

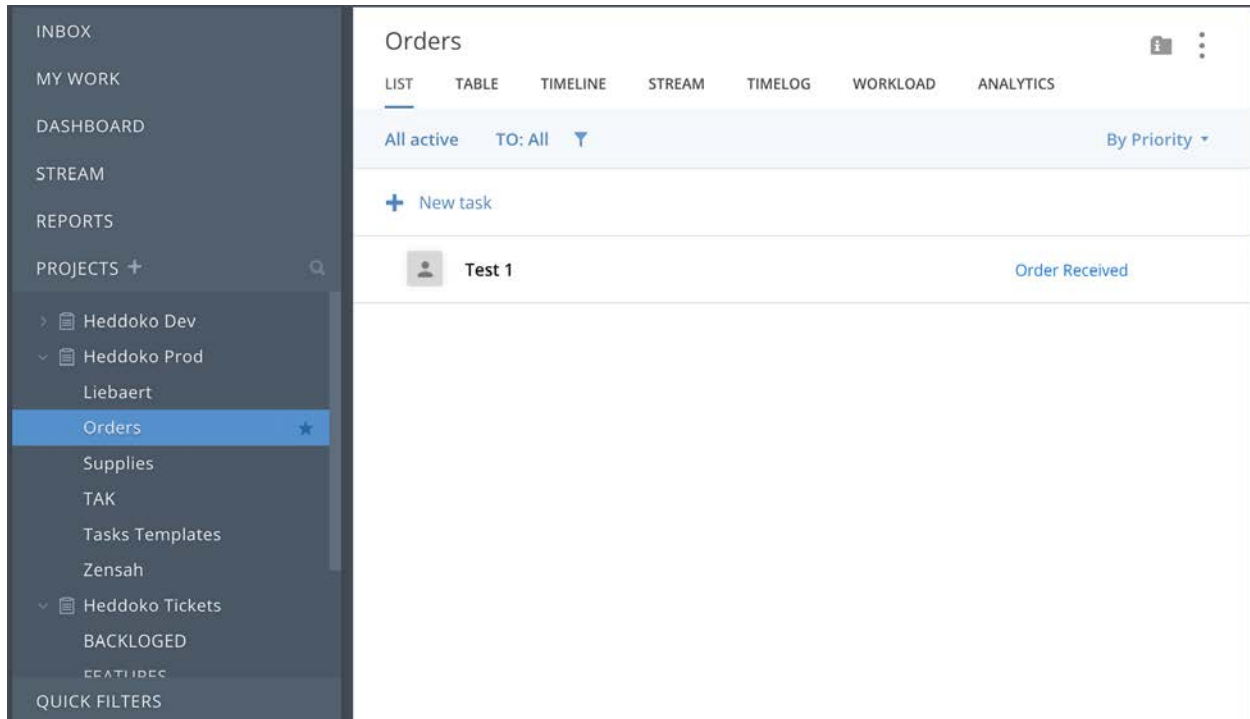
Heddoko Quality Control – Deployment Testing Steps

Lisa Zane

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New Orders

The sales team will input new orders into Wrike under Projects > Heddoko Prod > Orders:



(All related project information will be available on QNAP under /Heddoko/03_SALES/ Current Customers.)

In Wrike, check:

1. The priority of the shipment
2. The required components (i.e. # of full suits vs. base suits)
3. Suit sizes required

Deployment Testing Steps

1. Once the order requirements have been determined, go to the inventory wall and pull the required hardware and garment components from the “READY” bin.

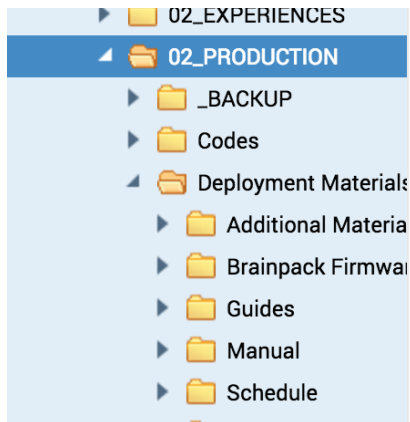


Green:	Ready to package
Pink:	To be repaired
Blue:	In production

GB01: Large Shirt
GB02: Large Pants
GB03: Small Shirt
GB04: Small Pants
GB05: In production
GB06: In Repair
GB07: In Verification

For contents refer to Inventory

- Update the inventory list in QNAP (/Heddoko/02_PRODUCTION) based on the specific components that were pulled.



