

README – Basic simulator for 801.11az-based positioning

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The simulator is distributed as it is, under open-source licence.

The theoretical background can be found in the MSc thesis of E.Serna Santiago “Passive Positioning Approaches in the Future Positioning Systems”, found at

<https://dspace.cc.tut.fi/dpub/handle/123456789/24894?show=full> (View/Open button)

The Graphical User Interface (GUI) can be opened by running interface function in the Matlab command line. A GUI as below will appear. The user can choose among several study cases, explained in the thesis. The number of available access points in the building can be defined by the user (in this example it was 12). All white parts in the column at the left have to be filled by the user: number of iterations, variance value for time observables, variance values for angle observables (azimuth and elevation), and possibly the step and the final value. In the example below, we have a variance for azimuth and elevation angles ranging between 0.001 and 0.004, with a 0.001 step.

The simulation is started with Simulate button after all parameters have been input correctly. The right-hand column will start to display the positioning error (as a distance between the estimated point and true point, in meters), with three different approaches: TOA, AOA, and hybrid TOA+AOA, as explained in the above-mentioned thesis.

