

Team: P18347 Engineer: Christina Pensabene
Entering Phase: 3

What do I plan on doing to ensure that Team P18347 has a successful Phase (3) review?

- Continue to run test plans
- Record and analyze the data from the tests and decide what improvements need to be made if any
- Make an outline of what we have accomplished and what needs to be accomplished for the final phase
- Assist any team members in anything they need
- Keep my documents organized and update EDGE

You will answer these three questions when you submit at the end of Phase (1).

1. What did I actually do?
 - Updated test plans
 - Completed two test plans with Maura and Emily-Preliminary air quality using a humidifier and a water bottle with hot water
 - Recorded data for those test plans, organized the the results, and wrote conclusions and recommendations for moving forward
 - Met with team to create a timeline of what needs to be done for the upcoming phase and how long it will take
 - Created an excel sheet to keep track of what tests were completed and their results
 - Help update our EDGE page
2. What did I learn?
 - It is going to be very important for team members to help each other out in the next phase as there is a lot of work to be done and some people have a lot more work than others
 - Not all of our testing is going to go as it was originally outlined in MSD 1
3. What do I plan on doing to ensure that Team P18347 has a successful Phase 2 Review?
 - Finalize our test results so they are presentable
 - Upload my documents to EDGE in a timely manner
 - Help out teammates with anything they need before the review
 - Make sure EDGE is completely updated and sent out 24 hours before the review to our guide and customer

Team: P18347 Engineer: Danielle Labelle
Entering Phase: 3

What do I plan on doing to ensure that Team P18347 has a successful Phase (3) review?

- Work with electrical engineers to refine seat heater
- Mount electrical components to the stroller
- Assist in testing the system UI
- Test the movement of the stroller
- Keep documents organized and up to date

You will answer these three questions when you submit at the end of Phase (1).

1. What did I actually do?
 - Created CAD for a battery enclosure
 - Worked with Ian to prototype and test the seat heater
 - Updated the Risk Management document
 - Met with team to create a timeline of what needs to be done for the upcoming phase and how long it will take
2. What did I learn?
 - It will be very important for each team member to take responsibility for their tasks and be open about any challenges they run into as our timeline is pretty full for the next phase
 - Testing will take longer than originally planned for
3. What do I plan on doing to ensure that Team P18347 has a successful Phase 2 Review?
 - Finalize the battery box design so that it can be added to the component placing document
 - Upload my documents to EDGE
 - Help out teammates with anything they need before the review

Team: P18347 Engineer: Prince Rex
Entering Phase: III

What do I plan on doing to ensure that Team P18347 has a successful Phase (III) review?

1. Work with EEEE team member to look after the various build aspects of our seat heater and report the results achieved.
2. Create and update budget sheets.
3. Test battery input and output voltages.
4. Update EDGE when tasks are completed.
5. To continue documenting all information in detail when it comes to buying something.
6. Making sure all documents are filled out correctly and all members are aware of the purchases.

You will answer these three questions when you submit at the end of Phase (I).

1. What did I actually do?

- a. Updated Budget sheet.
- b. Updated EDGE with cost breakdowns.
- c. Ordered the remaining finalized components.
- d. Participated in team meetings to learn about what items to order.

2. What did I learn?

- a. Decisions by the whole team is very important while ordering expensive components for the project since it can make a dent on our budget.
- b. Learned to understand I need to keep a check on items even after ordering since there might be some technical difficulties at the MSD office.
- c. Learned to foresee about shipping and other vendor related delays and added them to to our build timeline.

3. What do I plan on doing to ensure that Team P18347 has a successful Phase (II) review?

- a. Make sure EDGE is completed updated and sent out to our guide and customer 24 hours before our review
- b. Make sure all my documents are completed and the items ordered are received before the phase 2 review are collected and checked and necessary returns should be done if needed.
- c. To continue to update my team about the financial situation and discuss how to use the remaining budget wisely.
- d. Meet with my team before the review to practice who will talk what and make sure documents on EDGE is correctly updated.

Engineer: Emily Heitzhaus

What do I plan on doing to ensure that Team P18347 has a successful Phase 3 review?

1. Assist teammates with the mounting of components to the stroller.
2. Perform the ease of movement test of the stroller.
3. Go to JoAnn fabric to purchase the nylon, thread, and zippers
4. Assist with the test of user interface of system.
5. Continue to update the BOM and make sure team stays on track.
6. Continue to update problem tracking log as new problems arise.

You will answer these three questions when you submit at the end of Phase 2.

1. What did I actually do?

- Assisted with making decisions where the components would be placed on the stroller.
- Assisted with the ventilation testing.
- Made the schedule for MSD II Phase 3.
- Worked with the team to make sure all goals for Phase 2 were met.

2. What did I learn?

- It's important to keep all team members involved on work going on. That way if something happens with a team member, we have a way to cover the workload.
- The EE's and the MECES need to continue to work together and communicate to keep the systems working well together.
- It's important to keep the stakeholders updated on the status of each part of the project, not just at the different reviews.

3. What do I plan on doing to ensure that Team P18347 has a successful MSD2 phase 3 review?

- I will continue to make sure the team has good communication, especially between the different disciplines.
- I will continue to make sure the workload is evenly distributed amongst team members.
- I will continue to update the schedule accordingly.
- I will continue to update the BOM.

Team: P18347 Engineer: Maura Keyes
Entering Phase: 3

What do I plan on doing to ensure that Team P18347 has a successful Phase (3) review?

