ACTION ITEMS

TEAM: 23 Clean Room

Due Date:
Monday, February 4th, 2019 5:00pm

The following are the Action Items from last week:

Team Member: Katie Hoffman

Action Item	Date Due	Date Completed	Result/Proof of Completion
Cut all the Aluminum framing for the hood.	Jan. 26 2019	Jan. 29, 2019	See Appendix C
Update and verify the items on the BOM are correct and all hood items are ready to purchase.	Jan. 26, 2019	Jan. 26, 2019	Completed with the team and have items for all the materials, except the vinyl sheeting. Appendix D
Take detailed measurements of the fans to build the frame.	Jan. 24, 2019	Jan. 24, 2019	Took measurements with Hannah. See Appendix A
Start searching for the final materials for the room and where to purchase.	Feb. 3, 2019	Jan. 26, 2019	Started and almost completely finished with the team, The vinyl sheeting is the only material still being researched.
Start working on the report edits and making the functional decomposition	Feb. 3, 2019	Jan. 30, 2019	I worked on all of Section 2. Appendix D

Team Member: Daniel Marquez

Action Item	Date Due	Date Completed	Result/Proof of Completion
Joined Arduino club for pressure transducer	Jan. 29 2019	Jan 29. 2019	Have a code I created and picture of dead weight used for calibration
Cut all the Aluminum framing for the hood	Jan. 26 2019	Jan. 29, 2019	See Appendix C
Update and verify the items on the BOM are correct and all hood items are ready to purchase.	Jan. 26, 2019	Jan. 26, 2019	Completed with the team and have items for all the materials, except the vinyl sheeting, still looking for a cheaper option.

Team Member: Hannah Reed

Action Item	Date Due	Date Completed	Result/Proof of Completion
Cut all the Aluminum framing for the hood.	Jan. 26 2019	Jan. 29, 2019	See Appendix C
Update and verify the items on the BOM are correct and all hood items are ready to purchase.	Jan. 26, 2019	Jan. 26, 2019	Completed with the team and have items for all the materials, except the vinyl sheeting, still looking for a cheaper option.
Take detailed measurements of the fans to build the frame.	Jan. 24, 2019	Jan. 24, 2019	Took measurements with Katie. See Appendix A.
Start searching for the final materials for the room and where to purchase.	Feb. 3, 2019	Jan. 26, 2019	Started and almost completely finished with the team, the vinyl sheeting is the only material still being researched.

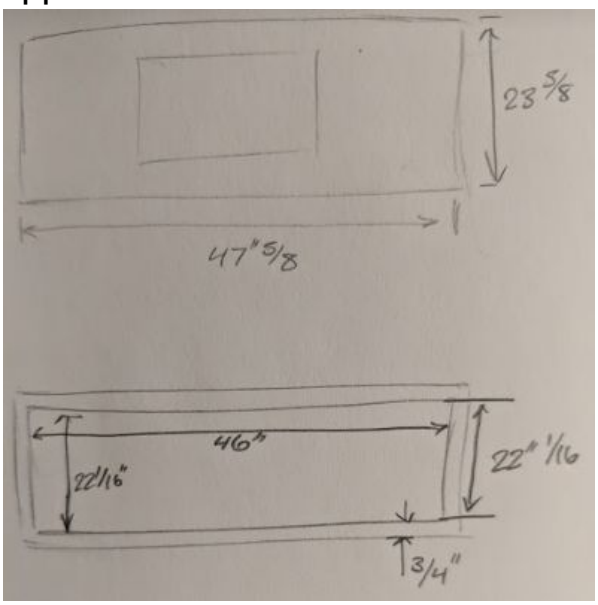
Finalize where the polycarbonate will be ordered from.	Jan. 25, 2019	Jan. 31, 2019	Email documentation from Dr. Becker for quantity and qualification check of the product. Team was CCed on the emails. Appendix B.
Start working on the report edits and making the functional decomposition	Feb. 4, 2019	Feb. 4, 2019	Created the functional model for the report. shown in Appendix E.

