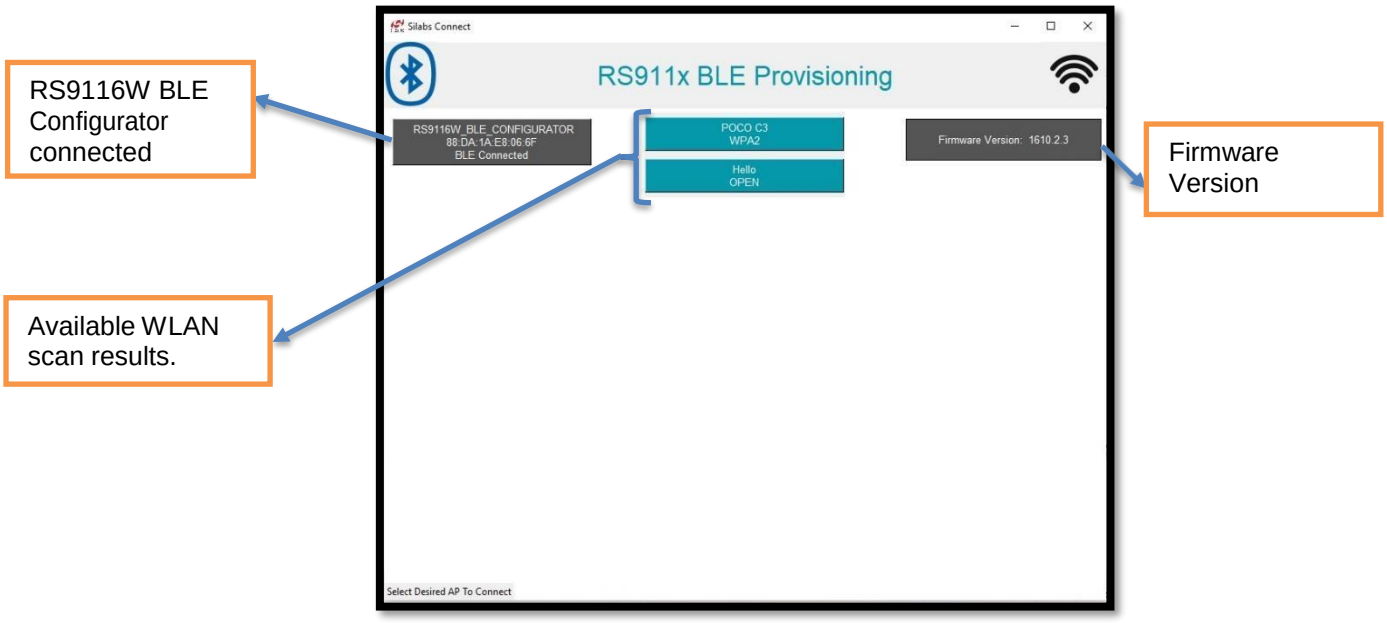




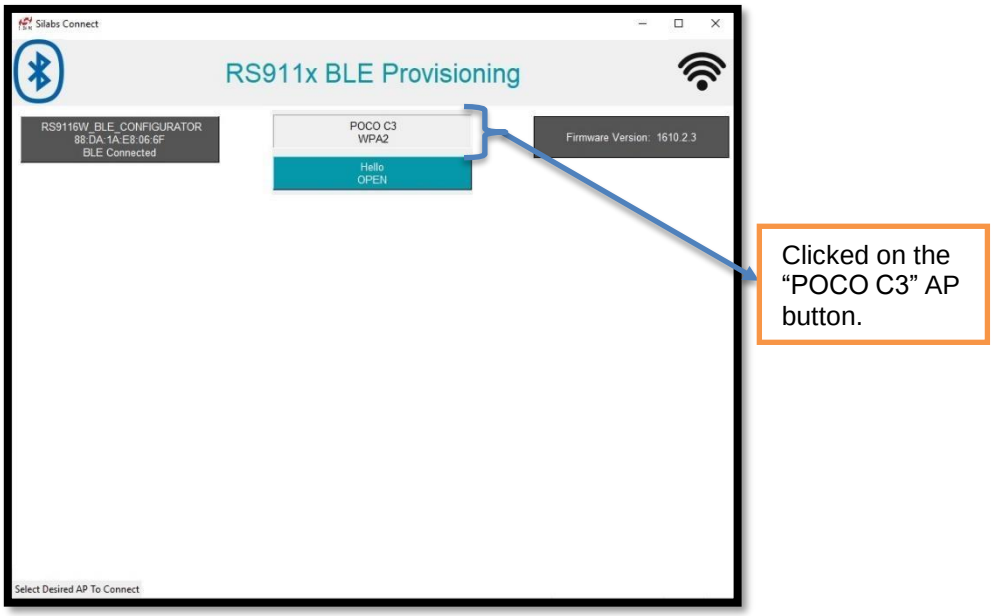
5. Once you got the required RS9116 BLE device on the scanning list, initiate the connection by clicking a button on the available device.

