# BarBOT

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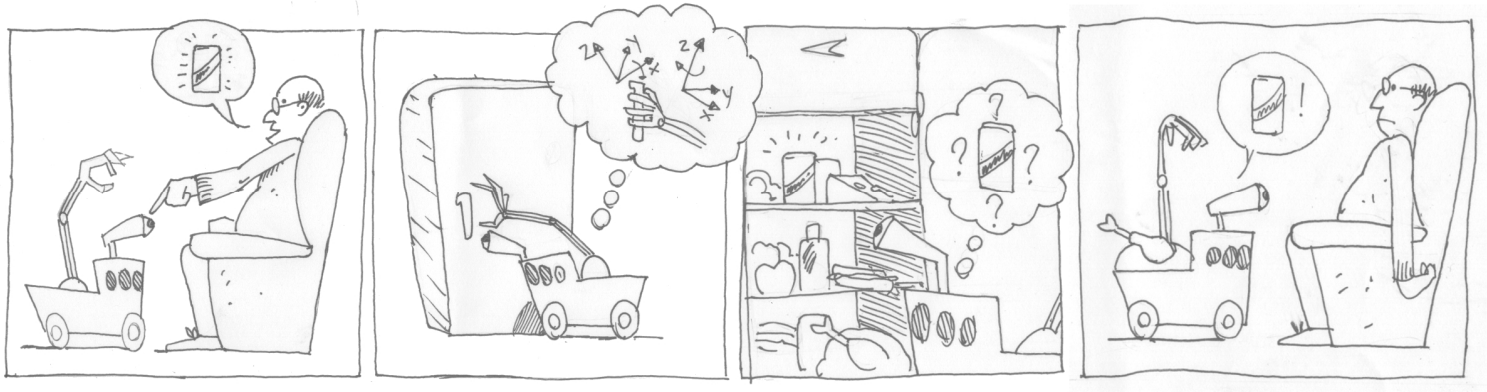
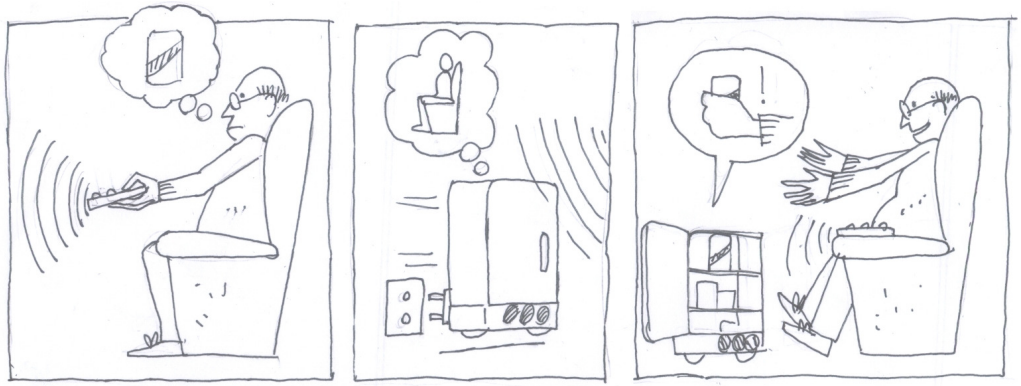
## *Typical* approach to home robots:



## *Novel* BarBOT approach:

- When idle, BarBOT recharges at the recharge station (the fridge is on).
- It is time to take medications (or something to drink)! Mario, sitting on a sofa in the dining room, calls BARbot with the remote control.
- BarBOT moves to the dining room: when in the room, the remote control is used as a beacon to guide BarBOT close to Mario.
- Mario opens the fridge and takes medications (or enjoys his drink).
- BarBOT moves back to the recharge station.



## The BarBOT hardware is composed of two integrated parts:

- A robotic platform with simple sensors and computing capabilities (similar to commercially available robots that cost around 300 euros, including the recharge station).
- A portable fridge (samples in commerce cost around 50 euros) that is connected to the power supply and turned on when the robotic platform is recharging.

## The BarBOT software is composed of simple modules, among which:

- A simple algorithm for sensor data processing and navigation allows to navigate between rooms without any self-localization skills (original mNav algorithm[1]).
- A simple algorithm allows to reach the recharge station or to move closer to the user (who operates the remote control) by following an infrared-beam.
- A communication interface processes commands issued using the remote control.

Total cost to customers: less than 500 euros!

[1] F. Mastrogiovanni, A. Sgorbissa and R. Zaccaria. Robust Navigation in an Unknown Environment with Minimal Sensing and Representation. In *IEEE Transactions of System, Man and Cybernetics - Part B*, Volume 39, Issue 1, Feb. 2009 Page(s):212 – 229.