

Meeting Activity Agenda

15001

Attendees:

- Adam Podolec: Electrical Engineer / Project Lead
- Megan Ehrhart: Senior Electrical Engineer
- Tyler Leichtenberger: Mechanical Engineer
- Noah Schadt: Mechanical Engineer / Team Facilitator
- Jared Green: Senior Mechanical Engineer
- Geni Giannotti: Biomedical Engineer / Treasurer

Current Meeting	Next Meeting
Location: MSD Area	Location: MSD Area
Start Time: 11:00am	Start Time: 11:00am
End Time: 2:00pm	End Time: 2:00pm
Meeting Date: Tuesday 12/2/14	Meeting Date: Thursday 12/4/14

Old Business Items:

-

New Business Items:

Items Left Outstanding:

-

Action items – Owners / Deadline:

- ❖ Team Tasks - All
 - Keep track of action items from the review

Geni	Megan	Tyler	Adam	Jared	Noah
		Muscle-Opt. stage III	Plugging the port		Muscle-Opt. stage III
	Pseudocode	Risk list - iterate	Build, Assy, Debug Plan	MSD II Project plan	Build, Assy, Debug Plan
GAD drawings (Dimensionally accurate)	Layout	Research improvement	Power ratings?	Power ratings?	Research improvement
BOM/ Purchasing - (A/R)	Software code	Upper muscle attachment	Abstract	Lower plug design	Lower plug design
IRB permission	Upper component housing	Stress analysis	ER mapping	Leg PCB housing	Upper component housing
		See Jared about O-Rings	Gate Review Email		
					Action items

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Meeting Notes:

- Content Gate Review on mycourses, are you ready?
- MSD II: In first two weeks we need a full plan and stuff ready
 - After that, 5-14 have demo's ready
 - Was integrated subsystems
 - Imagine RIT May 2nd 2015
 - 1st phase 10%
 - 2-3 phase 20%
 - 4-5 phase 25%
- Fisher Price talk at 1pm
 - User products
 - Human interface
- Brinkman processes
 - Changed data entry method
 - New form by John's door for Brinkman Lab
 - 3D printing falls in the scope

Guidelines:

- DDR-
- Gate Review Tuesday December 16th 3-4pm
- MSD II Thursday 8-9:30am
- Don't expect a critical DDR
- Gate review remaining
- Take care of first part of MSD II
- 3 Week plans
- Shared vision for imagine RIT draft version
 - Demonstrate to average person
 - When you find someone who has a need what would you do?
 - We have these links in open source
 - Putting it in a form that is open source
 - Just planting seeds
 - Shure as rain
 - Talk to Dr. DeBartolo
 - How will you address these requests
- Draw back to week 5
 - What do we need to be accomplished?
 - Tasks do not equal deliverables
 - How high should the bar be?
 - How much time should be allocated for learning?
 - We are in good shape
 - Bonus thing for MSD II
- Risks we think are real are real
 - Problem tracking
 - Start tracking documents and take a stab before we go home

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- Many will not be easy
- Symptoms are not problems
- “You’re done” at the gate review
- DDR working meeting
- Be able to provide elevator speech
- Gate review done with MSD I
- Look at deliverables for MSD II
- Shared vision for Imagine RIT
- Talk to Dr.DeBartolo about expectations
- Frame how will we answer that?
- High level use the problem solving – take a stab
- 14546 – end state 20 min (presentations Thursday morning)
- “Don’t air your dirty laundry in public”
- Gate review 3-4 on Tuesday December 16th
- Thursdays MSD II
- *PCB before or after break? It has a 2 week lead time*
- Had a lengthy discussion about the term “Janky”
- Guide showed us his “janky” slide rule and pocket protector full of tools
- Q. What’s the probability of the board not working?
- Working meeting with Dr. DeBartolo
- Enhance our testing thinking
- Shared vision for MSD II – look to week 5
- Shared vision for Imagine RIT
- Beyond what he expects
- Does not expect 100%
- ER is an implied contract
- Think about highest risks
- Problem Solving Spreadsheet (PSS) – reuse of tools
- Get to root cause
- What can we do about it?
- Cost? Eval? Pick solution and implement it
- No one cares about your design process when everything is going well
 - It’s when you run into problems
- Doc drafts in by Sunday evening
- When asked about changing our commitments to A level work
 - We have earned credence manage our own plans – just rationalize it for him

Dr. D came by:

- Buying PCB from MSD office?
 - Forms are on mycourses
 - They can help you in the office
 - Check with Chris – your not the first team who has had to order PCBs

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- Then see Prof. S
- They support your decisions
- Discussed Imagine RIT with customer
- Even when demonstrating a rigid AFO people were interested (everybody and their brother)
- You may very well have a good product
- View as a deliverables
 - Run that by Dr. D, we're not going to do the work in MSD I and instead focus on documentation
- Send them the information that they could get the board printed FSI
- John Malvaso think tank <http://fsisys.com/news/FBC-Launch>
- There was a grant that was applied for, talked about funding (ambiguity in notes)
- Hope we make the funding
- (meeting) work from EDGE again
- Make sure to give elevator speech for new people
- You guys are in very good shape
- Then learn from it
- It's got to be ED Proof
- 14361 Burn things up <https://www.youtube.com/watch?v=C8sL24Bt3mw> (8:25)
- Laurence Hoffman