The following are the Action Items for next week:

Team Member	Action Items	Date Due
Katie Hoffman	1. Continue work on editing the Final Report (approx. 5 hours) 2. Work on Individual Tech analysis (approx. 3 hours) 3. Evaluate aluminum framing at Home Depot for the room (approx. 1.5 hour)	1. Feb. 11, 2019 2. Feb. 11, 2019 3. Feb. 7, 2019
Daniel Marquez	1. Continue work on Arduino 3 hrs 2. Work in report 5 hrs 3. Look for aluminum framing 1hr 4. Work on finding proper for pressure transducer 3 hrs	1. Due date 1 2. Due date 2
Hannah Reed	1. Website Updated for Web Check (appx. 2 hrs) 2. Work on report edits (appx. 5 hrs) 3. Update CAD package to revised dimensions (appx. 0.5 hrs) 4. Find Vinyl sheeting for room (appx. 1 hr) 5. Find power cord for fans (appx. 1 hr)	1. Feb. 8, 21:00 2. Feb. 10, 21:00 3. Feb. 11, 2019 4. Feb. 11, 2019 5. Feb. 11, 2019

Appendix

Appendix A



Appendix B

Hannah Reed Jan 30, 2019, 10:17 PM (4 days ago)
Dr. Becker, We have found a 1/4in thick poly sheet, it is form ePlastics, and the link is attached below. We looked at the 3/8in stock and it was close to $1000

Timothy A. Becker Jan 30, 2019, 11:36 PM (4 days ago)
I sent you a quote from Interstate Plastics. I've used them a bunch. Looks like its coming in $100 less, plus there is a coupon code insta10, which should save

Timothy A. Becker Jan 31, 2019, 3:04 PM (3 days ago)
Did you check with HomeCo on Butler? They have a much better polycarbonate supply and cutting station than Home Depot. Bill has used them recently, and thinks t

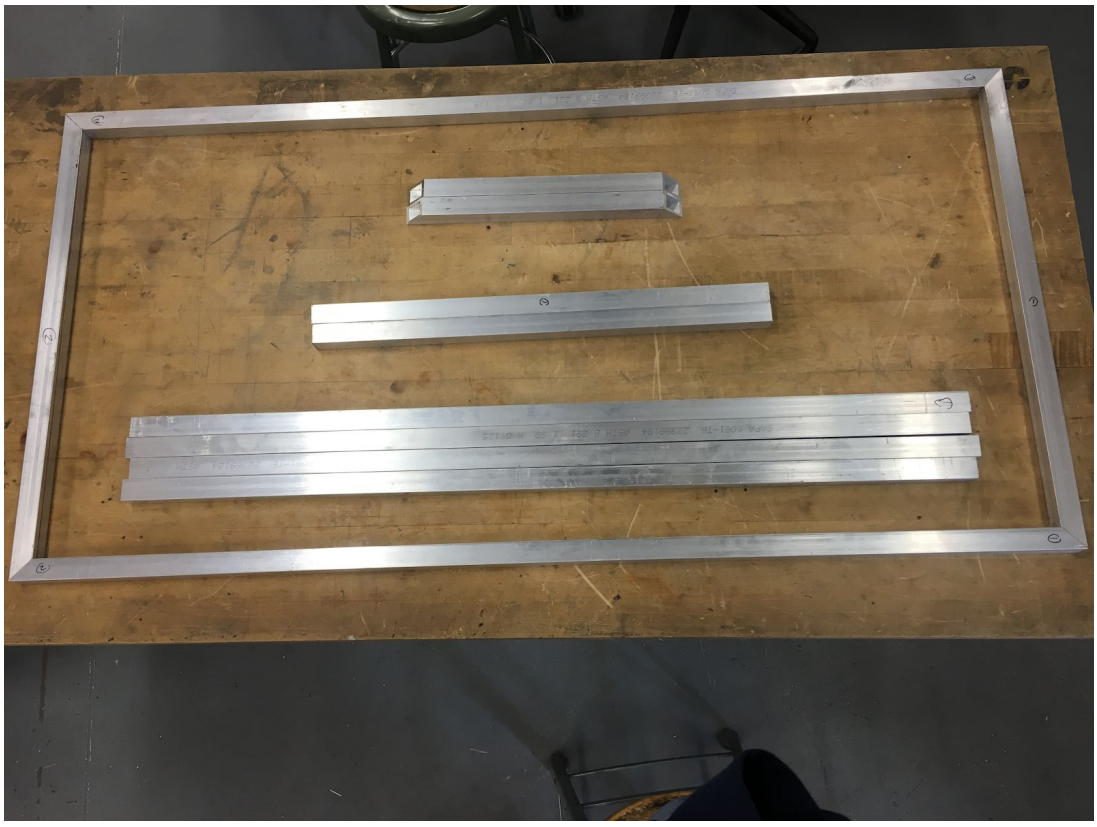
Hannah Reed Jan 31, 2019, 9:32 PM (3 days ago)
Dr. Becker, Thanks for the link to Interstate Plastics, we didn't come across it while searching the web. We looked at HomeCo a few weeks ago, and they didn't h