	File Name	Modified Date
<input type="checkbox"/>	Inventory Examples	2016/05/13 12:02:12
<input type="checkbox"/>	Deployment Materials	2016/07/14 16:36:29
<input type="checkbox"/>	Codes	2016/05/05 11:45:15
<input type="checkbox"/>	_BACKUP	2016/05/11 11:59:05
<input checked="" type="checkbox"/>	Inventory 7-18-2016 .xlsx	2016/07/18 15:16:03
<input type="checkbox"/>	Inventory 7-15-2016 .xlsx	2016/07/14 16:30:52
<input type="checkbox"/>	Inventory 7-14-2016 .xlsx	2016/07/14 16:30:52
<input type="checkbox"/>	Inventory 7-13-2016 .xlsx	2016/07/13 17:59:11
<input type="checkbox"/>	Inventory 7-12-2016 .xlsx	2016/07/12 18:38:10

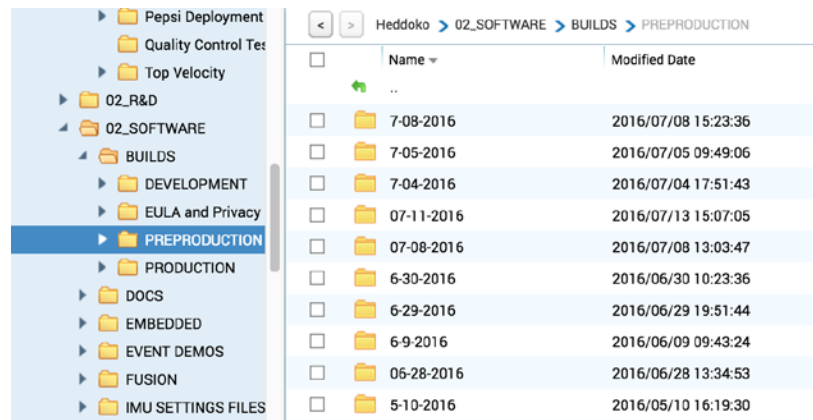
Inventory 7-18-2016

Serial Number	Location	Version	Status	Working	Power Board SN	Data Board SN	Notes	cap fixed	Power Board Programmed	Bootloader Programmed	Brain MCU program
500001	Boston						debug only				
500003	Boston						aka Modona				
500004							Old Version				
500006							old version				
500013	CTT		in use	no			????????????????				
500023			defective	no			replace power board				
500024			production	yes			needs full testing to clear for deployment	yes	0.1h	Y	0.4k
500025			ready	yes			returned from pepsi for firmware updating.	yes	0.1h	Y	0.4k
500025			defective	yes			done	yes	0.1h	Y	0.4k
500028			defective	yes			buttons ressed, hard to press (firmware ready)	yes	0.1h	Y	0.4k
500029			in use	no			buttons ressed, hard to press (firmware ready)	yes	0.1h	Y	0.4k
500031			in use	no			Fail:Weak signal on Quintic 1	yes	0.1h	Y	0.4k
500032			in use	no			Fail:Weak signal on Quintic 1	yes	0.1h	Y	0.4k
500033	Heddoko		defective	no			Power Button does not work	yes	0.1h	Y	0.4k
500034	Boise		defective	yes			reset button issues	yes	0.1h	Y	0.4k
500035	Heddoko		in use	yes			Exchanged with 500042	yes	0.1h	Y	0.4k
500036			ready	yes			done	yes	0.1h	Y	0.4k
500038			in use	yes				yes	0.1h	Y	0.4k
500038			defective	yes			buttons ressed, hard to press (firmware ready)	yes	0.1h	Y	0.4k
500040			defective	no			USB does not enumerate	yes	0.1h	Y	0.4k
500041	Heddoko		defective	no			Mo incident, needs replacement power board	yes	0.1h	Y	0.4k
500042	Charlotte		in use	yes			Exchanged with 500034	yes	0.1h	Y	0.4k
500043			ready	yes				yes	0.1h	Y	0.4k
500044			ready	yes				yes	0.1h	Y	0.4k
500046			defective	no				yes	0.1h	Y	0.4k
500047			ready	yes				yes	0.1h	Y	0.4k
500048			ready	yes				yes	0.1h	Y	0.4k
500050			ready	yes			updated	yes	0.1h	Y	0.4k
							reset button ressed (fixed)	yes	0.1h	Y	0.4k

Note: "Save As" the current date and make sure this is reflected on QNAP.