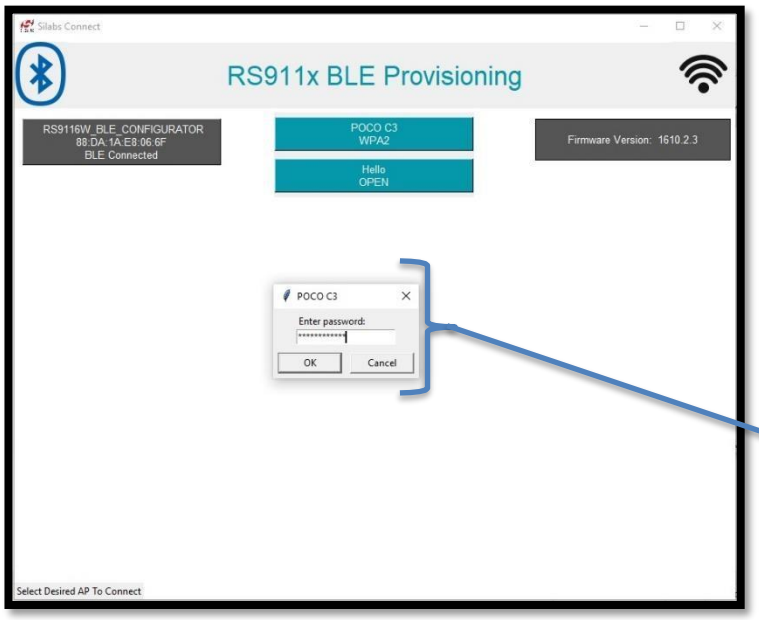


6. After clicking on that button, it will connect to the RS9116 BLE and will display the “Bonded” and it show the “**Firmware version**”. It will show the available WLAN Scan results which are available nearby.



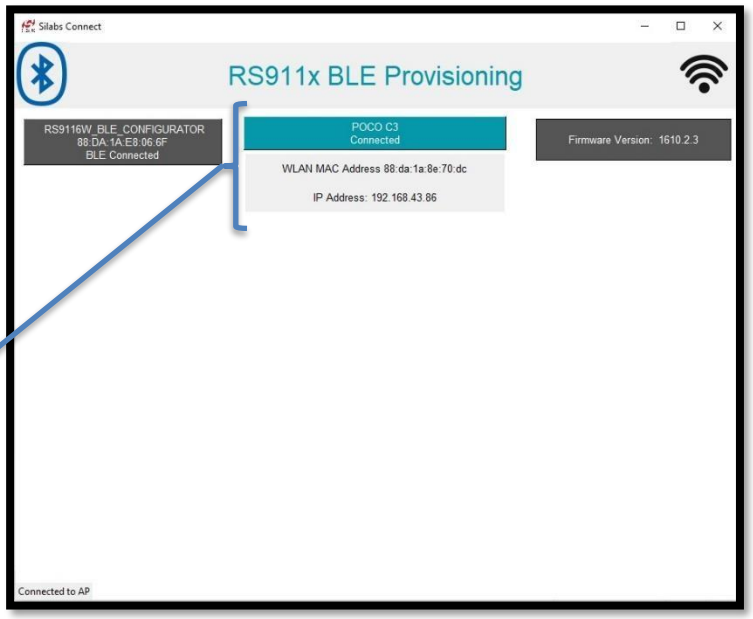
7. By clicking on one of the scanned AP's it will connect directly RS9116 to that particular AP. If Access Point is secured it will ask the password as input but if that Access point as not secured, then directly connect to that Access Point.





Password pop-up for PSK

8. It will connect to that access point and will fetch the “IP & Mac address” after successful connection.

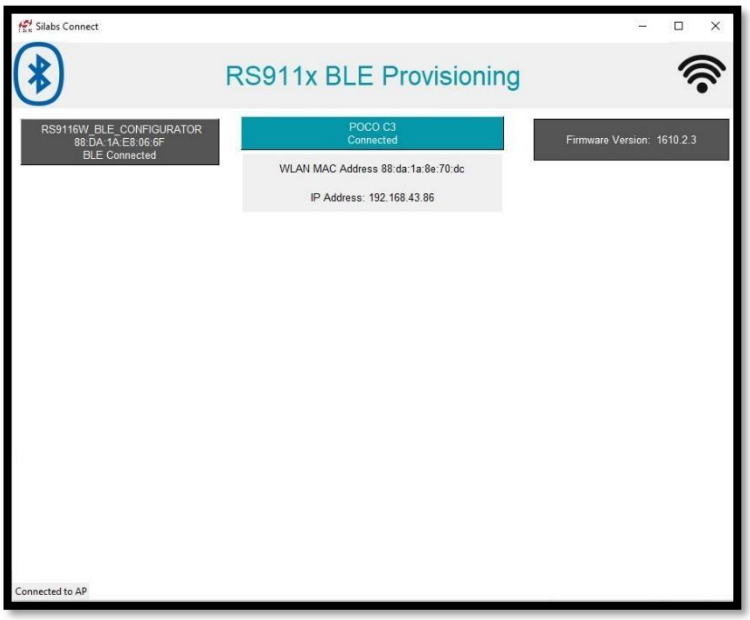


Connected to the Access point and fetched,

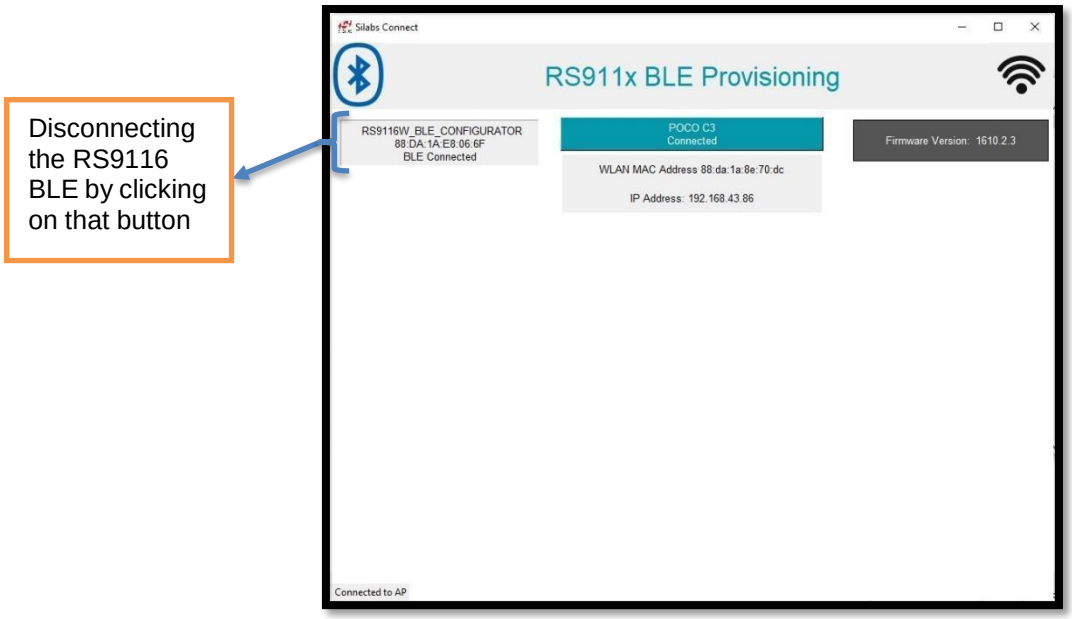
The “IP & MAC”.

