# **Table of Contents**

1. ROS Tutorials 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
ROS topic design
Hardware nodes
• sensor node
• si node

### Components

• ROS master

• power node

• WillyWRT

- New ROS master on Lubuntu
- Brain
- Sonar
- Lidar
- Localization and navigation
- Motor controller
- Joystick
- Social interaction
- Speech
- Speech recognition

#### **Radeffect App**

• Radeffect App

#### Lessons learned

- Todo & Advice
- Lessons Learned

#### **Archive**

- Previous Groups
- Research Archive
- Skylab Architecture
- Skylab

## 1. ROS Tutorials

We found out the hard way, multiple times, that ROS can be quite difficult to comprehend. The principle seems rather easy, have a working network, communicate on TCP-IP and DNS name, and start coding. However, there are a variety of pitfalls where you can go wrong.

We have used multiple ROS tutorials to understand more of the technical aspects of ROS as well as the (im)possibilities it holds. Due to these tutorials we kept Willy as it was, but also gained knowledge about ROS. Therefore we strongly suggest to read and try some of the tutorials ROS provides on their webpage.

http://wiki.ros.org/ROS/Tutorials