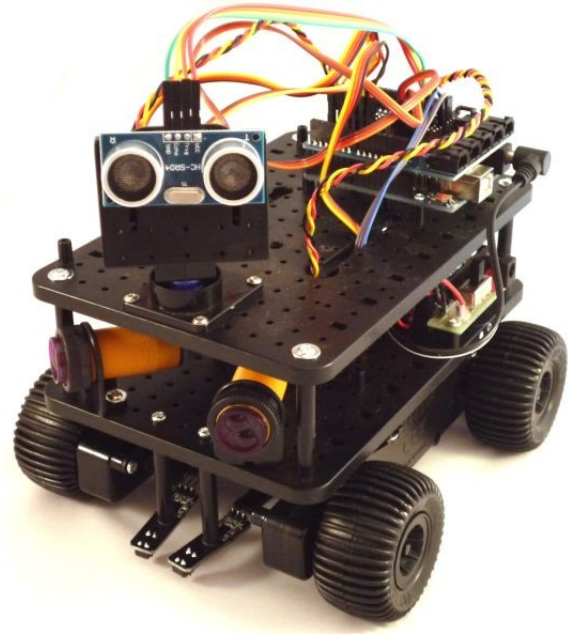
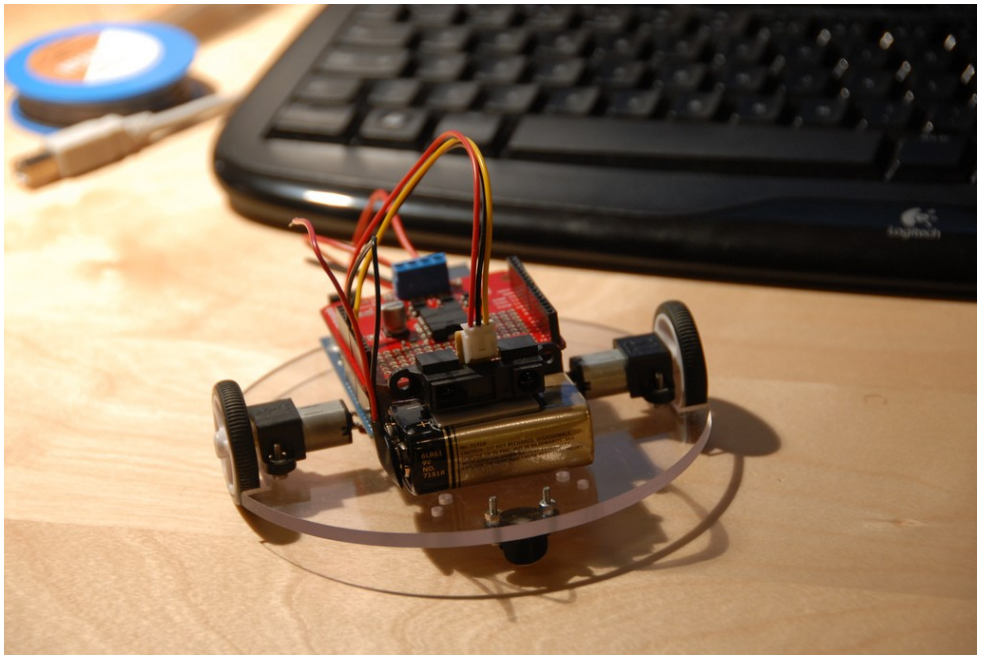
Complex Low-Cost Robotics

Datenspuren 2015, Paul Petring
https://defendtheplanet.net

Non-Complex Low-Cost Robotics?





Simonwilmot

https://upload.wikimedia.org/wikipedia/commons/a/a0/Basic_robot.jpg

Johannes H. Jensen

https://www.flickr.com/photos/johanneshjensen/4984305980

Robot Operating System

- Roboter Betriebssystem
- Framework, Setup, Treiber, Packetmanagement
- Willow Garage (Scott Hassan)


210 Stanley Innovation V3 Segway


220 Stanley Innovation V3 Segway


420 Omni Stanley Innovation V3 Segway


440LE Stanley Innovation V3 Segway


CoroWare Corobot


Cyton-Gamma


Denso VS060

Dr. Robot Jaguar


440SE Stanley Innovation V3 Segway

ABB Robotics (ROS-Industrial)


Adept MobileRobots Pioneer family (P3DX, P3AT, ...)