3.2 RS9116 BLE Disconnection After Successful Connection

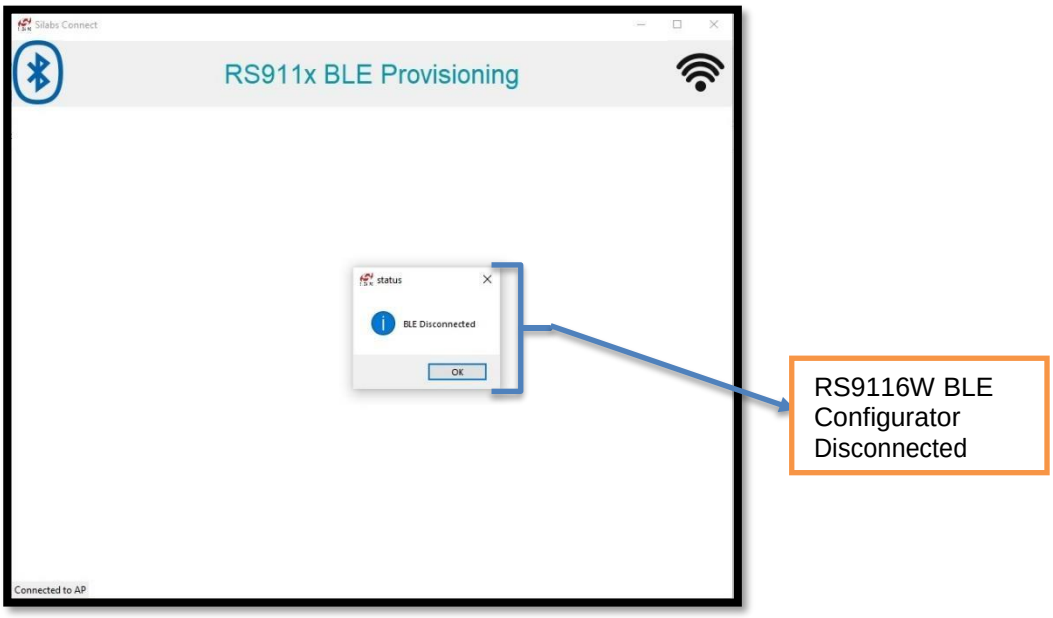
1. Now RS9116BLE and WLAN are connected and fetched the “IP & MAC” address.



2. Now disconnect the RS9116 BLE by clicking the button "**RS9116W_BLE_CONFIGUARATOR**" Bonded button.

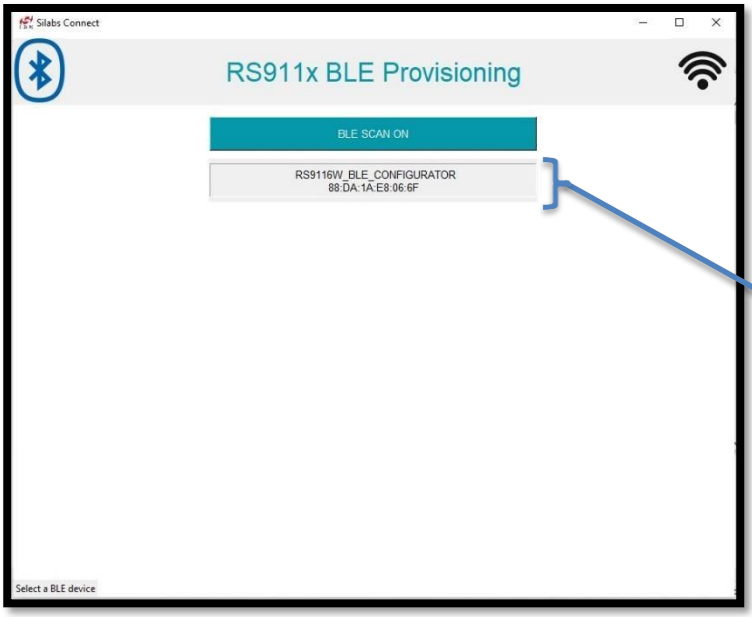


3. After disconnection of RS9116 BLE device, will get the pop-up like "BLE configurator got disconnected". Please click on the "OK" button.