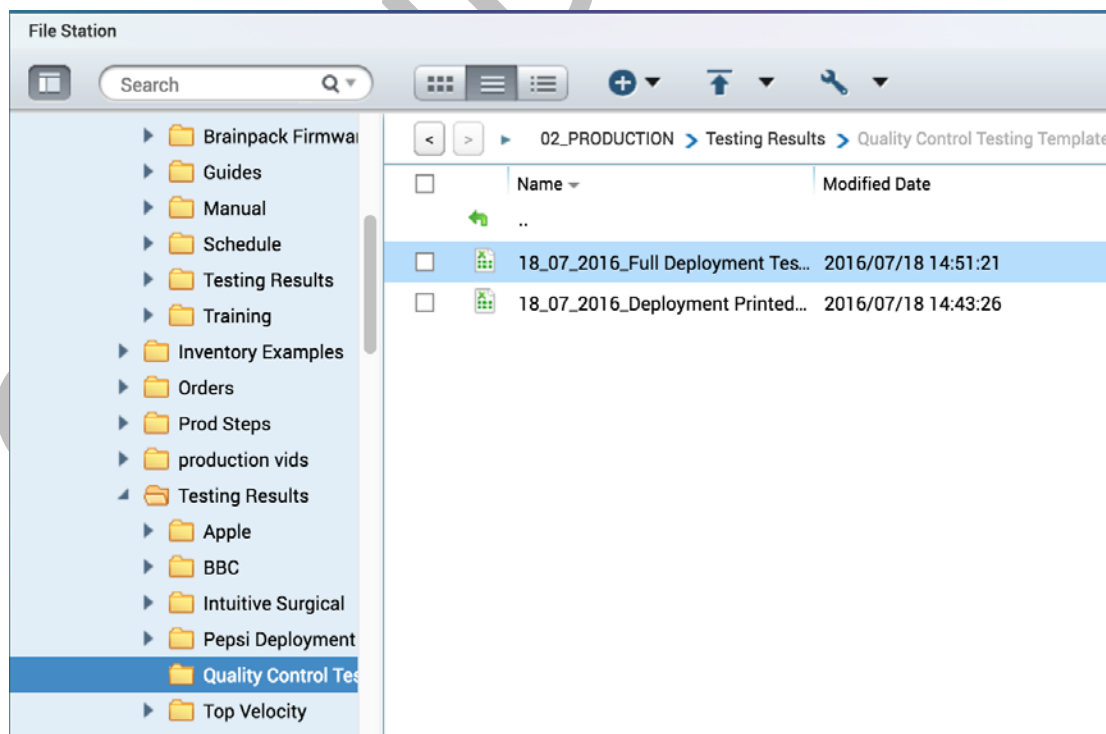
3. Install the correct pre-production software build on the MSI. Check with Mohammed Haider to determine which pre-production software build to install. The pre-production builds are located on QNAP here:

/Heddoko/02_SOFTWARE/BUILDS/PREPRODUCTION




4. Open the “18_07_2016_Full Deployment Testing – Template” located on QNAP here:

/Heddoko/02_PRODUCTION/Testing Results/Quality Control Testing Templates



	A	B	C
1	Quality Control - Deployment Testing - Dev Kit #		
2			
3	Battery Pack ID:		
4			
5	Test	Status	Notes
6	Buttons start at approximately 1 mm of recess		
7	All buttons return to appropriate recess depth after use		
8	Power button working		
9	Reset button working		
10	Record button working		
11	Charging indicator LED working		
12	State indicator LED working		
13	LED colors correspond to functions		
14	Settings file for associated Nods has been updated on SD card		
15	Pairing with associate Nods (goes into READY state)		
16	SD card is electronically labled with battery pack ID		
17			
18	Nod Set ID:		
19			
20	Test	Status	Notes
21	All firmware updated		
22	Sensor seating in base		
23	All LEDs work when connected to suit		
24			
25	USB Charger ID:		
26			
27	Test	Status	Notes
28	USB cable (check that it works)		
29	USB power adapter (check that it works)		
30			