- Assist Ian with any mechanical/electrical hardware for fixturing, enclosures, and connections
 - Assist with Microcontroller CAD modeling and 3D enclosure printing
 - Contact Denis Cormier for use/best practice of 3D scanner
 - Contact Mike Buffalin for use/best practice of 3D printers and set up in the Construct
- Assist with component mounting
- Lead sewn component needs
 - Go to JoAnn Fabrics with Emily, speak with crafts expert personnel on whether we should use “extra strong & upholstery” nylon thread or “outdoor living” polyester thread to make strong seams that would tear through the plastic
 - Develop seam diagrams for how seat should be sewn for removability (so it can be washed)
 - Take all components in need of sewing home with me over Spring Break to continue build & testing upon return (reliant upon heat movement through the seat being mostly finalized)
- Perform secondary Air Quality testing with heated seat components on
- Plan date for my mom and brother to come up so we can observe how she tries to operate the stroller/ how brother behaves with system components (will not turn the system on with him inside)

You will answer these three questions when you submit at the end of Phase (2).

1. What did I actually do?
 - Assisted team in updating test plans with Christina
 - Performed two preliminary runs of test plans with Christina and Emily: Stroller Pod Air Quality test using a humidifier and a water bottle with hot water (3x each)
 - Interpreted results of the experiment to metrics understood by ASHRAE analytical methods using the CBE Thermal Comfort Tool
 - Checked comfort of the child under experimental results
 - Checked conformance of the results to ASHRAE-55
 - Reasoned why conditions fail
 - Created timeline with team of objectives to be completed in the next phase and approximate times to complete tasks
 - Performed component placement testing with cardboard mock-ups of battery box and other components to determine how we needed to mount them to maintain full range of collapsibility on stroller
 - Communicated between subgroups to attempt to understand design decisions and integration for the next phase
 - Helped update our EDGE page
2. What did I learn?

- The next phase is going to be very busy and we all need to be open about meeting outside of class hours to complete tasks on time
 - Testing will take up the remainder of MSD II
 - We need to build fast to test more
 - Preliminary Air Quality testing did not yield valid results, we need to make an experimental model that accounts for more heat generation and less moisture generation
3. What do I plan on doing to ensure that Team P18347 has a successful Phase 2 Review?
- Finalize experimental results and conclusion of the Preliminary Air Quality tests with plans on how to improve the test for the next phase
 - Upload my documents to EDGE
 - Practice my part of the review
 - Help out teammates with anything they need before the review

Engineer: Ian Smith

What do I plan on doing to ensure that Team P18347 has a successful Phase 3 review? When will each task take place? Does sequencing matter?

1. Assist the team in editing the EDGE page and review it the day before the next design review.
2. Answer any and all questions the team may have regarding the electrical system.
 - a. Assist danielle with the creation of the battery box, and provide feedback on what I believe will and will not work.
3. Work with team to determine what we want to display on the main screen of our system [user interface layout].
 - a. Implement the determined layout in software and verify with team that it is what we want.
4. Work with team to determine finalized locations of UI inputs on stroller.
 - a. Determine if we want to use a different size of arcade button and color such that the UI is less confusing to the customer. (Ian had a number of pink 33mm arcade buttons laying around from a high school project that never got finished)
5. Come up with a way to charge the stroller battery easily without having to remove it from the battery box
6. Convert subsystems that were initially prototyped on a breadboard to individual components that can be mounted to the stroller.
 - a. ie: Solder subsystems such as the temperature sensor circuit to a permaboard.
 - b. Double check list of parts needed for this step to be completed before handing it over to Prince to order.
7. Program the arduino such that the individual subsystems work together.
 - a. Take input from user and adjust temperature setting accordingly
 - b. Take temperature reading from sensor, and use it to control heater (on/off like a thermostat)

You will answer these three questions when you submit at the end of Phase 3.

1. What did I actually do?
 - Helped update the BOM and provide missing information.
 - Added additional items as needed, forgot to update team about it though so they haven't been taken care of yet. It will get done in the next phase.
 - Worked with Danielle on the design and testing of the seat heater for the stroller.
 - It took a while due to items listed in the electrical subsystem status update i linked to edge.
 - Programmed basic functionality of subsystems.
 - Got digital inputs working from pushbutton to arduino
 - Figured out how to control the relay used to switch off/on the seat heater.
 - Worked on debugging the high fluctuation in data values from the temperature sensor. Determined that I was missing an analog to digital converter. Decided it would be cheaper and easier to implement a different temperature sensor that works the way I was trying to make this

one work instead of purchasing and ADC and programming that in addition to the other work I have to do.

2. What did I learn?

- A large amount of the project functioning properly falls on my shoulders.
- Creating a seat heater (or atleast the heating element) from scratch designed to certain constraints is more time consuming than you would think.
- Ordering parts off of sparkfun or adafruit means that normally there is a full guide on their website somewhere on how to properly use that part and sometimes they even have example code.
- Documenting your work is not only important for others figuring out what you did, but also for when you have to write a report on it a month later and forget what you did.
 - As a team we need to do a better job of keeping each other informed on what we have done recently
- I need to write down my tasks and make them into a list otherwise I will forget what I said I was going to do.

What do I plan on doing to ensure that Team P18347 has a successful MSD2 phase 4 review?

- I will review the edge page prior to the design review to check for any errors or last minute changes needed.
- I will work with the rest of the team to add any needed information/ help where needed
- I will complete any electrical subsystem issues (hardware or software) not resolved by the end of phase 3