Adept MobileRobots Pioneer LX


Eddiebot


Enova Robotics MiniLab


Erle-Brain


Erle-Copter


Adept MobileRobots Seekur family (Seekur, Seekur Jr.)


Aldebaran Nao

Allegro Hand SimLab


AMIGO


Erle-Copter Ubuntu Core special edition


Erle-HexaCopter


Erle-Plane


Erle-Rover


AscTec Quadrotor


Barrett Hand


BipedRobin


Bitcraze Crazyflie

evarobot

Fanuc Robotics (ROS-Industrial)


Festo Didactic Robotino


Fetch robotics: Fetch


Clearpath Robotics Grizzly


Clearpath Robotics Husky


Clearpath Robotics Jackal


Clearpath Robotics Kingfisher


Fetch robotics: Freight


Fraunhofer IPA Care-O-bot 3


Fraunhofer IPA Care-O-bot 4


Gostai Jazz

GoThere! Robot

i-Cart mini

Innok Heros

Intel Edison

Otto Bock SensorHand Speed

PAL Robotics PMB-2

PAL Robotics REEM-C

PAL Robotics TIAGo

iRobot Roomba

Kawada Nextage / Hiro

Kinova JACO

Kinova MICO

RazBot

REEM

Robonaut 2

Robotnik Agvs

Kobuki

Komodo

Lego NXT

Lizi

Robotnik Guardian

Robotnik RB1

Robotnik RBCAR

Robotnik SummitX

Maggie

Merlin miabotPro

Motoman, Yaskawa (ROS-Industrial)