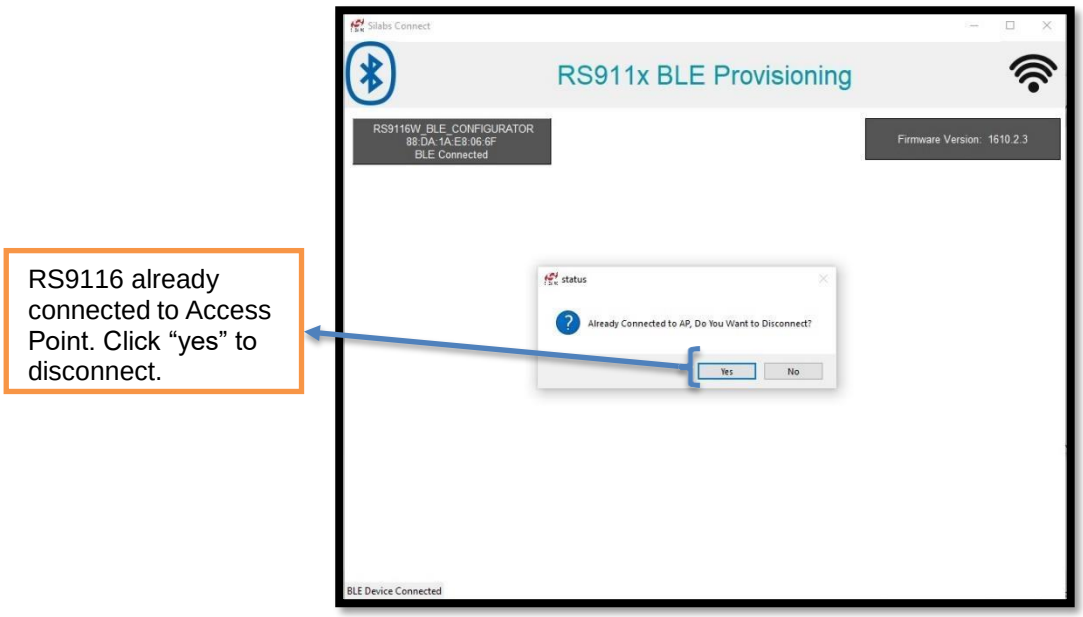


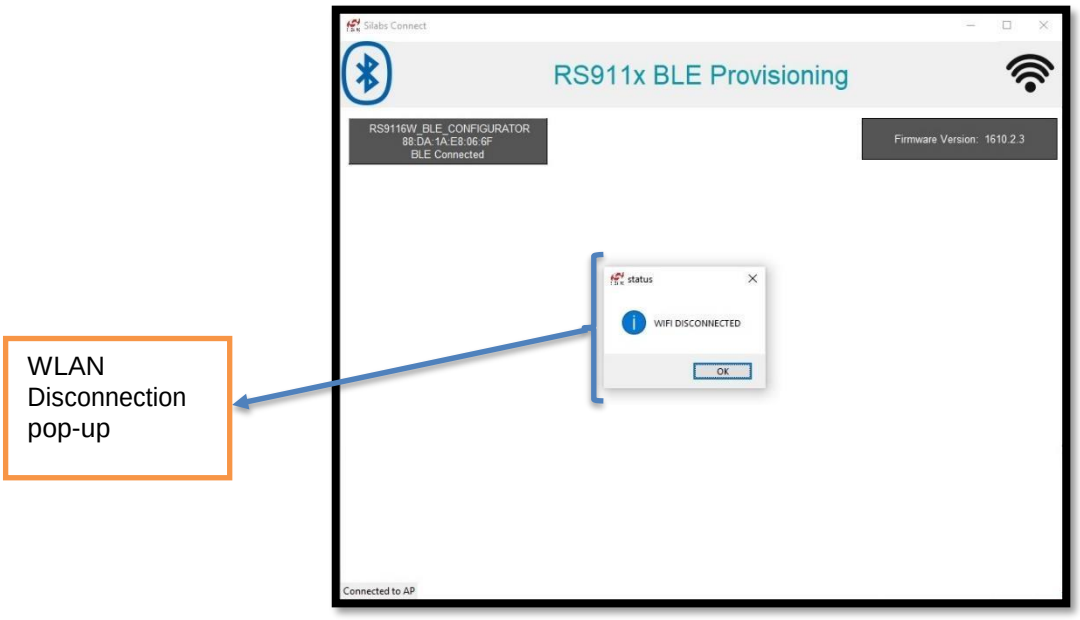
4. After successful RS9116 BLE disconnection, again “BLE SCAN ON” button will appear, by clicking on that button, it will show the available “RS9116W_BLE_CONFIGURATORS” nearby.

5. Once you got the required RS9116 BLE device on scanning list, please initiate the connection by clicking button on the available device.

