

# Table of Contents

1. Background ..... 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 Ubuntu](#)
- [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. Background**

The original design is made by students of Industrial Product Design. One of the first things they produced was a morphological chart. The chart is made to create an overview of all options and functions of the robot.

# Morphological chart

Detect Human	 Camera	 Sensor	 App	 Drone	 Touch screen
Interaction with Human	 App	 Face	 Sound	 Screen	 Gestures
Detect waste	 Camera	 Sensor	 App	 Drone	 Color
Pick up small waste	 Air	 Brush	 Mechanical	 Scoop	 Broom
Pick up big waste	 Open	 Mechanical	 Hook	 Lift	 Vacuum / Air
Waste disposal	 Recycling	 Burn	 Disposal Robot	 By Human	 Re-use it
Charge battery	 Station	 Moving charger	 Wind energy	 Solar energy	 By Human
Move around	 Wheel	 Fly	 Tread	 Walk	 Air flow
Protect against damage	 Alarm	 Camera	 Snake	 Aggressive	 Police

With the morphological chart in mind they started brainstorming and made sketches from the ideas they had.



