



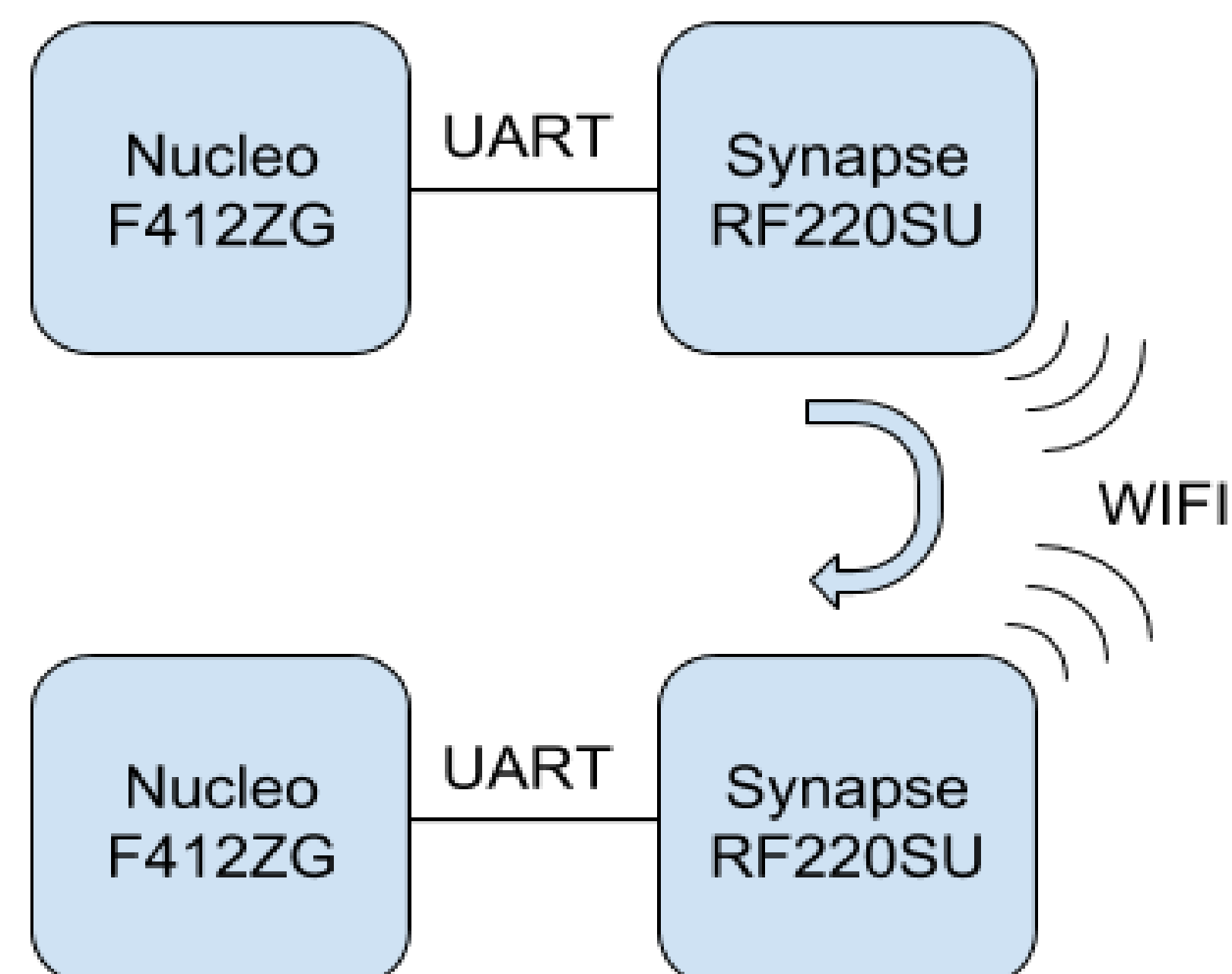
ARIANNA Neutrino Array: WiFi Mesh Communications

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Project Goal

Our project pertains to the establishment of a WiFi Mesh Communications system to serve as a proof of concept which will be applied to the ARIANNA Neutrino Array System. The primary goal of this communication system is to enable transmission and reception of data between antennas in an array such that information may be transmitted along a determined path to a base station.

Diagram



Progress

Currently we have been able to establish a partially functional WiFi mesh which is capable of:

- Transmitting and receiving data via a microcontroller and corresponding RF chip at a speed of approximately 32 kbps.
- We are exploring the possibility of transmitting and receiving data in various data types in order to reach our desired frequency.

Once we obtain additional hardware we plan to:

- Test the throughput of our communication mesh.
- Under the assumption that our optimal data type does not prove as effective in a mesh, we will explore the possibility of transmitting and receiving data in a different format.

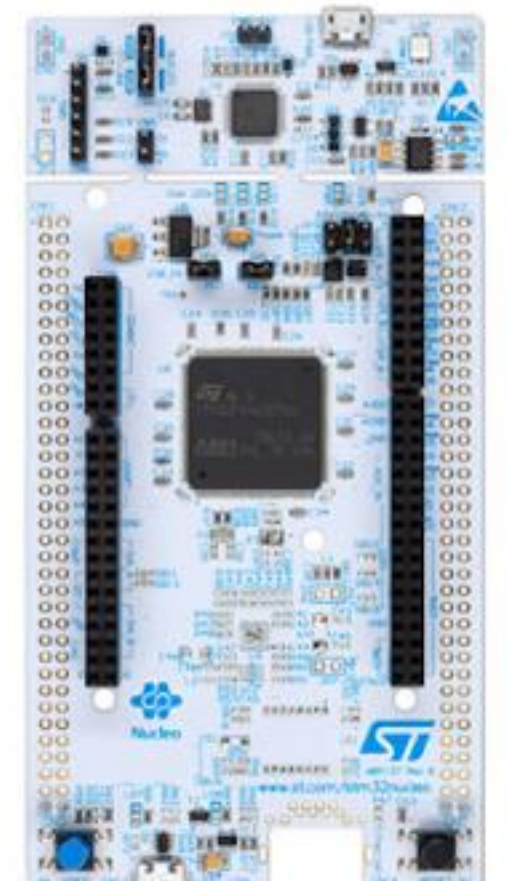
Quarterly Goal

By November 26th, we aim to reach two key milestones: efficient communication between nodes in the WiFi mesh, and communication with our network chip via UART. This will allow us to verify the functionality of our overall system and its ability to successfully complete efficient chip-to-chip communication.

Components



Synapse
RF220SU



Nucleo
F412ZG



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