Nav2

Robotnik SummitXL

ROS-Industrial

Shadow Hand

Softbank Pepper

Neobotix mp-500

Neobotix mpo-500

Neobotix mpo-700

Open Unit Robot

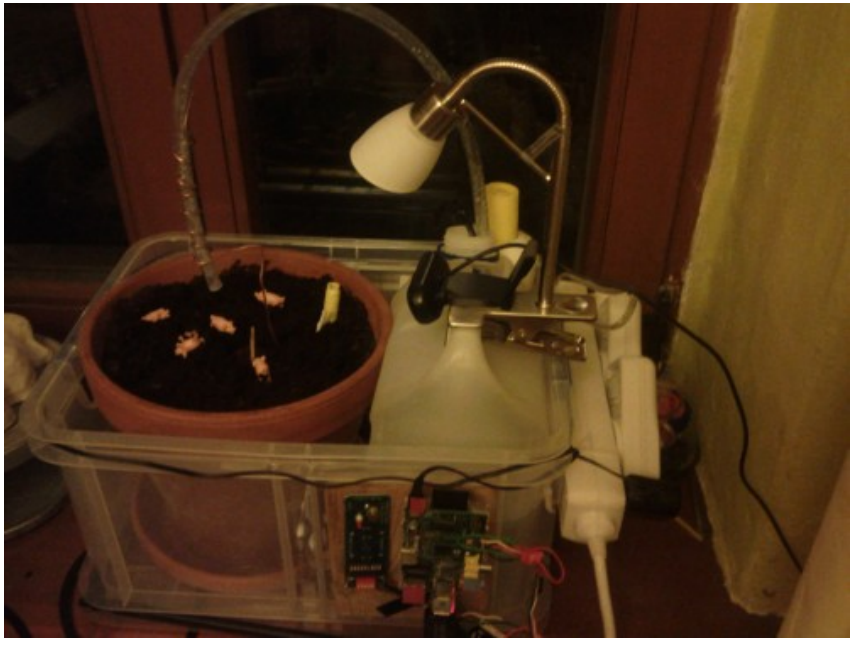
TUlip

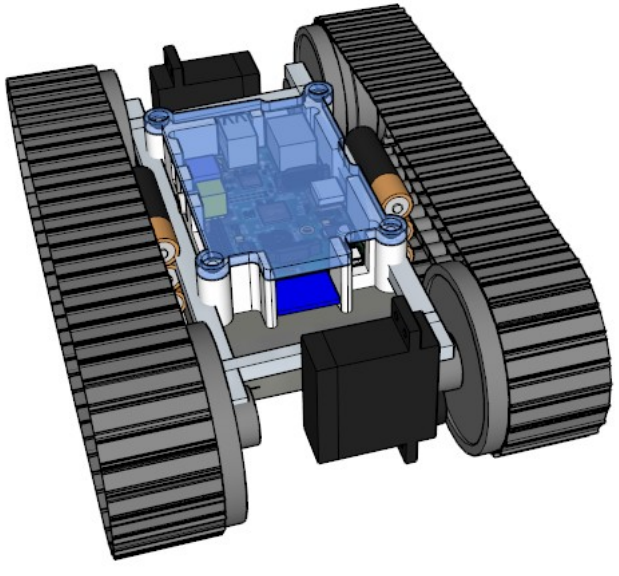
TurtleBot

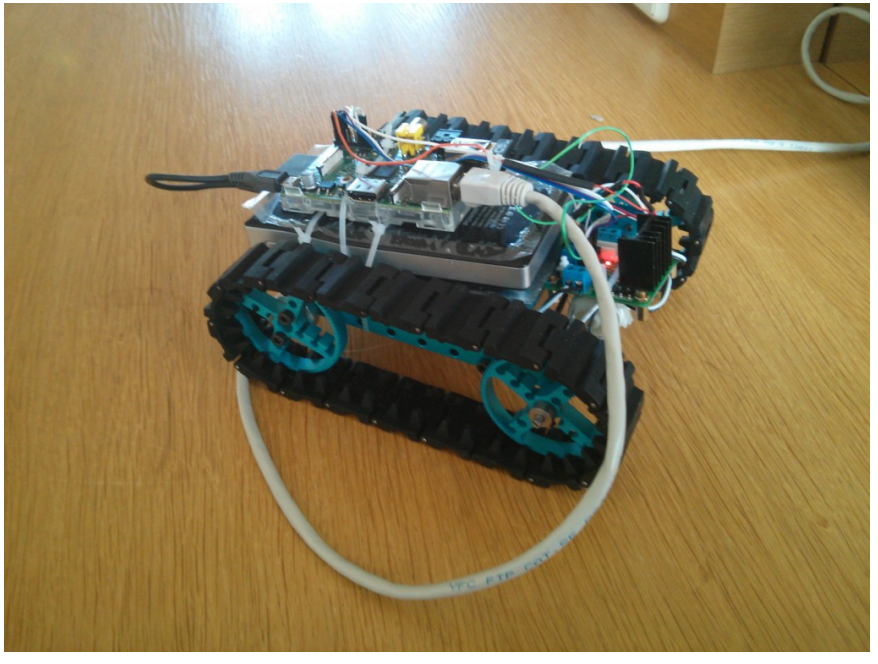
Universal Robots (ROS-Industrial)

