Agenda and Content

Introduction workshop

Care-O-bot

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Chapter 1

Agenda

This is an Agenda for a two days workshop after shipping the robot. It will cover topics for unpacking, setting up, safety introduction, starting up the robot, first steps for moving the robot, navigation introduction.

Topic	approx. Duration	involved persons
Unpacking the robot	2h	customer contact perso
Technical handover	0.5h	customer contact perso
Presentation: Introduction to ROS and Care-O-bot	1h	all interessted people (
Safety instructions	1h	customer contact perso
Starting up the robot	1h	robot administrator, al
First steps for moving the robot	3h	robot administrator, al
Important ROS packages	1h	robot administrator, al
Introduction to navigation	2h	robot administrator, al
Introduction to administration	1h	robot administrator

Chapter 2

Material to bring to the workshop

- Care-O-bot stickers for participants
- set of screw drivers
- water balance
- network cabel
- tweezer
- PCAN and ESD adapter
- Laptop with Schunk software
- Laptop with Ubuntu and ROS

Chapter 3

Content

3.1 Unpacking

loocking for transportation damage, taking photos

show how to fix the robot in the box

show how to protect the robot in the box from getting scratches and losing parts

content of supply box

3.2 Technical handover

go through the daily morning show

sign a daily morning show protocol (mark damages or errors)

3.3 Presentation: Introduction to ROS and Care-O-bot

self introduction from the robot

3.3.1 Introduction to ROS

See slides from ROS workshop on 1.10.13 in Stuttgart

3.3.2 Introduction to Care-O-bot

See slides from 24.10.13 in Odense: Motivation, Hardware, applications, SW architecture, community, testing, collabration

3.4 Safety instructions

what issues to be taken care about: see slides from 24.10.14 in Odense

show how to stop the robot: buttons, laser canner, wireless emergency stop

show how to release the emergency stop again

charging the robot

collect signatures of instructed persons

3.5 Starting up the robot

turn key, login, run bringup, initialise, diagnostics dashboard: see Care-O-bot manual

3.6 First steps for moving the robot

joystick, command gui

simple_script_server: blocking and non-blocking, using predefined positions and direct joint positions, leds, sound

cob_default_robot_config: add your own package for robot configuration, add new predefined positions, add new command gui buttons

cob_default_env_config: add environment specific parameter to your own package, add buttons to command gui

3.7 Introduction to navigation

show various navigation possibilities dwa, tr, linear

visualize and command through rviz

cob_navigation_local

cob_mapping_slam: tips tricks for creating a map

cob_navigation_global

cob_navigation_slam

3.8 Important ROS packages

cob_bringup

cob_hardware_config

cob_calibration_data

cob_default_robot_config

cob_default_env_config

tf frames

simulation

where to start which ROS node: distribution of CPU and network traffic

3.9 Introduction to administration

pc and network hardware setup: router, pcs, extension cards, CAN, usb, ethernet, camera network, CPU, RAM, disk usage

network configuration: IP adresses, DHCP, DNS, integration into building network

pc configuration on robot: ntp, nfs, robot user,

setup repository: manual, cobadduser, cob-pcs-install, cob-pcs-execute

overcome wireless emergency stop

ROS configuration: bashrc, ROS_PACKAGE_PATH, ROS_MASTER_URI, bringup stacks, user overlays