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1. Software Architecture

1.1. Standpoints

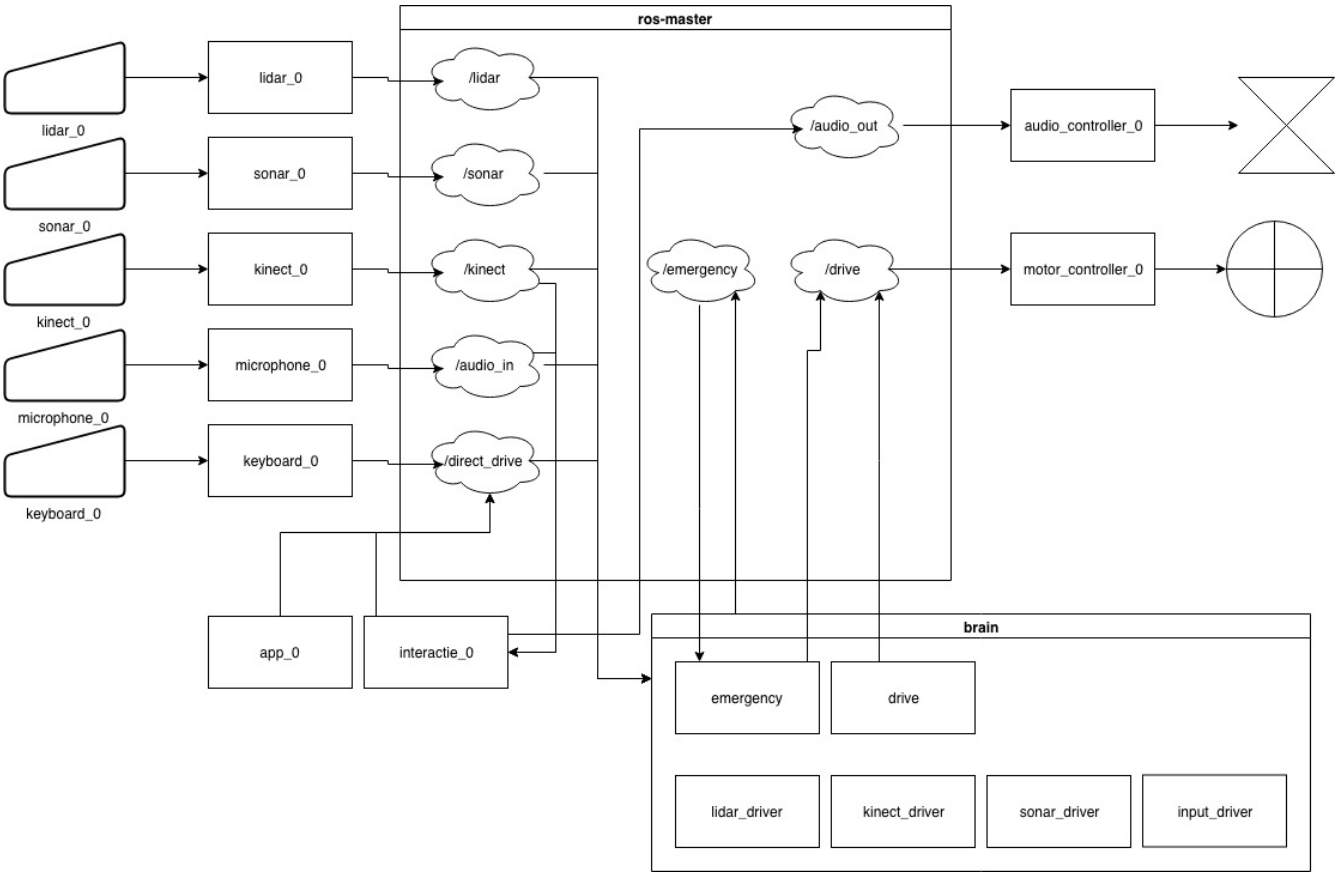
The software architecture needs to be compartmented for development purposes. To make sure the development does not compromise the system as a whole the following standpoints are defined to fortify the design.

- Each separate function gets a separate repository
- Each separate function has no dependency to another
- The GiT proces is applied for every repository
- Every function is running hardware independent

- Every function is running 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 servicebus 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.