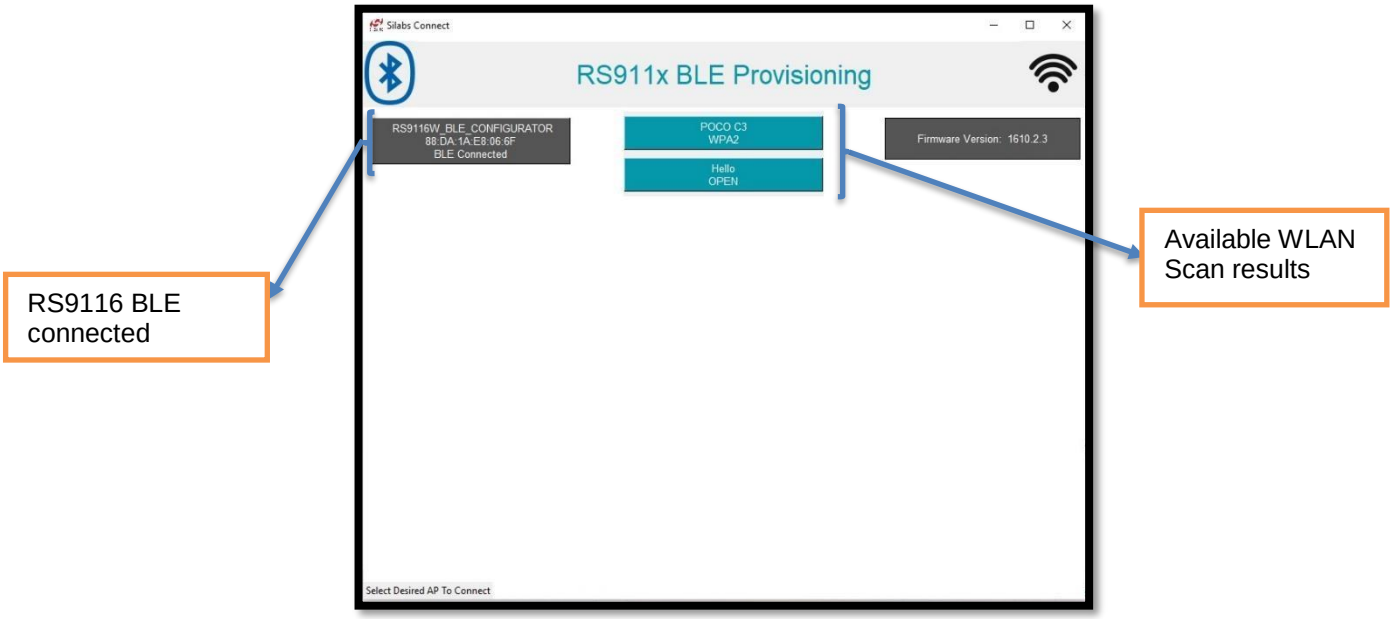


6. After clicking on that button, it will connect to the RS9116 BLE and will display the “Bonded” and it will also show the “**Firmware version**”. Before disconnection of “RS9116 BLE” WLAN is in connected state. So, it will ask pop-up like, “Already connected to AP, do you want to disconnect (yes/no)"?

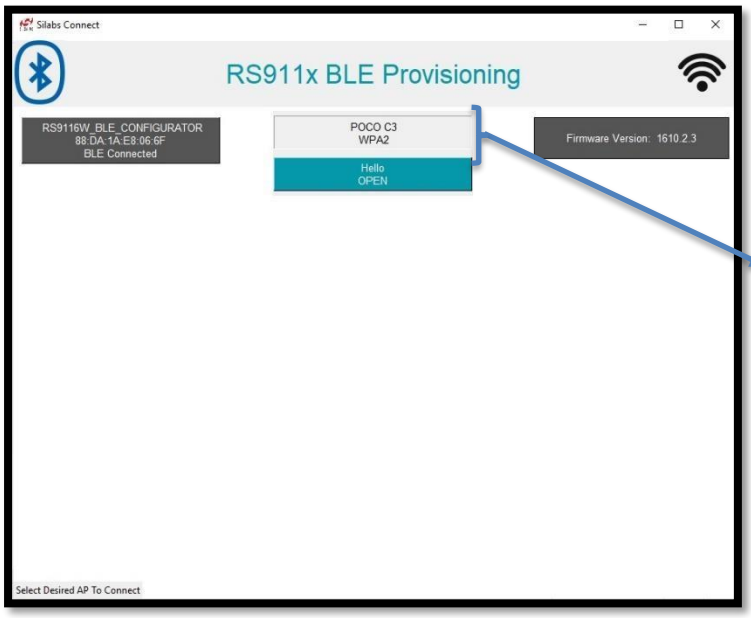




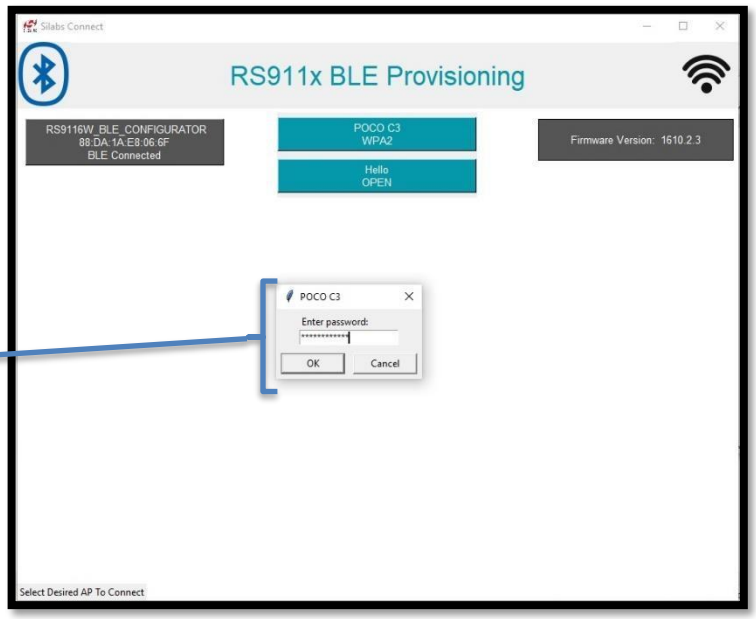
7. Here we are clicking on the “Yes” it will disconnect the already connected AP and will go for scan state and will scan for the available nearby “Access Points”.



8. By clicking on the one of the scanned AP’s it will connect directly RS9116 to that particular AP. If Access Point is secured it will ask the password as input but if that Access point as not secured, then directly connect to that Access Point.