◀ ▶
Data
Dev Kit #
Web Dashboard
+

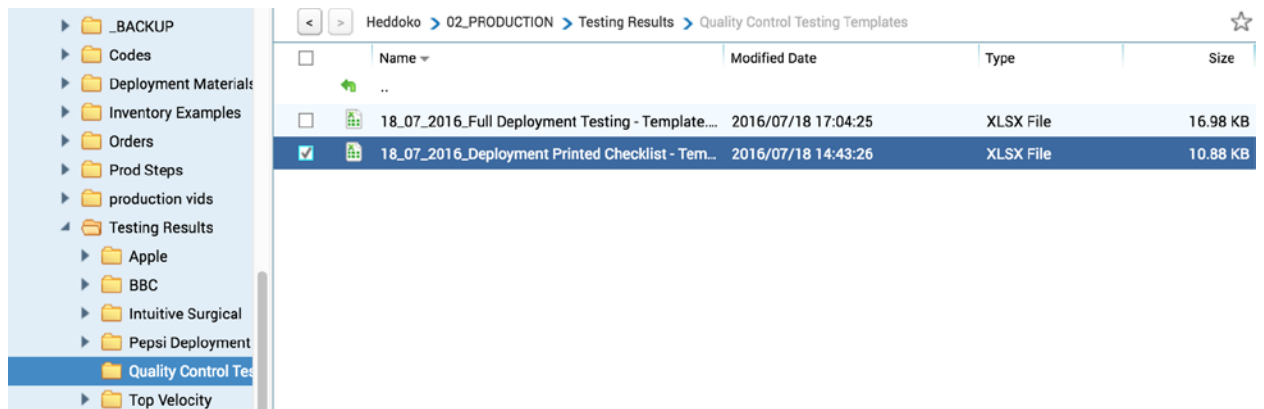
Ready 

Update the sheet with the Kit # you are currently testing (if unsure, iterate based on the last Kit deployed) in the header and the worksheet tab. Go through the entire testing protocol and input each unique component ID being tested.

If all items in checklist qualify as “PASS”, continue to step 5. If any items qualify as “FAIL”, refer to “Protocol for Failed Tests” below.

5. Pull the required number of packaging cases (and accompanying cardboard boxes and shoulder straps)
6. Open the “18_07_2016_Deployment Printed Checklist - Template” located on QNAP here:

/Heddoko/02_PRODUCTION/Testing Results/Quality Control Testing Templates



KIT #		ID	Status	Notes
Hardware	Type			
	Brainpack ID			
	Nod Set ID			
	Pants ID			
	Shirt ID			
	USB ID			
	Connected Test			
Physical Check	Type	Status		
	Baseplates			
	Wiring			
	Shirt Connector			
	Pants Connector			
	Heat Shrink			
	Seams			
Packaging	Type	Status		
	9 Sensors			
	Shirt			
	Pants			
	Laundry Bag X2			

Dev Kit # +

Ready

Update the sheet with the Kit # you are currently testing in the header and the worksheet tab. Print this sheet.

Go through the entire checklist and manually write the status of each component checked. If all items in checklist qualify as "PASS", continue to step 7. If any items qualify as "FAIL" refer to "Protocol for Failed Tests" below.

- Send Diana Horqqe an email identifying each unique component ID number for Kit(s) to be deployed. This information is required in order to print and laser cut Kit Information Cards.



Lisa Zane

Thu 6/30/2016 4:03 PM

To:  Diana Horque 



Insightly

Size:

Large

Battery Pack:

S00023

Capsule Set ID:

11

Suit Pants ID:

LP29

Suit Shirt ID:

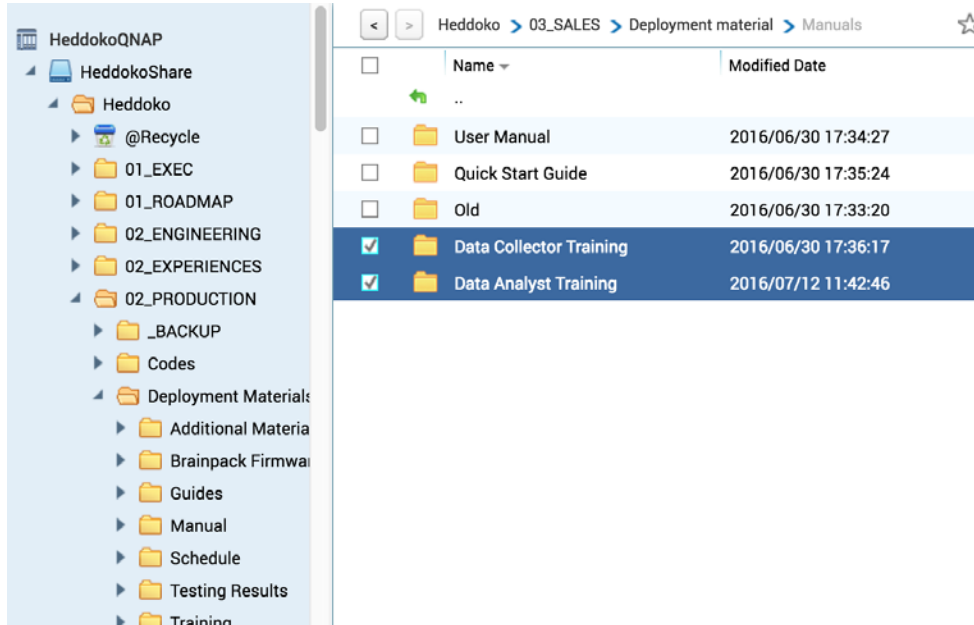
LS9

8. When all components and cards have been gathered, assemble Kit. When fully assembled, ask either Jonathan Olesik or Lisa Zane to sign off on testing results and checklist to approve Kit for deployment.
9. Once Kit(s) is/are shipped, update "Projects" sheet in inventory list with information regarding Kit(s) deployed.

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10. Identify the most up-to-date Data Analyst and Data Collector Training Materials to send to the customer on QNAP here:

/Heddoko/03_SALES/Deployment material/Manuals

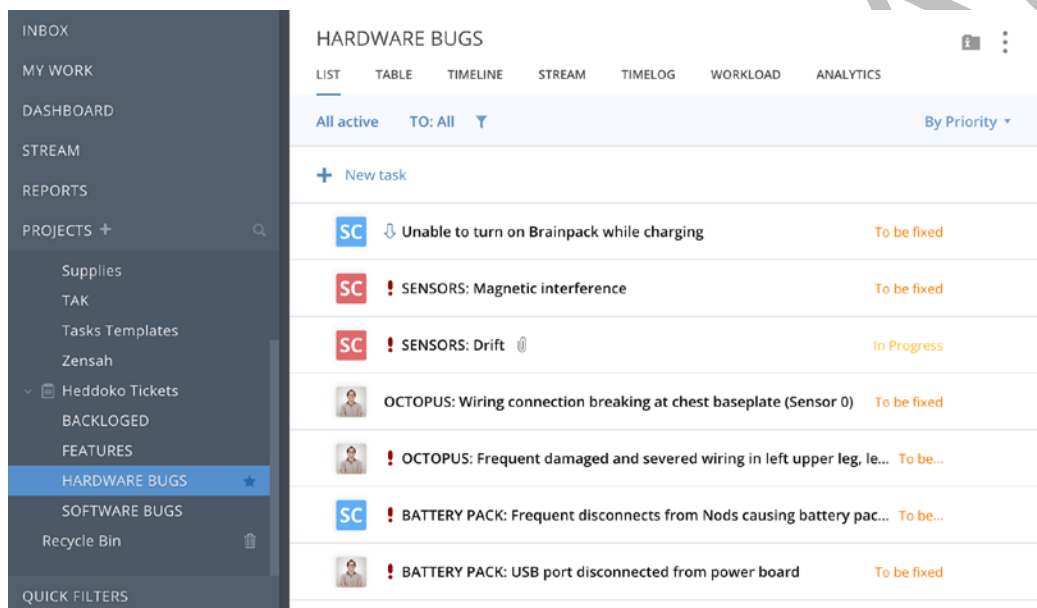


	Name	Modified Date
<input type="checkbox"/>	..	
<input type="checkbox"/>	User Manual	2016/06/30 17:34:27
<input type="checkbox"/>	Quick Start Guide	2016/06/30 17:35:24
<input type="checkbox"/>	Old	2016/06/30 17:33:20
<input checked="" type="checkbox"/>	Data Collector Training	2016/06/30 17:36:17
<input checked="" type="checkbox"/>	Data Analyst Training	2016/07/12 11:42:46

Protocol for Failed Tests

HARDWARE:

