

Cleaning, Mapping, and Disinfecting Robot Design Proposal

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Outline

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2 Current Design

3 Development Plan

- CAD Modeling
- Electrical and Software Design

Introduction

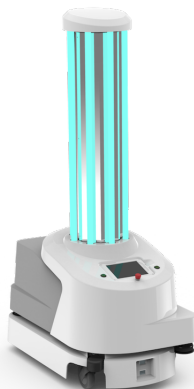


Figure: UVD Robot, source: <http://www.uvd-robots.com/>

Introduction



Figure: Xenex LightStrike Germ-Zapping Robot, source:
<https://www.xenex.com/our-solution/lightstrike/>

Introduction

- The proposed robot will offer a modular design and open source architecture
- Disassembly will be one of the key features allowing parts to be added or changed
- Software and hardware will be completely open source

Introduction

- Robot will include a disinfectant sprayer in case a room is unsafe to be cleansed with UV light
- Vacuuming feature will be added to further set the robot apart from its commercial counter parts

Current Design

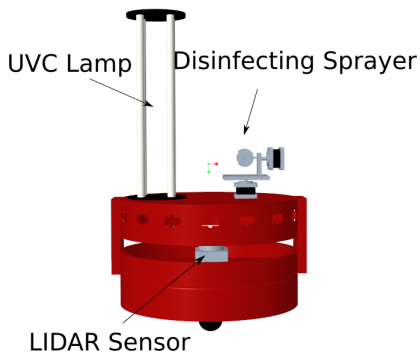
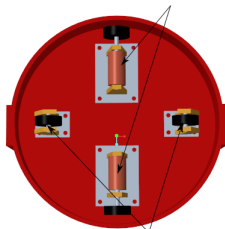


Figure: Side view of the current robot design

Differential Drive Wheels



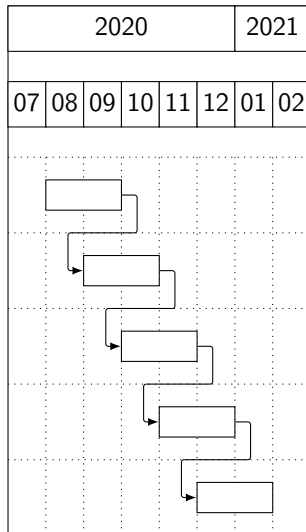
Caster Wheels

Figure: Bottom view of the current robot design

Development Plan

CAD Modeling

- Redesign outer shell of the robot
- Design vacuuming system
- Create mount points for sensors
- Design disinfectant sprayer mechanism
- Design caster and drive wheel mounts



Electrical and Software Design

- Develop power delivery system
- Create connections with the onboard SBC
- Develop software and firmware

Any Questions?