

## 1.2 Progress beyond the state-of-the art

The main company involved with this topic is iRobot with its production line of Roomba products. Roombas are shown to be practical, but since their launch, only incremental improvements have been made, and they still do essentially the same thing. Rombas have the following features:

- Maps your home to efficiently clean an entire level
- See where Roomba cleaned
- Cleans all floor types
- Cleans until the job is done.
- Control from your smart phone.

Some alternatives to Roomba include:

- Neato Botvac Series One of the biggest point of differences between Neato and Roomba is the navigation system. Neato use a laser sensor called the RPS, so before the Neato even starts it's first clean, it's scans the room and sets out a map of the perimeter to avoid obstacles.
- Samsung NaviBot Corner Clean The NaviBot maps out the home using its Visionary Mapping Plus system, the NaviBots camera takes a series of images of the ceilings in your home to build a visual map. The Samsung NaviBot has it's Auto Dust Emptying system – an add on dustbin that the NaviBot empties into, meaning it wont need to be as emptied nearly as much as it's Roomba competitor.
- Infinuvo Hovo Its biggest appeal is the price. Infinuvo, along with some other companies are just making more or less the same product as Roomba, but less polished, with competitive prices to lure in the more economical part of the market.

We have carried out a patent search, with the following patents being relevant: Autonomous floor-cleaning robot US 6883201 B2

Autonomous cleaning robot US 20130270459 A1

Autonomous surface cleaning robot for wet and dry cleaning US 8774966 B2

We want to expand beyond the current state-of-the art by using the already proven great features of robot cleaners, and adding more functionality. All these patents focus on cleaning the floor, but the logical follow up is to extend the possibilities so that it can also autonomously take care of other surfaces, like cleaning the corners of the walls, cleaning the windows, and other user designated surfaces such as tables and shelves. And that is exactly what our goal with the SRHC is.