Timothy A. Becker Jan 31, 2019, 11:32 PM (3 days ago)
I can send it in tomorrow. So the link I sent you was the quality with the coating you needed? DrB Co-Director. Bioengineering PHD Program Flagstaff, AZ 86011 T

Hannah Reed <hjr39@nau.edu> Feb 1, 2019, 6:40 AM (2 days ago)
to Timothy

Yes the link sent will work fine

Appendix C

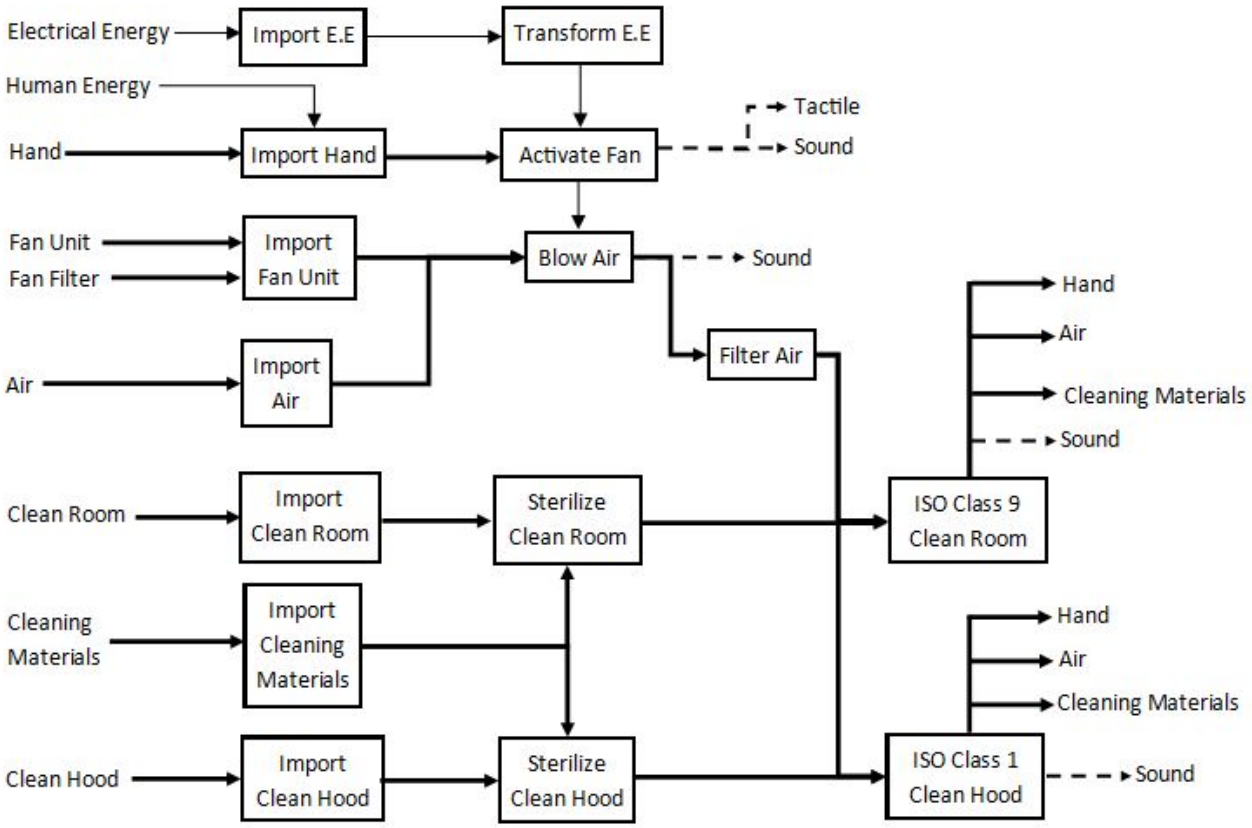


Appendix D

Bill of Materials

Team				Clean Dream Team					
Part #	Part Name	Qty	Description	Functions	Material	Dimensions	Cost	Total Cost	Link to Cost estimate
1	Aluminum Frame	12	Room Frame	Supports Fan	AL	97"x1'	$ 27.50	$ 330.00	https://www.grainger.com/category/aluminum-extrusions/structural-framing-systems/material-handling/ecatalog/N-c3q#nav=%2Fcategory%2Faluminum-extrusions%2Fstructural-framing-systems%2Fmaterial-handling%2Fecatalog%2FN-
2	Plastic Sheeting Roll	1	Plastic to Wrap Room	Creates covering for room	Plastic	8'x100'	$ 78.00	$ 78.00	https://www.homedepot.com/?cm_mmc=SEM-%7CGA%7CBase%7CNA%7CNA%7CNA%7CBT1%7c7170000002449093%7c58700000047538642%7c43700003817116349&ds_rl=5041&gclid=Cj0KCQiA3IPgBRCAARIsABb-iGKe4e_BM97hMySr3rp6pmb7vCHIl8vxipQNdmKFofIbK8idHENquRQaAt6pEALw_wcB&gclsrc=aw.ds
3	Polycarbonate	1	Material For Hood	Creates convering for hood	Polycarbonate	48"x96"x.125"	$ 140.25	$ 140.25	https://www.eplastics.com/sheets/polycarbonate/clear?page=2
4	Aluminum Frame	8	Hood Frame	Supports Fan	Aluminum	36"x.5"x1/16"	$ 11.53	$ 92.24	https://www.grainger.com/category/aluminum-extrusions/structural-framing-systems/material-handling/ecatalog/N-c3q#nav=%2Fcategory%2Faluminum-extrusions%2Fstructural-framing-systems%2Fmaterial-handling%2Fecatalog%2FN-
5	Velcro Duralock	2	Adhesion for plastic Wrap	Holds plastic wrap in place	Velcro	1"x75'	$ 52.00	$ 104.00	https://www.homedepot.com/p/Liquid-Nails-Fuze-It-9-oz-All-Surface-Construction-Adhesive-LN-2000/206736831
