

foxySwarm Project Plan

A package that provides ad-hoc communication in
a swarm

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[GITHUB.COM/ROBOFOXY/FOXYSWARM](https://github.com/ROBOFOXY/FOXYSWARM)

This project was done under the supervision of Dr. Erol Şahin with the infrastructural support of KOVAN Research Laboratory.

First version, October 2018



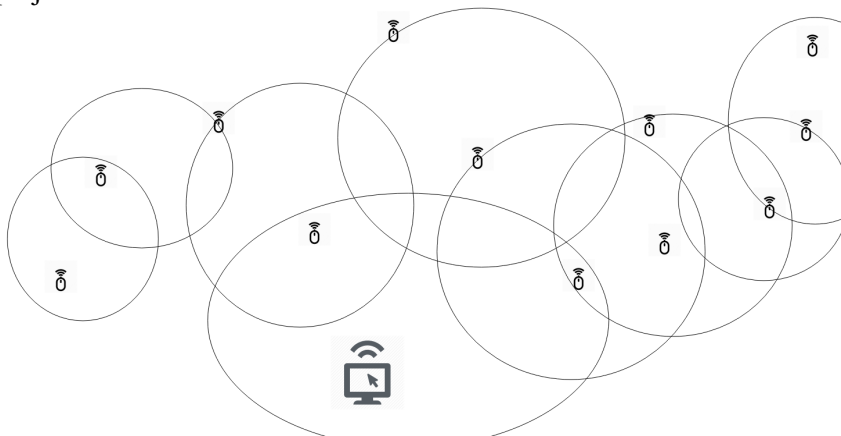
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1. Plan / Requirements

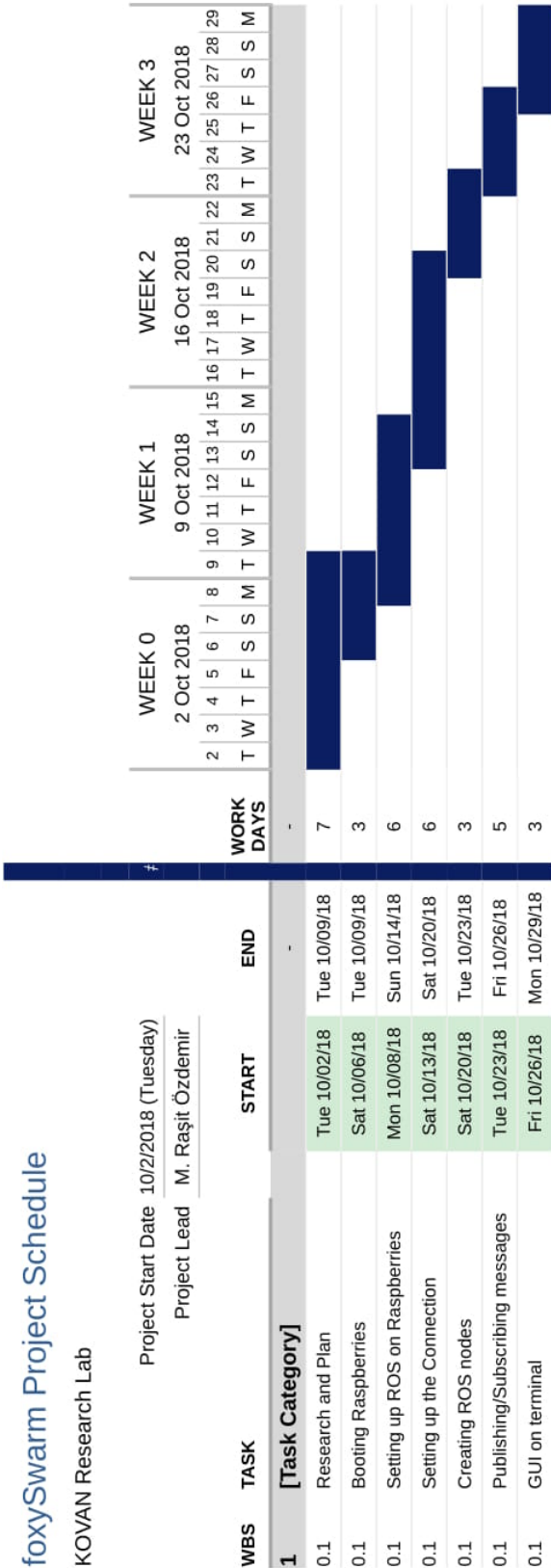
1.1 Objective

This document aims to represent the project plan of foxySwarm. The end product for this project is an ad-hoc communication application between Raspberries and a PC. There will be Raspberry Pi B+ devices, and a PC. A suitable ROS compatible operating system should be installed on the single board computers. Then, a communication protocol will be defined and implemented at the end of the project.



1.2 Steps

- Do research to specify the requirements.
- Boot Raspberry Pi 3 B+.
- Install Robot Operating System on Raspberries.
- Set up network connection between Raspberry-Raspberry and PC-Raspberry.
- Create proper ROS nodes.
- Configure publishing/subscribing routines.
- Create a graphical user interface (GUI).



1.3 Initial Plan

Raspberri Pi 3 B+ is the latest model of the Raspberries. Therefore, there are a lot of incompatibility between Ubuntu and ROS versions. Firstly, I created a github repository and tried to boot Raspberries with Raspbian operating system.

1.3.1 Initial Problems

- Raspbian is the most suitable operating system for the single board computers we have. However, it has some problems with ROS.
- There is no announced Ubuntu versions that is compatible with Raspberry Pi 3 B+.
- There is not any external monitor and HDMI cable in my home.

1.3.2 Solutions to Initial Problems

- All Raspbian versions are eliminated because of ROS requirements.
- After a long research and surfing the Internet, I found a way to hack Ubuntu 16.04 compatible with Raspberry Pi 3 B+.
- I already needed an external monitor in my home. Then, I bought one.
- Burak Hocaoglu provided a HDMI cable temporarily.

This document is to be edited during the development.