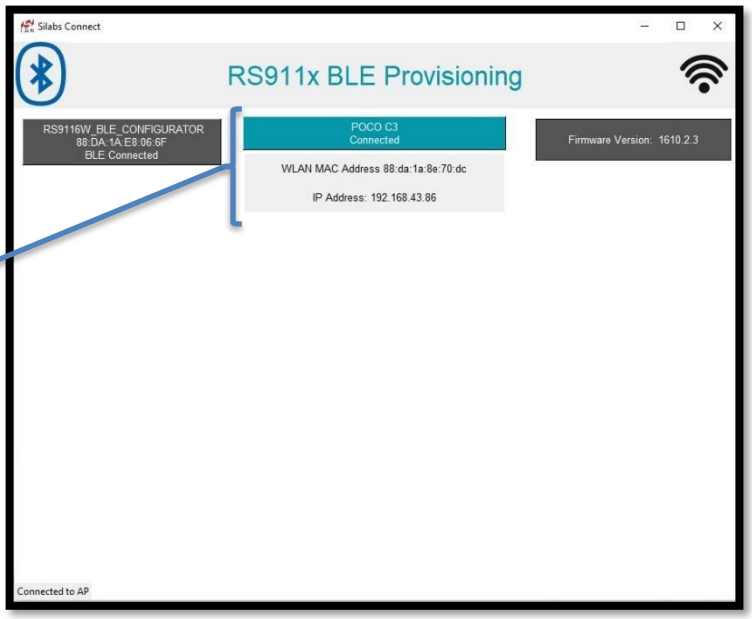


Clicked on the "POCO C3" AP button



Password pop-up
For PSK

9. It will connect to that access point and will fetch the "IP & Mac address" after successful connection.

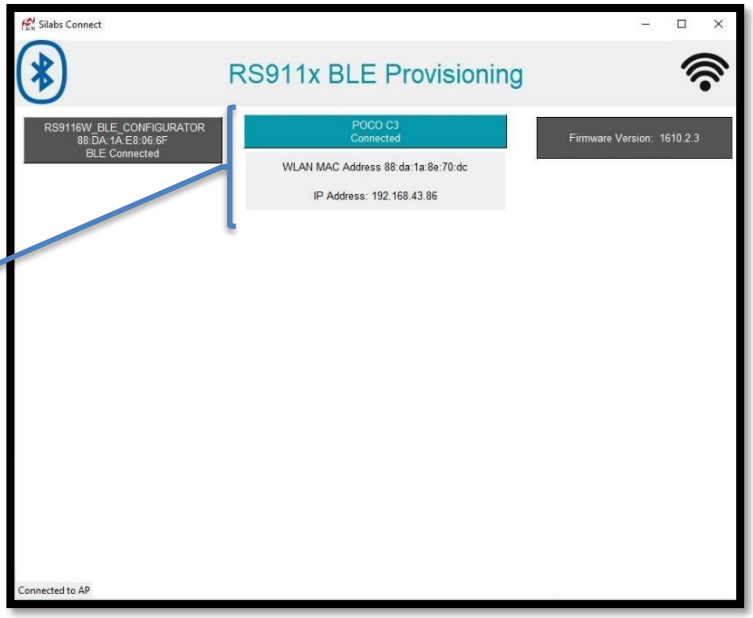


Connected to the Access point and fetched the “IP & MAC” addresses.

10. If we back to the 5th point, if we click on the “**No**”, while pop-up comes with like, “Already connected to AP, do you want to disconnect (yes/no) “? Already connected AP status with “IP & MAC” addresses will display.

RS9116 already connected to Access Point. Click “No” to get already connected status.

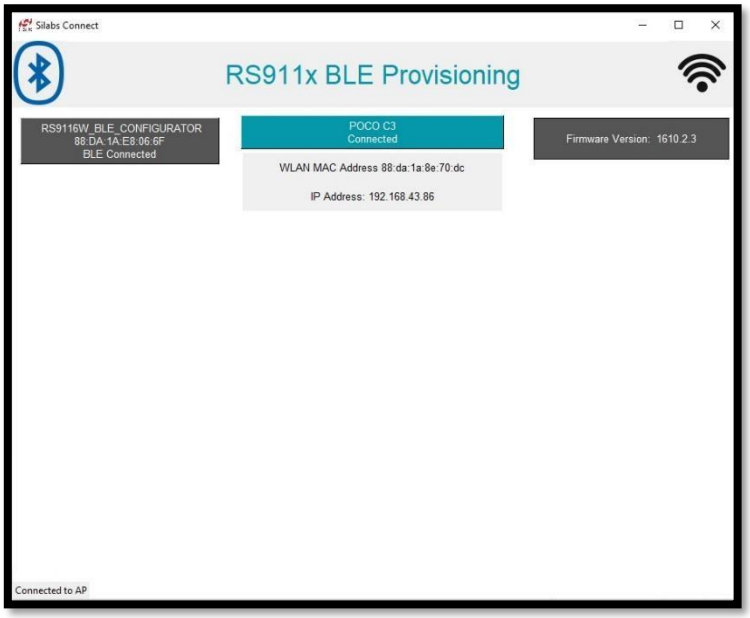
11. By clicking **“No”** it will fetch the already connected Access Point details with both “IP & MAC Addressess”.



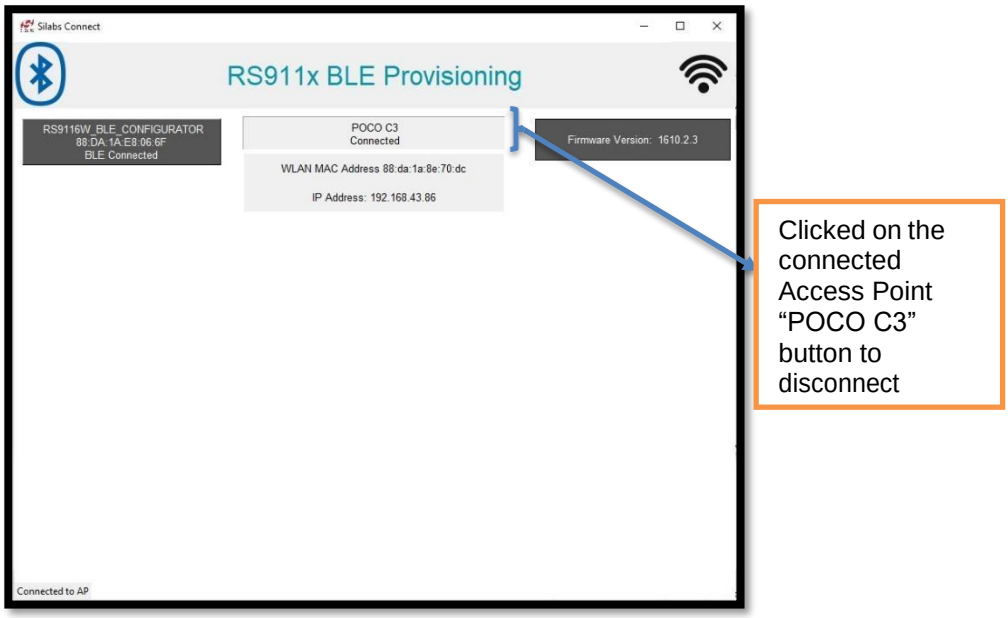
Connected to the Access point and fetched the “IP & MAC” addresses.

