Requirements Analysis

Objectives:

* Triangulate a sound source by calculating its 2D coordinates on a grid
* Display the triangulation result
* Record data from each microphone simultaneously
* Implement noise reduction

Constraint:

* Must use TDoA to triangulate the sound source
* Must use a GUI to display the result
* Must use 2 raspberry pi’s and 4 microphones

Performance Expectations

* Should be capable of recording and processing data in real-time
* Configurable microphone setup

Parameters

* System should provide accurate location estimation within a specified tolerance
* High signal-to-noise ratio to ensure accurate output