

Design Criteria and Target Specifications

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Abstract

This document will be a list of prioritized design criteria, do technical benchmarking and determine target specification.

Objective

Define a list of prioritized design criteria, do technical benchmarking and determine target specifications which can be used in the development of your final solution.

1. List of prioritized design criteria
 - a. Be able to hold different tools
 - i. Pressure washer
 - ii. Sand blaster
 - iii. Paint
 - iv. Camera
 - b. Safety
 - i. Made out of reliable material
 - ii. Cost effective but not compromising integrity of arm
2. Technical benchmarking
 - a. Durability of the arm and electronic components
 - i. Competitors products made for recreation have very short lifespan and are broken or damaged easily
 - ii. Our arm must be able to function as intended without repairs for at least multiple weeks, preferably a month.
 - b. Price point
 - i. Competitors have high prices for low lifting power

- ii. Eg. An \$850 dollar arm capable of lifting ¼ kg
 - c. Reach and total arm length
 - i. Reach should be at least 30 cm
 - ii. Competitors are on average under that mark (28 cm of reach / 35 cm in total length)
 - d. Controllers
 - i. Our controllers will be an alternate way for our client to operate the arm
 - ii. This will make our operators to have an easier learning curve with the robot
 - iii. The controllers will just be a quality of life option to have our robot will be fully automotive
- 3. Target specifications
 - a. Lifting capacity
 - i. 0.75 kg
 - b. Reach of arm
 - i. >30 cm
 - c. Weight of arm
 - i.
 - d. Dimensions
 - i. Height - 20 cm
 - ii. Width - 5
 - iii. Base - 15x15
 - e. Interface
 - i. The user interface will contain the power on/off option
- 4. Reflect on previous client meeting

Talked with our project manager and teaching assistants on ways to improve our communication between us the manufactures and our client

Discussing the needs the client wanted last week, is helping us perform this deliverable by having our ideas and needs organized beforehand, so that we take less time to discuss design criteria.

Table

	Competitor: MyCobot + Flat Base	Planned Specifications
Price	\$848.99	\$100
Lifting Capacity (grams)	250	750
Reach (cm)	28	>30
Dimensions collapsed (cm)	unknown	15x15x20