3.3 Initiate RS9116 WLAN Disconnection After Successful Connection

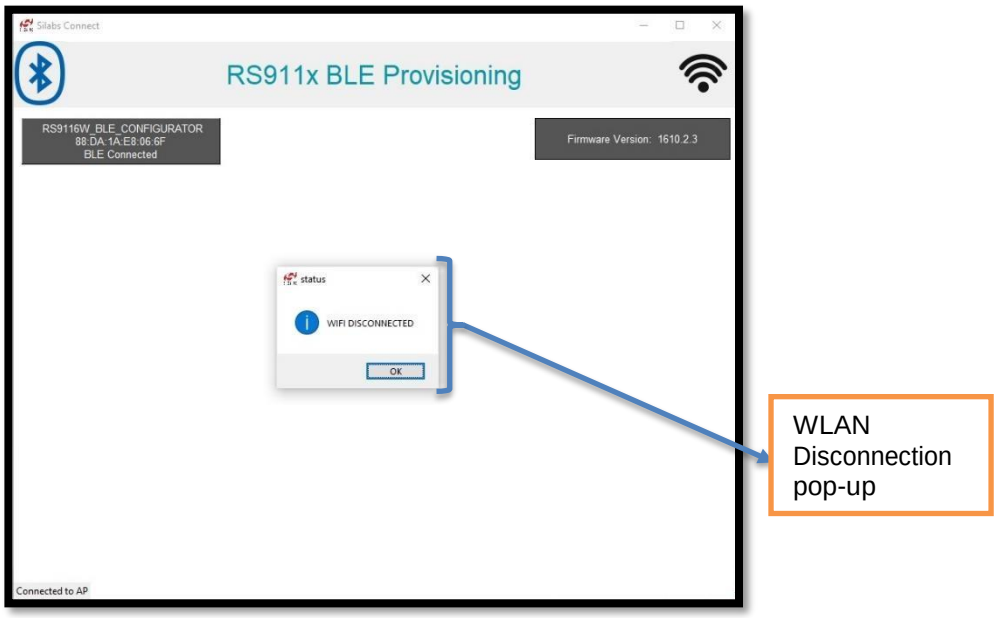
1. Now RS9116 BLE and WLAN are connected and fetched the “IP & MAC” address.



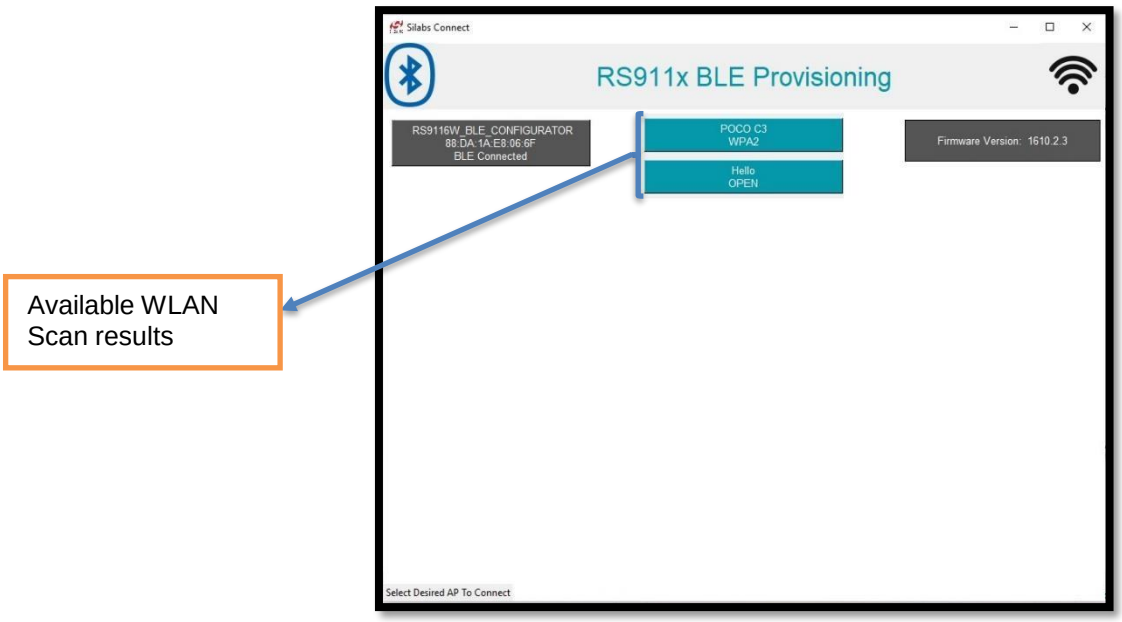
2. Initiate WLAN disconnect by clicking on the already connected access point “iPhone” button.