6	Aluminum Joints	16	Joints to support Frame	Supports frame	Aluminum	n/a	$ 8.50	$ 136.00	https://www.homedepot.com/?cm_mmc=SEM-%7CGA%7CBase%7CNA%7CNA%7CNA%7CBT1%7c7170000002449093%7c58700000047538642%7c43700003817116349&ds_rl=5041&gclid=Cj0KCQiA3IPgBRCAARIsABb-iGKe4e_BM97hMySr3rp6pmb7vCHIl8vxipQNdmKFofIbK8idHENquRQaAt6pEALw_wcB&gclsrc=aw.ds
7	Polycarbonate Cutting	1	material to cut plastic	helps with sizing poly	Polycarbonate	n/a	$ 20.00	$ 20.00	https://www.homedepot.com/?cm_mmc=SEM-%7CGA%7CBase%7CNA%7CNA%7CNA%7CBT1%7c7170000002449093%7c58700000047538642%7c43700003817116349&ds_rl=5041&gclid=Cj0KCQiA3IPgBRCAARIsABb-iGKe4e_BM97hMySr3rp6pmb7vCHIl8vxipQNdmKFofIbK8idHENquRQaAt6pEALw_wcB&gclsrc=aw.ds
8	Shear Pins	4	Holds legs in place	Help adjusting size of room	steel	2.75"x6"	$ 1.76	$ 7.04	https://www.homedepot.com/p/Ariens-Deluxe-Sno-Thro-Shear-Pin-72100500/202274701
9	Epoxy	4	seals the polycarbonate	creates a seal for no air to escape	plastic	n/a	$ 5.47	$ 21.88	https://www.homedepot.com/p/Loctite-0-85-fl-oz-Plastic-Epoxy-1360788/100371824
10	Heavy Duty Swivel Caster Wheels w/Double Locking Brakes.	4	600lb capacity swivel caster wheels	Allows for the portable room to be stationary and movable	5 x 1-1/4 in nylon polymer wheel.Frame 0.10 in. chrome steel & platform 0.12 in. galvanized steel; double ball-bearing swivel	Wheels - 5 x 1-1/4, Frame 0.10 in, platform - 0.12 in	$19.97	$ 39.94	https://www.amazon.com/Heavy-Duty-Swivel-Casters-Double-Lock-Brake/dp/B008S52OHQ
11	Fan Filter Unit - Whisperflow	2	Fan Filter Unit	Induce positive pressure and produce filtered clean air	Powdered-coated steel	2'x4'x1.5'	$780.00	$ 1,560.00	https://www.terrauniversal.com/product/6601-24-H
			Total Cost Estimate:				$ 2,529.35		