Videre Erratic

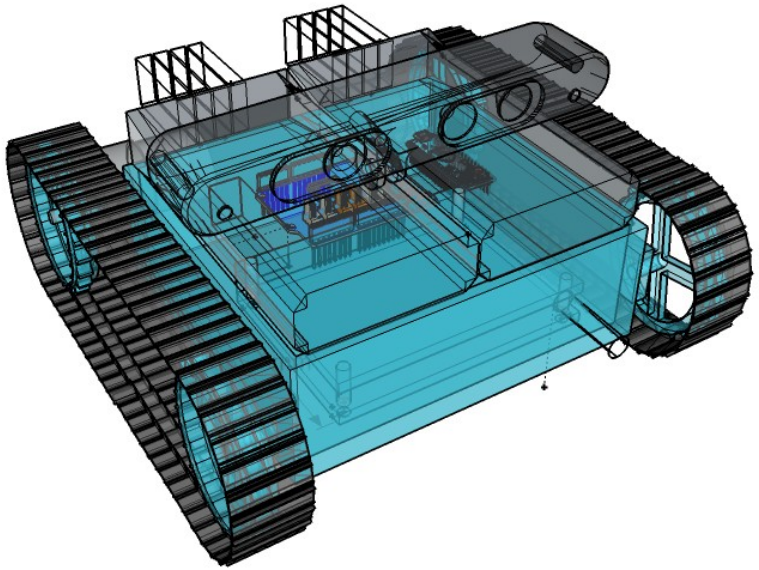
Low-Cost-Roboter

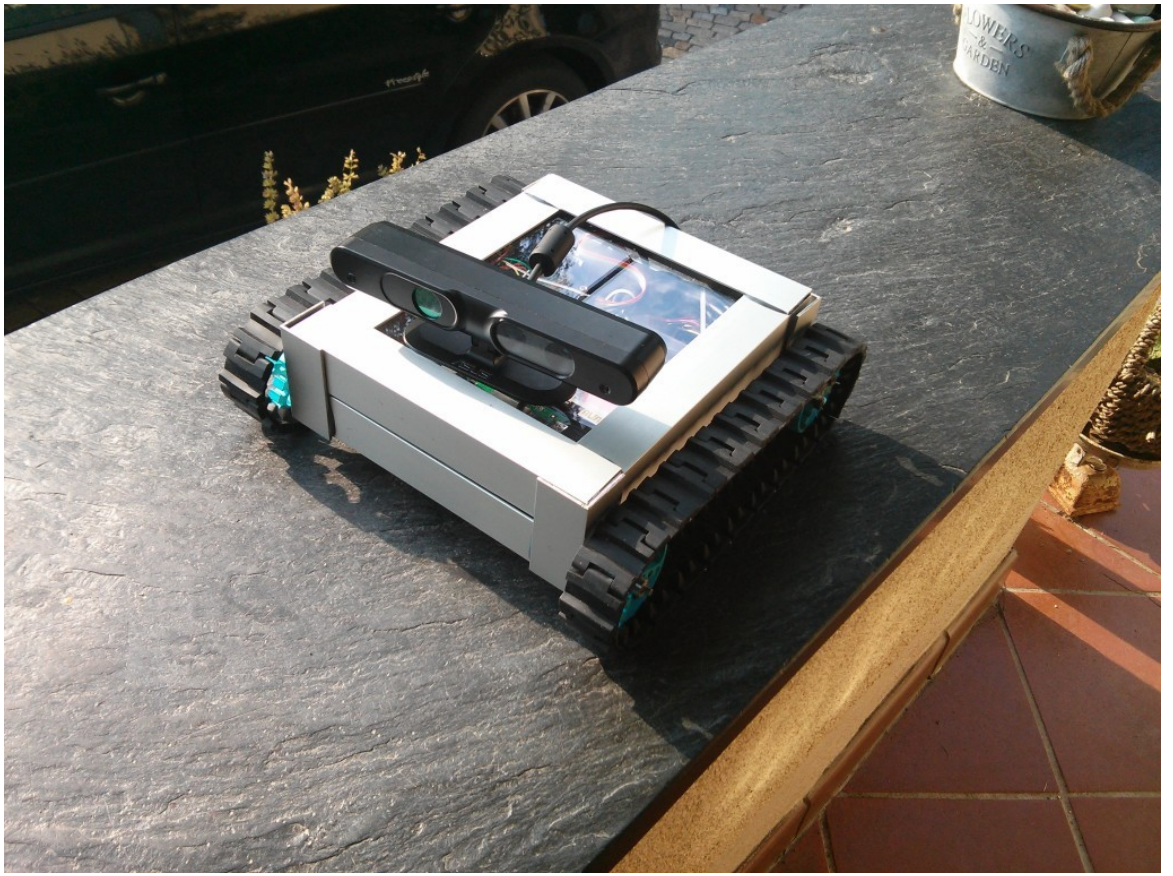






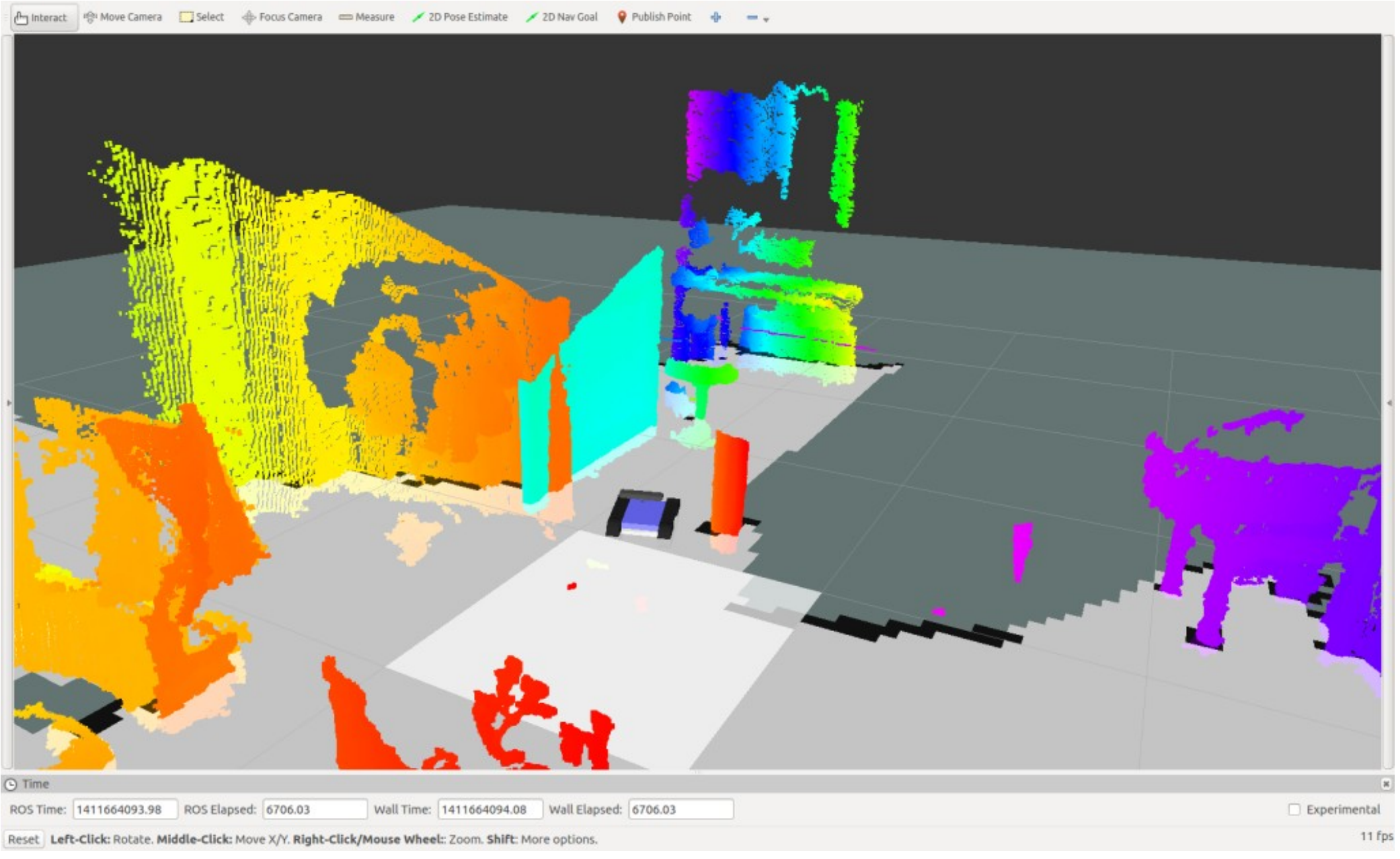
aMoSeRo

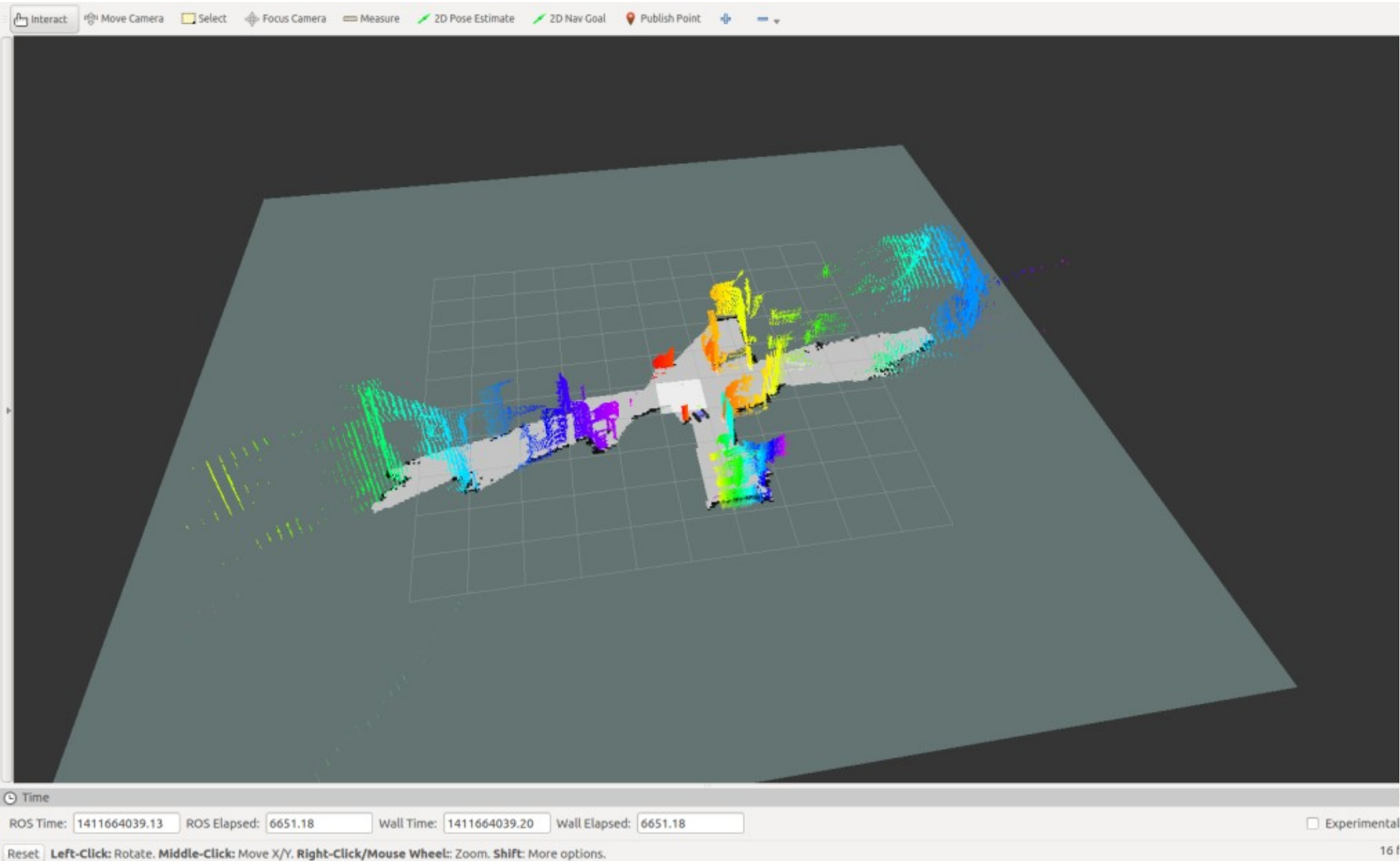




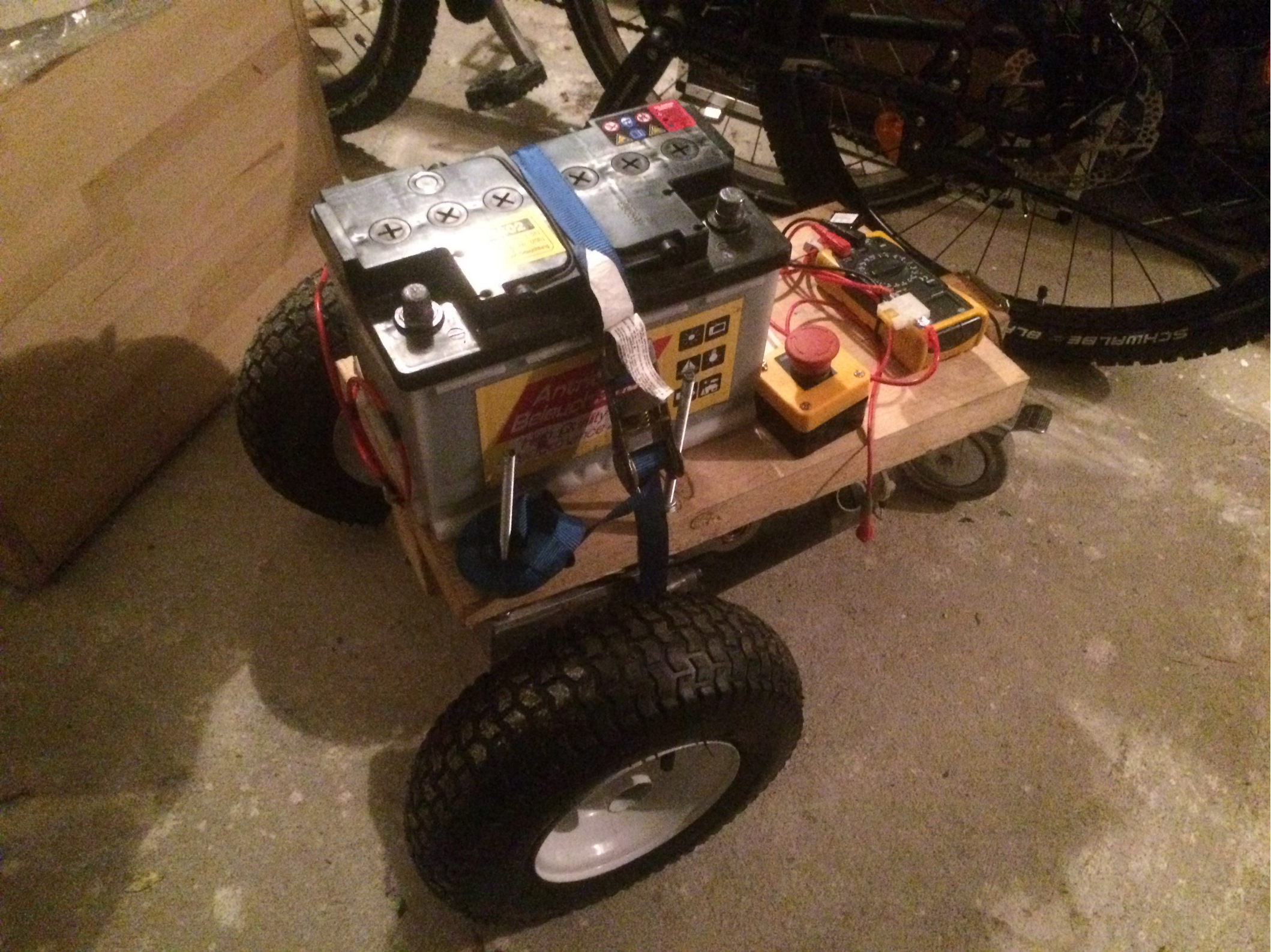
aMoSeRo

- Bestehend aus:
  - Xtion, CubiTruck, IMU, GPS
  - 2 Arduinos, 2 Motoren, Motortreiber
  - Gehäuse aus Aluminium und Plexiglas
  - Akkupack sowie vielen Kabeln