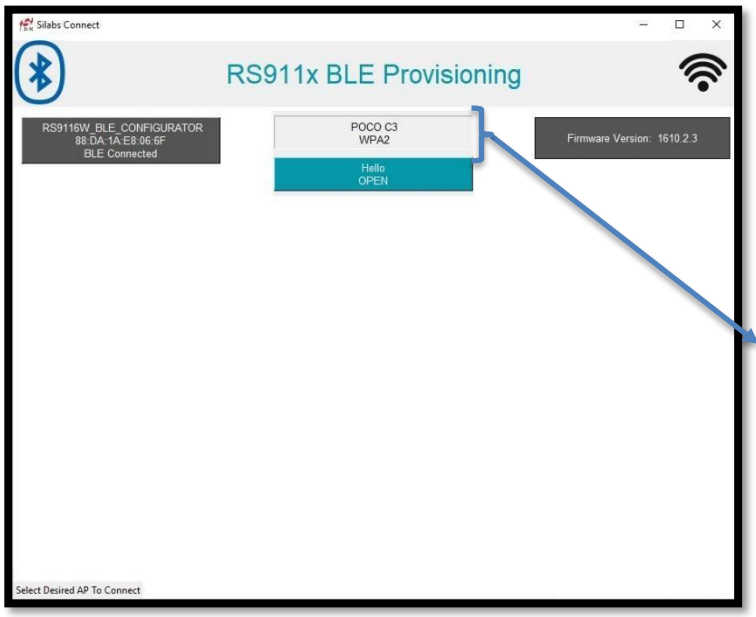
3. After successful disconnection of WLAN, pop-up comes like “WLAN GOT DISCONNECTED”. Please click on the “**ok”.**



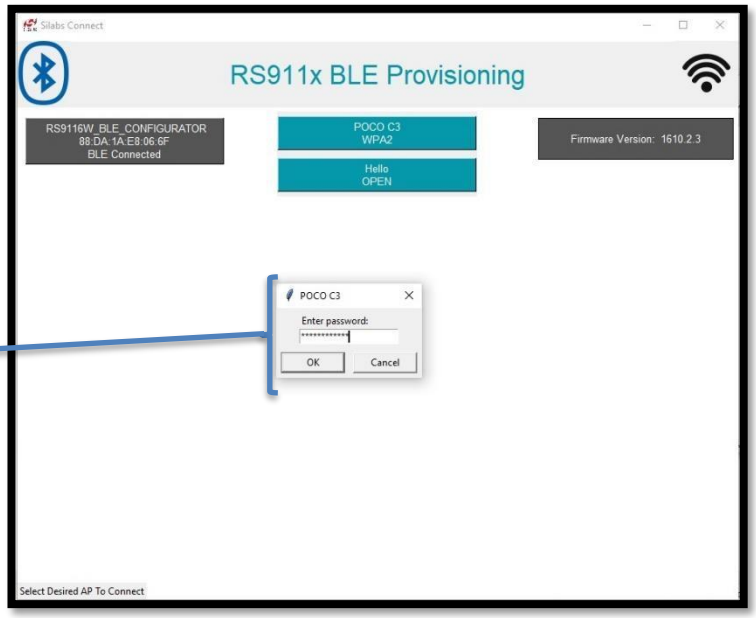
4. Now application will show the all the scanned AP's which are nearby RS9116.



5. By clicking on the one of the scanned AP's it will connect directly RS9116 to that particular AP. If Access Point is secured it will ask the password as input. If that Access point as not secured, then directly connect to that Access Point.

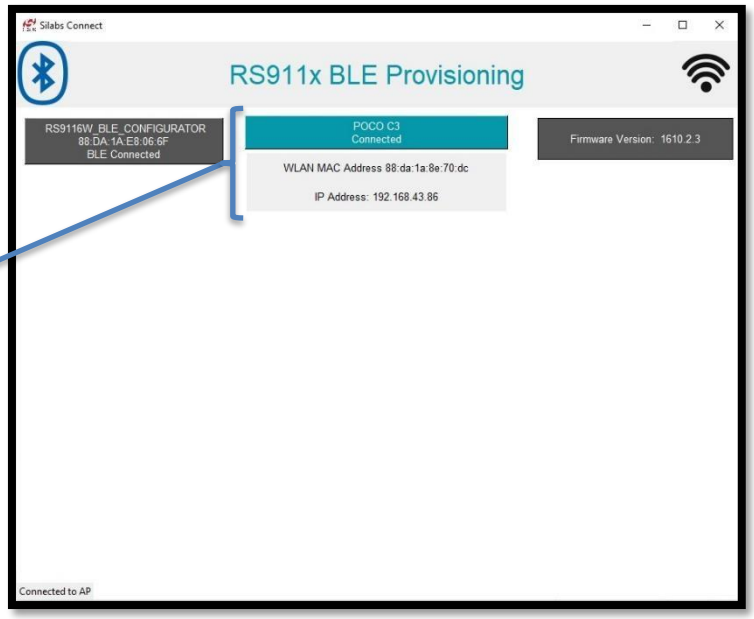


Clicked on the "POCO C3" AP button



Password pop-up
For PSK

6. It will connect to that access point and will fetch the "IP & Mac address" after successful connection.



Connected to the Access point and fetched, the "IP & MAC" addresses.

4 Summary

By using above procedure, the RS9116 NCP module will be provisioned to connect to the WIFI by using the “Silabs Connect Windows Application”.

5 Reference and Related Documentation

- Please refer to the “bleak.pdf” document at “https://buildmedia.readthedocs.org/media/pdf/bleak/stable/bleak.pdf” more about the bleak apis.

6 Troubleshooting

1) Make sure Bluetooth enabled on the Windows PC.

2) Make sure python default version should be 3.7.9, command to verify the version in command prompt is "**python - -version**".