Table of Contents

Welcome

Project Willy

- History of Willy

- Project Willy

- Publicity

- Sponsors

Getting started

- Introduction to ROS

- Development Guide

- Driving Willy

- Manual

- Wiki Manual

Build of Willy

- Design history

- Hardware

Architecture

- Software Architecture

- ROS topic design

Raspberry Pi's

- Sensor node

- Social Interaction node

- Power node

Components

- ROS master

- New ROS master on Lubuntu

- Sonar

- Lidar

- Kinect

1. Software Architecture

1.1. Standpoints

The software architecture needs to be compartmented for development purposes. To make sure the development does not compromise the system as a whole the following standpoints are defined to fortify the design.

- Each separate function gets a separate repository

- Each separate function has no dependency to another

- The Git process is applied for every repository

- Every function is hardware independent

- Every function is OS independent

1.2. Design

Embedding these standpoints into the Robotic Operating System (ROS) resulted in the following architecture design.
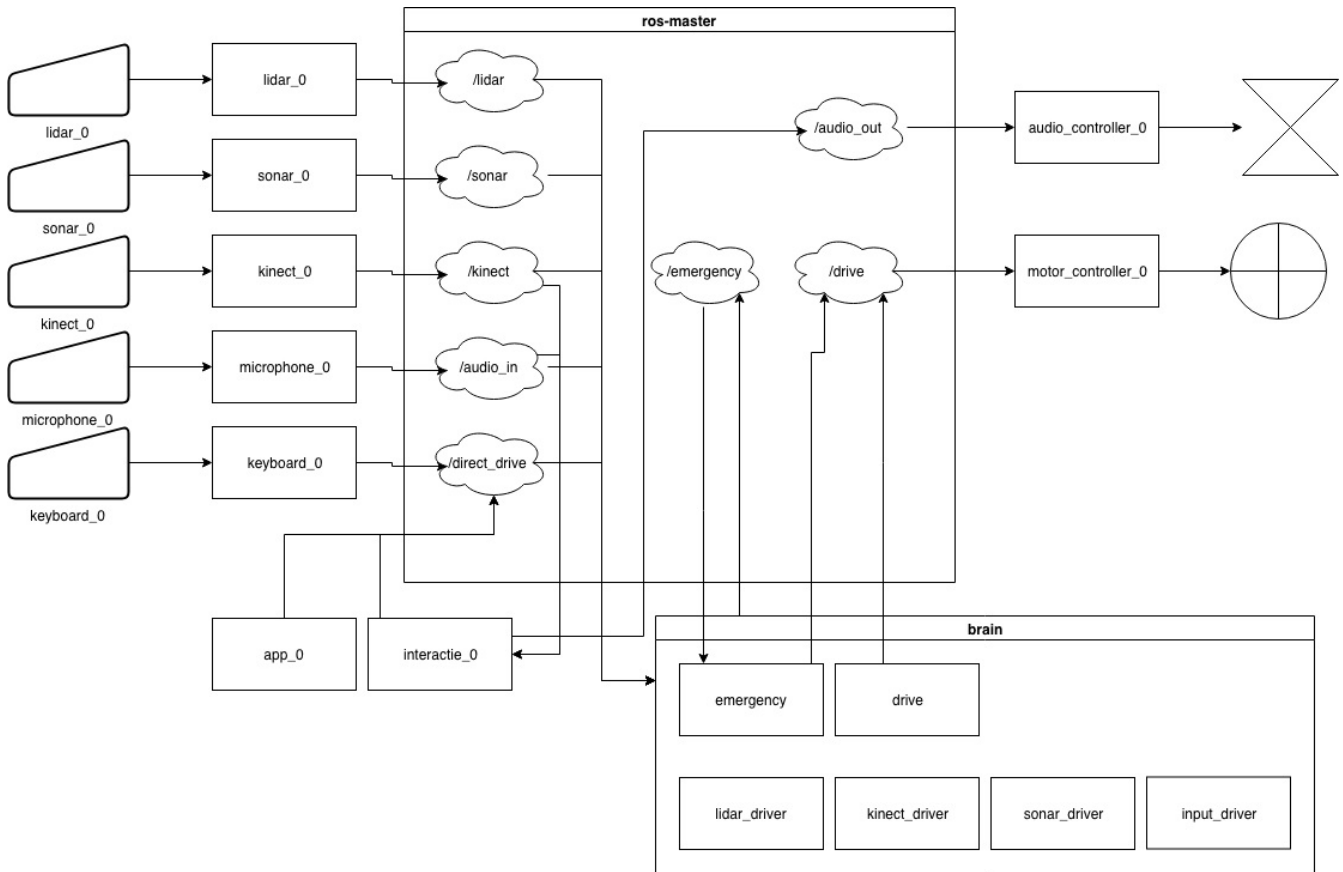
1.3. ROS Master

A key feature of ROS is the topic communication. Separation of each function in the ROS master, which facilitates the topics, is a key component. Every function communicates according a topic and therefore ROS master functions as a service bus for each current and future feature.

> Designing this architecture and keeping it up to date can be done by importing/editing the xml files in https://www.draw.io/. Draw.io is free of charge to use and requires no client, but any XML editor can be used.