Table of Contents

1. Design guide	 2
1.1. Prerequisite	 2

Welcome

Project Willy

- History of Willy
- Project Willy
- Publicity
- Sponsors

Getting started

- Development Guide
- Driving Willy
- Documentation

Build of Willy

- Design history
- Requirements
- Design reference
- Physical build
- Hardware

Robotic Operating System

- Introduction to ROS
- ROS Tutorials
- Multi master

Architecture

- Software Architecture
- Hardware Architecture
- Skylab Architecture
- ROS topic design

Hardware nodes

- sensor node
- si node
- power node
- WillyWRT

Components

- ROS master
- New ROS master on Lubuntu
- Brain

- Sonar
- Lidar
- Localization and navigation
- Motor controller
- Joystick
- Social interaction
- Speech
- Speech recognition

Skylab

- Setup Skylab
- Python scripts
- Webserver
- Functions of the webserver
- Skylab servers
- ROS installation on Ubuntu VMs in Skylab
- DNS,DHCP, pfSense & Ubuntu

Radeffect App

• Radeffect App

Lessons learned

- Todo & Advice
- · Lessons Learned

Archive

- Previous Groups
- Research Archive

1. Design guide

1.1. Prerequisite

SolidWorks is a 3D CAD software system. The program is used to design and test parts. SolidWorks has a render extension which makes it possible to make picture like images from the 3D models.

Student edition: https://store.solidworks.com/studentstore/default.php?command=Step1

Download: https://www.solidworks.com/sw/education/SDL_form.html



For a student license: Mechanical Engineering has licenses which can be used. Ask at T1 for more information.

Install SolidWorks following their install guide.



It might be useful to look at http://www.3dleerlijn.nl/solidworks-leren-gebruiken/for learning the basics.