

# DIS Project 2013-2014

## First steps:

Open the Code directory in Matlab.

Launch the main file (press any key in the Matlab terminal for the simulation to start):  
*distributed\_network.m*

Understand the critical parameters:

```
N      % number of nodes
K      % minimum connectivity
R      % average communication radius
F      % proportion of network broadcasting simultaneously
t_max  % maximum number of time-steps
noise  % percentage, gaussian noise on range measurements
```

## Next steps:

Think about how you want to solve the localization problem.  
Take care to find a solution that is *distributed*.

Take a look at the papers I handed out, and search the web (for instance on scholar.google.com) for your favorite solution.

Choose an approach. Your approach can be based on a paper that you found (or one of the ones I handed out), or it can also be an entirely new approach. You may take inspiration from anything you saw in the DIS course so far.

## Project work plan:

Send me a few lines by email, suggesting your chosen approach and why you think it would work.

If your approach is based on a new paper that you found, send me the reference as well.

Also, please indicate how you intend to split the project implementation among the individual team members (keeping in mind the various backgrounds).

## Evaluation of the project:

We will consider two main evaluation criteria: qualitative and quantitative.

Quantitative:

At the end of the project, I will send out a set of parameters that you will be required to test. You will run a significant series of simulations, i.e. 100 runs, and calculate the performance of your network for a specific metric (MSE). The results are to be

presented in a clear and conclusive manner.

Qualitative:

You will be required to comment on the following aspects: robustness, scalability of the approach, computational complexity, originality and elegance of your solution. Comments on the feasibility of a real-world deployment are also required.