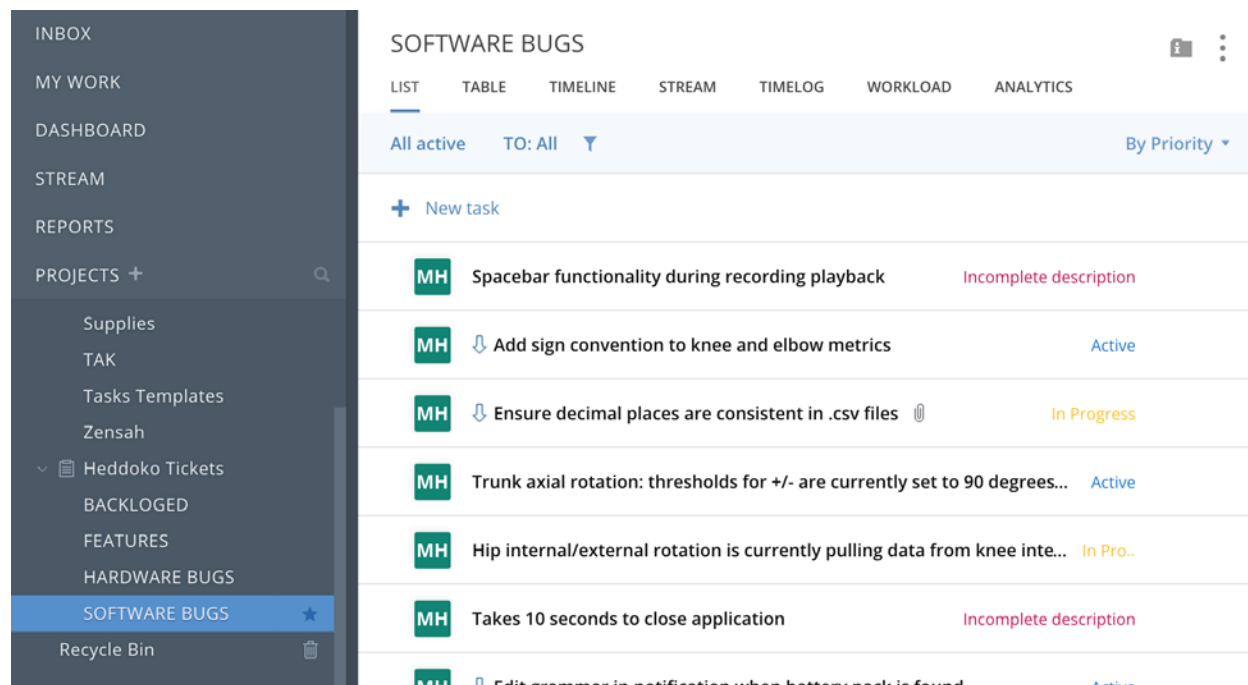
If any hardware components (battery pack, Nods, garment) fail any tests, the inventory list should be updated to reflect these issues. The component in question should then be placed in the appropriate bin (i.e. for verification or repair). Additionally, these issues should be filed as a ticket in Wrike under “Hardware Bugs”.



HARDWARE BUGS		
LIST	TABLE	TIMELINE
All active	TO: All	By Priority
+ New task		
SC	Unable to turn on Brainpack while charging	To be fixed
SC	SENSORS: Magnetic interference	To be fixed
SC	SENSORS: Drift	In Progress
OCTOPUS	Wiring connection breaking at chest baseplate (Sensor 0)	To be fixed
OCTOPUS	Frequent damaged and severed wiring in left upper leg, le...	To be...
SC	BATTERY PACK: Frequent disconnects from Nods causing battery pac...	To be...
BATTERY PACK	USB port disconnected from power board	To be fixed

SOFTWARE:

If any software elements fail any tests, these issues should be filed as a ticket in Wrike under “Software Bugs”.



SOFTWARE BUGS

LIST TABLE TIMELINE STREAM TIMELOG WORKLOAD ANALYTICS

All active TO: All By Priority

+ New task

MH	Spacebar functionality during recording playback	Incomplete description
MH	↓ Add sign convention to knee and elbow metrics	Active
MH	↓ Ensure decimal places are consistent in .csv files	In Progress
MH	Trunk axial rotation: thresholds for +/- are currently set to 90 degrees...	Active
MH	Hip internal/external rotation is currently pulling data from knee inte...	In Pro..
MH	Takes 10 seconds to close application	Incomplete description
MH	↓ Edit grammar in notification when batterv pack is found	Active

Note: If any hardware or software elements fail tests, the testing protocol should be repeated with components that are “Ready” and software that has been updated to reflect bug fixes prior to deployment.