

Team Progress Report

Team

EXPLORE MOON to MARS

APP DEVELOPMENT CHALLENGE: ASCENT ABORT 2

Name:

	Action	Anticipated Completion Date	Actual Completion Date	Comments
A	Select 3D rendering engine package and the programming language that will be used to interface with the telemetry multicast program.	4/16/19	4/18/19	Language was chosen as Java on the 16th but changed to Processing on the 18th due to restrictions on graphics in Java applets which do not exist in Processing
B	Create a Multicast listener (in the language selected in step (A)). This program receives data from the multicast sender application and prints out the value of each of the 21 parameters (just like the sample java "receiver" program provided).	5/3/19	5/3/19	The Multicast Listener was planned for after break, but pushed back due to issues with the visualization. A call will be made to a mentor for networking professional the night of 5/2 for help with the readouts —> finished after 5 long hours at starbucks 🍷🍷🍷🍷
C	Import the 3 vehicle modes into the 3D rendering engine selected in step (A).	4/17/19	4/18/19	Processing allows for direct reading of cad files, making this step extremely simple
D	Move each of the 3D models to a (specified) X/Y/Z position (in whatever coordinate frame the 3D engine uses).	4/18/19	4/18/19	Once again, Processing allows for easily modifying the position of objects on the graphics field
E	Rotate each of the 3D models to (specified) orientations (in whatever orientation coordinates the 3D display engine uses).	4/22/19	4/19/19	Processing allows for easily rotating objects on the graphics field, so this did not take much time- gave the weekend of leeway for Passover and Easter

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F	Modify program in step (B) so it can convert the position/quaternion information into whatever coordinate frames/angles/units are needed by the rendering engine selected in step (A).	4/26/19	4/25/19	The processing of quaternions was done after positioning of all of the models to ensure that reading position data was done correctly
G	Use 1 data sample from the telemetry player to drive the position of 1 of the models in the 3D display engine (i.e. have one model placed at the position/orientation of one sample point from sample data file).	4/24/19	4/23/19	Positioning of cad models in a Processing environment is as easy as just setting coordinates on the screen —> done quickly
H	Drive all 3 models using a single sample position. (like step (G), but for all 3 models).	4/24/19	4/23/19	Step G can be altered to include all three models incredibly easily, so G & H were done at the same time
I	Drive all 3 models using live data (like step (H), using the positions/orientation provided by step (F)).	5/3/19	5/3/19	Can only be done once the multicast listener is built- can be run with a CSV
J	Add text/gauge readouts into the app (using specified data values).	4/27/19	4/28/19	Readouts can be set to show data from the csv rather easily and modified later to support the listener
K	Tie live telemetry from step (F) into the gauges/text from step (J).	4/29/19	4/28/19	The live telemetry data will only be available once the listener is built, but telemetry data is output from the CSV at the moment
L	Run an entire mission from the multicast player with the app receiving and displaying the information in real time.	5/3/19	5/3/19	Date corrected for the extended deadline- video will be put together between 5/1/19 and 5/7/19