- ROS Indigo/Hydro kompatibel
  - potentiell autonom prgrammierbar
  - als Drohne für SLAM, 3D-Daten, Planning
- Unter 500€


Interact
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Nav Goal
Publish Point
Time
ROS Time: 1411664093.98
ROS Elapsed: 6706.03
Wall Time: 1411664094.08
Wall Elapsed: 6706.03
Experimental
Reset
Left-Click: Rotate. Middle-Click: Move X/Y. Right-Click/Mouse Wheel:: Zoom. Shift: More options.
11 fps


Interact
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Nav Goal
Publish Point
Time
ROS Time: 1411664039.13
ROS Elapsed: 6651.18
Wall Time: 1411664039.20
Wall Elapsed: 6651.18
Experimental
Reset
Left-Click: Rotate. Middle-Click: Move X/Y. Right-Click/Mouse Wheel: Zoom. Shift: More options.

Chaos Communication Camp



(Bilder)Quellen:

- http://wiki.ros.org/Robots
- https://github.com/honky/ProjectGuenther
- http://www.ros.org/about-ros/
- https://defendtheplanet.net/wp-content/uploads/2015/03/amosero.pdf
- https://www.flickr.com/photos/johanneshjensen/4984305980
- https://commons.wikimedia.org/wiki/File:Basic_robot.jpg
- http://www.turtlebot.com/
- https://www.willowgarage.com/pages/pr2/overview

Kontakt

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- Github.com/PaulPetring