MAD SABINO CLIENT MEETING MINUTES

Date: September 16th, 2021 **Attendees:** Miguel Villanueva, Alex Peña, Dawson Hill, Bruce Bolden, Dr. Joel Perry

Questions/Answers

1. **(M)** End Goals
    a. The main goal/approach is for scientific research, but it doesn't mean that one day it can't possibly be used and bought by some company.

2. **(A)** Why build a virtual environment?
    a. There are other similar projects out there, but they don't have all the pieces this one is aiming to have, or its not built to the same extent. So this is really a first of its kind type of thing.
    b. Virtual is better because the real world presents a lot of issues
        i. Harder to interact and set up repeatability/consistensity/measurability
        ii. Harder to avoid collisions
    c. Optimization and speed is very important, it should perform well.

3. **(D)** How will user interact with virtual environment?
    a. User will interact with the environment with a big screen preferably, not VR.
    b. Screen → Software → PC → Giant Computer → Sabino Software → Sabino Hardware
    c. Sabino hardware?
        i. Lots of expensive stuff. Other components of the interaction involve: MATLAB, Simulink, speedgoat, etc.
            1. Data from motors/drivers/etc. This is already captured and available to use through an interface, but we need to learn how to use this interface and write a C# wrapper for it

4. **(D)** Will this project consist of just the virtual 3d environment, or do the movements need to be mapped as well?
    a. There is data coming from the Sabino, but we will need to learn how to interface, and write a C# wrapper for it.
    b. Developing a tool for Unity so that non-programmers can configure/add levels would be nice, but that will tell with time also. Main thing for now is just to have some sort of configuration available in the end product.

5. **(M)** What are the target values and requirements? (Measurable environment items)
    a. Get the environment and assessments working with up to 5 degrees/directions of control, but the first step is to get it working with 2 degrees/directions of control.
    b. There are some standard setups for assessments/tasks that we should aim for first to implement, and then depending on our progress, the level of assessments and tasks will vary.

6. **(M)** Can you provide a description of all the physical movements?
    a. Assessments vs therapeutic training games (types of interactions)
    b. Possibility: Adopt concepts of existing games, and then adapt them to training, but assessments come before this.
    c. Types of assessments
        i. Smoothness, initial force, control of force, range, etc

7. **(A)** What are the type of/the list of configurable settings that a given task/assessment may need? Is there a hard-set list, or does it depend on each task?
    a. Settings page with sliders, checkboxes, etc

8. **(A)** How soon can we begin actual development on the environment and mapping? And to the same point, how often can we have access to the blue sabino?
    a. We can have access to blue sabino somewhat sparingly, will need to schedule with Dr. Perry and the grad students involved.
    b. Can begin development as soon as we want to, just need to make sure we set our milestones first and do all of our planning, so we have a goal and places to hit.

9. **(M)** What should the budget be used for?
    a. Possibly software, assets for unity, pre-existing modules

Next Meeting

September 21st | 5:00 PM @ U of I Library