

Interview Questions

Wednesday, September 24th, 2014

Both review parties Greetings, health, and thanks for meeting with our team to answer our questions and clarify expectations.

Engineering Requirements:

May we go over the changes that we have made to our Engineering Requirements?

Where could we improve the requirements?

Are we missing anything that is important to you?

System Level Design Review:

May we go over our draft PowerPoint presentation?

Is there anything we are clearly missing?

Which areas stand out as deficient or weak?

How would you recommend handling the back-pack design situation? Since it is more of a sub system should we address it now? We are confident we need something but we don't know weight or dimensions yet?

Has our design been adequately reviewed?

Taken from "Preparing for your System-Level Design Review"-Ed Hanzlik

Administration:

On EDGE we noticed that there are some pages on SVN that we did not use such as:

Solution Parking Lot

Generate Product Concepts

Identify Customer Requirements

Team values and Norms

We covered most of these in our main nodes, should we populate the above nodes in retrospect or were they just for our benefit?

Mr. Hanzlik,

Grading:

Based on what you have seen thus far what grade where do we stand on the letter grade?

How can we get an A in this design phase? What do you really want to see?

How do you grade? How is it split between EDGE, PowerPoint, Presentation, and group-guide interaction?

What are some things that high performance teams have done in the past that impressed you?

Can you give us a brief summary of the next phase from your perspective?

As far as note taking during the design review, how are action items typically decided? Should we expect proportionally more questions in this phase?

Dr. DeBartolo,

Customer Need Clarifications:

Should we consider the different in clothing from winter to summer? Is that something that we should define?

With the current distance sensors, it would not be possible for the AFO to be under pants, is that acceptable?

Would it be important to allow boots to be worn? Is there a minimum clearance above ankle that the protruding components should avoid?

Would you advise us to narrow our target market to mainly indoor uses? Not designing for mud, snow, and hiking?

How common is spasticity among foot drop cases? Would you recommend we focus on clients without spasticity?

With the current gait system, system performance would be largely depending on location of operation. Is that acceptable?

What expectations or preferences do you have concerning a backpack or belt pack? What are you most comfortable with? What do you believe is practical for us?

For our stakeholders and use scenario do the doctors actually play a role? Is foot drop a prescriptive condition? Who would sell and monitor this device? (review use scenario?)

P15001: Active Ankle Foot Orthotic - Updated on September 23, 2014

rqmt. #	Importance	Source	Function	Engr. Requirement (metric)	Unit of Measure	Ideal Value	Marginal Value	Direction of improvement: Minimize (▼), Maximize(▲), or Target(x)	Comments/Status	Test (how are you going to verify satisfaction)
ER1	9	S1,CF1,CF2	Mechanical	Pressure to leg of AFO	mmHg	20	40	▼		pressure sensor
ER2	3	D1		Yield strength stress on hard plastics	MPa	56	28	▲		Tensile Test
ER3	2	S1,CF4		Average added heat from use	Degrees F	2	5	▼		thermometer
ER4	9	FT1,FT3,ST5		Torque to lift foot by Mckibben air muscle	N-m	5	3	▲		mecanics test
ER5	3	FT2,FT3		Dorsiflexion mobility with Mckibben air muscle	degrees	90	80	▲		protractor
ER6	3	P1		Number of muscle flexes untethered	#	5000	3000	▲		tank life test
ER7	9	S2,D2	Electrical	Battery in water repellant case	IP Code	54	54	X	5-solid object, 4-water	Ingress protection code (IP)
ER8	9	S1		Immediate Power Used	mW	2.5	5	▼		multimeter
ER9	3	ST3		Response time of Terrain Sensor	ms	500	500	X		timer in microcontroller
ER10	3	P1		Total Power over Day Use	W	2	2.5	▼		batteries used
ER11	9	S1,S2,D2		Sensors/controls water repellant	IP Code	54	54	X	5-solid object, 4-water	Ingress protection code (IP)
ER12	9	ST1,ST2,ST4		Error between Sensor data and physical distance	cm	2	4	▼		ruler
ER14	3	C3	Wearability	Average Time to put on AFO	min	3	5	▼		timer
ER15	9	FT4		Weight of AFO on leg	lbs	3	5	▼		
ER16	9	FT4		Weight of total AFO	lbs	10	15	X	includes compressed air	scale
ER17	3	CF3,C2		Adjustable,trimmable,stretchable	yes/no	yes	yes	X		survey
ER18	9	CF1,CF5		Difference in knee flex	degrees	0	0	X		protractor
ER19	1	CF1,CF6		Aesthetically pleasing	yes/no	yes	yes	▼		survey
ER20	9	CF1,CF7		Total running noise	dB	<40	<60	X		db sensor
ER21	9	C1		Added foot width	cm	0.5	0.75	▼		measure
ER22	1	FT5		Audible Low Battery Alert	dB	70	100	X		db sensor
ER23	1	C4		Easy to interface system	yes/no	yes	yes	X		survey