Appendix E


Electrical Energy
Import E.E
Transform E.E
Human Energy
Hand
Import Hand
Activate Fan
Tactile
Sound
Fan Unit
Fan Filter
Import Fan Unit
Blow Air
Sound
Air
Import Air
Filter Air
Hand
Air
Cleaning Materials
Sound
Clean Room
Import Clean Room
Sterilize Clean Room
ISO Class 9 Clean Room
Cleaning Materials
Import Cleaning Materials
Hand
Air
Cleaning Materials
Clean Hood
Import Clean Hood
Sterilize Clean Hood
ISO Class 1 Clean Hood
Sound

Appendix D

2 REQUIREMENTS

The requirements of this project include the customer requirements and the engineering requirements. The customer requirements were provided directly from the client/sponsor. The engineering requirements are derived from the customer requirements using the House of Quality (HoQ) and are given a unit of measurement and a targeted value. Then the engineering requirements are put through a testing procedure (TPs) to verify if the customer requirements are met.

2.1 Customer Requirements (CRs)

The customer requirements were obtained during the first client meeting and from the project description they are listed below.

Table 1: Customer Requirements

Customer Requirements	Weight	Objective
Inexpensive	5	Maintained a controlled clean environment
Portable	3	Low cost and remain within budget
Positive Pressure	5	Meet FDA classification requirements of number of particles in the air per cubic meter
Visibility	2	Ability to be assembled, disassembled, and be carried by 3-4 people
Clean	4	Ability to see inside the structures
Reliability	3	Reassurance that the structure will not fail
Durability	3	Last for an extended amount of time
Noise	4	low emission of noise from FFUs