Team began working on week 2 shared visions

- Upper plug
- Upper base
- Lower plug
- Component housing
- Strap
- Finalize PCB
- Smoke Test

Began working on Imagine RIT shared vision

- Demonstrate to average person
 - If we let them try it on we would need approval
 - Disposable socks?
 - Perhaps get Adam's friend to demonstrate
 - 2hrs per shift
 - Will we be near stairs?
 - A video running on a TV
 - Adam to bring TV
 - Animated data
 - Noah think he can make it work
 - QR code to EDGE
 - Consider air pressure as we get closer
 - Weights on a table?
- For someone who is interested in obtaining one

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- Administer handouts of project overview
- Info for how we made it
- Handout info about Nazareth
- Megan MSD II

Fisher Price Design Engineering experiences

- They have a department to listen through social media
- Safety review for elephant
 - Concerns:
 - It can pinch fingers
- Smart train
 - Try me features
 - They had trouble getting the consumer to get past the try me mode
 - Learned that they can't rely on the customers
 - Need to make the product intuitive
- They are often constrained in box size for stores
 - So their toys often need some assembly
 - In home testing
 - More than 1/5 didn't put it together correctly
- Takes a lot of R&D time to make new products
- Kids play differently
- Failure is how you learn
 - Senior design team who burst the pipe since the water pressure was too high
- Need to support a claim
- Case study:
 - Play station 4 had a known 0.4% defective rate
 - 1 star reviews early
 - 5 star reviews later
 - Some people scan reviews on a product from their phones in the store
- Boat:
 - Worst toy ever
 - Boat did not float unless properly aligned
 - **Listen to end user's metrics!!!!!!!!!!**
 - Missed what the consumer wanted
- Remote:
 - Does that make sense? Everyone shares the sense check responsibility
- Couldn't find the battery pack
- Impatient child broke the 3D printed expensive design
 - It's funny later
- Not ideal to test that late in the game
- Encourage people to disagree
 - Costs more to have remote perform more functions
- They have social media specialists

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- There are supply chain metrics
- Then there are outward metrics
- Need a form to take these things home
- Monthly or bi-monthly Ripdown
- Quality breakdown meeting
 - Look at what is normal
 - Go to marketing for decisions
- Power wheels: overdesigned?
- Baby, most talked about
- **Price and dissatisfaction relationship**
- Process all must drop out at same time frame
- Each path checklist 18 months
- 50 engineers, 600 new products a year
- Product development
- Check calculations CREO
- Work inspected signing off on design
- Receive and enjoy it
- **Sooner you get over your engineering ego the better**
- Exposure to teach
- Unleashed to work

NS went to talk to Dr.D about gait data from ME research

- The data was from a paper and the paper was a continuation of another paper which should be in the references
 - Hopefully this will show the angles or better define the data
- The data itself should be kept in the private folder
 - If you want to post some of it to EDGE then only plot curves as pictures, don't post the actual data.
 - Cite the paper

NS went to talk to the Fisher Price Representatives for private consulting

- Gave a system level overview of the AFO
- Discussion points:
 - Noise for the air could be a big problem
 - Heavy tank
 - Different muscle
 - Feedback
 - **Low battery alert on switch**
 - **Get a good understanding of the user**
 - Add credibility
 - DFMEA
 - What could go wrong
 - Play with the toys
 - Getting that kind of incidents

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- Test on someone who is drunk
 - Fisher Price's process is proprietary information
 - 6 sigma does not apply to them
 - Abuse testing – FEA
 - 3 Year old
- FOS
 - Anthropic data
 - **ASTM Procedure FOS built in**
- Use scenarios:
 - Brainstorm abuse / misuse
 - Test using that
 - Justify your design (ambiguity in the notes)

Action Items					
Item #	Description	Responsible	Due Date	Close Date	Comments
A001	Color correlation on the M-opt plot	Noah	DDR	IP	Make EGDE clearer
A002	Weigh the shoe for the foot-lift	Noah/Geni	DDR		Inconsistency in model
A003	Repeatability of the muscle tests	Tyler/Noah	DDR	11/25	At least three trials
A004	Modify/improve muscle attachment	Tyler	DDR	12/1	Dove tail/vertical support
A005	Pressure not flow in schematic	Megan	DDR	12/1	
A006	Pseudocode	Megan	DDR	12/1	
A007	Consider 3M rather than Velcro	Jared/Noah	DDR		For component housing
CM01	Comment in the customer requirements	Noah	DDR	11/25	FT2 “does not include spasticity”
CM02	Move hip angel data to private SVN	Jared	DDR	12/1	In ME Research
CM03	Develop a Working Model with sensitivity analysis	Noah/Tyler	MSD II wk2		In MechE labs
CM04	Formalize MSD II Test plans	Noah	DDR		As outlined in Agenda
CM05	Comment Engineering Requirements	Noah	DDR	11/25	“May not be able to reach
CM06	Begin IRB permissions	Geni	MSDII	11/25	Deadline flexible
CM07	Consider easy plantar flexion release	Tyler	MSDII		Manual support too?

Issues					
Item #	Description	Responsible	Open Date	Close Date	Comments
I001	The AFO could be slippery with socks	Geni	10/23	IP	Relates to A009