Table of Contents

1. Radeffect App 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. Radeffect App

Together with another group of Windesheim students an App was developed foor Willy. The App is developed in Mendix. The application can be found here: https://callwilly-sandbox.mxapps.io/ The main function of the App is to call Willy over. This is done by:

Post:

- Retrieving from Willy topics the location (AprilTag number) and activity
- Converting the ArpilTag number to the classroom number
- Publishing the location (classroom number) and activity of Willy in Json format to the Mendix App site

Get:

- Retrieving the designated location (classroom number) when a visitor calls for Willy in Json format from the Mendix App site
- Converting the classroom number to AprilTag number
- Publishing the AprilTag number on a Willy topic

The activities are done in two Python scripts published here: https://github.com/Windesheim-Willy/Skylab/blob/master/Fetcher/Skylab_app_get_status_0.py and https://github.com/Windesheim-Willy/Skylab/blob/master/Fetcher/Skylab_app_post_status_0.py

For test purposes a test script is created to publish every 10 seconds a new location and activity so the App can work without Willy being active. Te script is published here: https://github.com/Windesheim-Willy/Skylab/blob/master/Fetcher/Test_script_for_RADeffect.py

The scripts for Radeffect connectivity are run on the Fetcher in Skylab.

A backup of the Mendix code is stored on SharePoint at the map "Winnie App".