Hey Y’all! Thank you for choosing our website!

This is a web tool that will show you location-based accuracy when you use Time Difference of Arrival (TDoA) Algorithm for indoor localization.

You may give us information about anchor coordinates, room size, distance between sample points, maximum error shown, choice of initial seed, and your choice of DoP method.

Below is one example of inputs (all of your inputs should use millimeter unit, and the contour map uses meter unit):

Anchor Locations: 1500,1500;1500,2500;2500,1500;2500,2500

The bottom left corner of your room is the origin. This means your initiator is at (1500,1500), and three responders at (1500,2500), (2500,1500), (2500,2500) respectively.

Room Size: 4000\*4000

width\*height. This is a 4meter\*4meter room.

Sample Distance: 200

distance between each location sample in the room used for accuracy calculation. Sample taken every 0.2meter. Thus, 20\*20 = 400 sample points in our case.

Maximum error shown: 10000

maximum error shown in our map. All errors larger than this are rounded down to this maximum value.

Initial Seed: custom

if custom is chosen, you need to specify your initial seed location in the following Custom Seed parameter. If origin or roomCenter is chosen, then the initial seed will be the bottom left corner of your room or the center of your room respectively, and the input for Custom Seed will be overlooked.

Custom Seed: 20,20

If you choose custom in Initial Seed, specify your initial seed here. Otherwise, just put random location like 0,0. Cannot leave it empty.

DoP: all

All means the calculation will run 100 times with different Gaussian noises added to TDoA and return the median error value for each sample point.

Best means the best anchor combination will be selected based on our DoP value and used for calculation.

Want to get a feel with our website using some input examples? Simply choose one of our 4 inputs and click apply! You do not need to input anything for the example to run.

Here are the inputs for each example:

Small Square:

anchorLoc = “150,150;150,250;250,150;250,250";

roomSize = “400\*400"

sampleDistance = “200"

maxErrShown = “10000"

iniSeed = “roomCenter”

customSeed = “20,20"

dop = “all"

Small Rectangular:

anchorLoc = "100,200;300,200;100,600;300,600"

roomSize = “400\*800"

sampleDistance = “200"

maxErrShown = “10000"

iniSeed = “roomCenter”

customSeed = “20,20"

dop = “all"

Large Square:

anchorLoc ="1500,1500;1500,2500;2500,1500;2500,2500"

roomSize ="4000\*4000"

sampleDistance = “200"

maxErrShown = “10000"

iniSeed = “roomCenter”

customSeed = “20,20"

dop = “all"

Large Rectangular:

anchorLoc ="1000,2000;3000,2000;1000,6000;3000,6000"

roomSize ="4000\*8000"

sampleDistance = “200"

maxErrShown = “10000"

iniSeed = “roomCenter”

customSeed = “20,20"

dop = “best”

Hope you find our website helpful:)