Make toolchain

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Installing the Toolchain

To install the Make Toolchain for Windows, you should download some tools. I suggest that you put all these tools in a common folder C:\nrf

- Download Version 4.9 of the GNU ARM Embedded Toolchain for Windows. This includes the compiler gcc, linker, and multiple utilities like objcopy, addr2line and gdb - the GNU debugger. Install to your nrf folder.
  - https://launchpad.net/gcc-arm-embedded/4.9/4.9-2015-q3-update/+download/gcc-arm-none-eabi-4_9-2015q3-20150921-win32.zip
- Next, we also need some unix utilities, the GNU ARM Eclipse Build Tools. This includes make, sh, rm and some others. Version 2.4 has been tested successfully. Install this to the nrf folder.
  - https://github.com/gnu-mcu-eclipse/windows-build-tools/releases/tag/v2.4b
- Because most makefiles will also use the mkdir command and maybe some others, you should also download the GNU Coreutils that provide a set of UNIX commands in binary for for Windows. Copy at least the mkdir.exe and md5.exe to the bin folder of your GNU ARM Build Tools installation. You must also download the dependencies and copy these to the same folder (Two .dll files).
  - http://gnuwin32.sourceforge.net/packages/coreutils.htm
- Finally, you should add the bin folders of your tools to your PATH variable under System Environment. This will make sure that you can access these tools from anywhere.

Download Eclipse

As a development IDE, I would recommend Eclipse.

- https://www.eclipse.org

You will also need a Plugin for debugging and more which is available here:

- https://github.com/gnu-mcu-eclipse/eclipse-plugins

Download the nRF51 SDK

You must also download the latest nRF51 SDK 11.0.0 from this location: nRF51 11.0.0 SDK: https://developer.nordicsemi.com/nRF5_SDK/nRF5_SDK_v11.x.x/

Put the unzipped sdk files under nrf/nrf_sdk_11_0 so that the folder contains components, documentation, etc...

Fix some of the SDK files

This step is important, because there are bugs in the 11.0.0 SDK: You must now edit the file nrf_svc.h. It can be found in nrf/nrf_sdk_11_0/components/softdevice/s130/headers.

Change a uint8_t cast to uint16_t around line 55. Afterwards it should look somthing like this:

```
#define GCC_CAST_CPP (uint16_t)
```

Next, you should follow this forum

post: https://devzone.nordicsemi.com/question/71636/ble_radio_notification-wont-compile/ and replace the radio_notification module files with these versions. The SDK files have errors and do not compile.

Download the S130/S132 softdevice

For the nRF51, download the S130 v2.0.1 SoftDevice and place the files in : nrf/softdevices/sd130_2.0.1-prod

- https://www.nordicsemi.com/eng/Products/nRF51-Dongle#Download

For the nRF52, you need the S132 v 2.0.1

- https://www.nordicsemi.com/eng/Products/Bluetooth-low-energy/nRF52-DK

Building FruityMesh

Finally, you should be able to simply open the provided project file that is available in the FruityMesh Repository. It includes make configurations for NRF51 and NRF52.