

FAMU/FSU College of Engineering

**Department of Electrical and Computer Engineering
Department of Mechanical Engineering**

Project Charter

Team #522 : Tactile Virtual Camera Controller for Film Production

Names:

Weston Dudley

Kayla Miller

Keishon Smith

Kyle Suarez

Daniella Turbessi

Project Scope

Project Description:

The objective of this project is to design a user friendly virtual camera controller that is able to seamlessly couple the user to a virtual free space.

Key goals:

The overall goals that will shape the design of this product will include a seamless connection to Unreal Engine along with low latency between the position of the tablet and the feedback on the screen of the tablet. In addition, the product will be user friendly allowing it to be used by a range of consumers including film students and seasoned cinematographers. Likewise, product will be easily maneuverable which will include the product being light-weight and wireless. The student team will also work for the product to operate an assortment of traditional camera function in a three-dimensional space.

Assumptions:

This product will be designed around the assumptions that will shape the scope of the project based on the markets described below. First, Unreal Engine will be used as the primary graphics engine for development of the virtual environment. Second, the target audience is knowledgeable on topics of cinematography and film. Third, the virtual camera controller will be produced on a tablet with remote connection to a machine running the virtual environment in unreal engine. Additionally, the tablet will connect to extraneous devices that will simulate the operations of a camera typically used in film. Finally, the connectivity between tablet and machine will be handled through an app compatible with the tablet.

Primary market:

- Film industry - eases the director's process when working in virtual spaces
 - CGI (Computer Generated Imagery) - typical virtual environment used widely in film.
- Education - to be used as a standard for future understanding of how to manipulate virtual space.
- Game Industry - can be used by game developers for creating in game scenes or levels

Secondary market:

- Government use
 - Can be used in the military for simulating scenarios
- Photography - Artist can create 3D artwork with dynamic movement
- Engineering & Construction - This software can be used to communicate engineering and construction designs to architects.
- Real Estate
 - Residential
 - Commercial

- Multi-family
- Presentation
 - Can be used to simulate buildings for construction
 - As a marketing tool to present real estate
 - Essentially as a selling point or visual aid

Due to the coupling of Unreal Engine our primary market for this project is the film industry, education, and the game industry. Within the film industry, this product will be used by directors and cinematographers for Computer Generated Imagery (CGI), or virtual filming. In addition, this device will be able to be used as a method of teaching in education. Professors will be able to use this device to teach manipulation of free space. Unreal Engine is already an integral part of some major gaming industries. This product would act as a tool to enhance the development of games. The secondary markets contain, the government, engineering and construction companies, and real estate agencies. For these markets, this device would be used as a presentation tool or scenario simulation.

Stakeholders:

- Dr. McConomy (ME Senior Design) | (850) 410-6624 | smcconomy@eng.famu.fsu.edu
- Dr. Hooker (ECE Senior Design) | (850) 410-6463 | hooker@eng.famu.fsu.edu
- Dr. Devine (Entrepreneur In Residence) | (850) 410-6378 | mdevine@eng.famu.fsu.edu
- Thomas Mikota (FSU Film School) | tmikota@fsu.edu
- FAMU-FSU College of Engineering Dean's Office

The funding for this project is sponsored by the FAMU-FSU College of Engineering Dean's Office as they will serve as one of our stakeholders. Along with the Dean's Office stakeholders will include those that have investment, ownership, or those affected by change in policy or actions made by the LLC. Concept generation was originated by Thomas Mikota. Additional stakeholders include Dr. Shayne McConomy, Dr. Michael Devine and Dr. Jerris Hooker who serve as the team's advisor, team's sponsor and educational professor, respectively.

Code of Conduct

Mission Statement

Team 522 is focused on creating a fully developed apparatus that will provide significant benefit to producing a film that utilizes CGI or virtual environments such as animation. This device will be tailored towards the benefit of directors and cinematographers. This team is committed to working effectively, efficiently, and professionally to achieve the goals defined by this project.

Roles

Each team member is delegated a specific role based on their experience and skill sets and is responsible for all here-within:

Weston Dudley(Project Manager) - Design Engineer

- Keeps team in unity
- Will act as mediator if problem arises between team members
- Will delegate tasks to other members in the team
- Keeps team's morale high and keeps team on track
- 3D Modeling of prototypes
- Materials expert
- Hardware installation
- Assists in the manufacturing of the device
- Stays up to date with timeline and calendar events

Kayla Miller(Financial Officer) - Mechanical Design Engineer

- Responsible for ME aspects of the project (holds the same responsibilities as the ECE lead on the ME side)
- Responsible for keeping accounts in balance and giving team a weekly report
- Records all transactions, debits and credits
- Keeps minutes during meetings with advisor and sponsor
- Leads team in development and testing of product
- Supervises the manufacturing process

Kyle Suarez(Software Developer/Quality Control) - Software Engineer

- Responsible for making sure that the product keeps up with the stakeholders' expectations
- In charge of developing virtual assets and code, such as 3D blueprinting and App connectivity
- Communicate with sponsor and target audience to ensure that prototypes/features are meeting wants and needs.
- Ensuring that all programs and systems are working at a level of efficiency necessary for the design requirements and goals of the system

Keishon Smith(Webmaster) - DevOps Engineer

- Creates the team's website and keeps it up to date with documentation, visuals, etc.
- Responsible for grammar of any written documentation
- In charge of data and technology management
- Oversees the business aspect of the project
- Works with developers to make code releases more efficient

Daniella Turbessi(ECE Lead) - Software Engineer

- Makes sure the ECE team members are staying on track with their portion of the design.
- Responsible for communicating to the ME team members.

- Keeps all documentation and records for the ECE aspects
- Work on developing code and on the connection between Unreal and tablet
- Provide support for other software engineer and DevOps Engineer in the development of product

All Team Members:

- Will participate in tasks and duties assigned to them
- Will deliver on the commitments made to the team
- Will stay positive with project and other team members
- Will be open-minded to others ideas
- Will respect each other and each other's positions

Communication

For effective communication within the team, the team will use text messaging as needed, and fellow members will respond within a 12-hour window. All members of the group will own and operate an iPhone or sufficient iOS device. When communicating as a team with advisors or professors, the platform Basecamp shall be used as an efficient streamlined method. This platform will also allow the team to receive tasks and information from the project advisor. Slack will be the method of communication for contact with the film school sponsor.

File management and transfers will be handled through a cloud drive system in which all relevant files and information pertaining to the project will be uploaded and accessible by all members. For more complicated files or items, a secondary location may be used such as when working with JSON files.

In person meetings with the sponsor, will be scheduled at least once every two weeks. Meetings with the advisor will be held at a minimum of three times throughout the semester. Meeting times will be decided on as a group before an invitation is sent out to the advisor, sponsor, etc. Each group member will disclose their availability times as quickly as possible to facilitate the process of scheduling official meetings. All scheduled meetings will be marked in the team calendar.

Dress Code

Team meetings will be held in casual attire. Sponsor meetings will be held in business casual attire. Group presentations and competitions will be business professional unless otherwise decided by the team. Clothes for sponsor meetings and presentations will be hole free, tear free, and not too revealing. If team member is found in violation of this code, they will be asked to change or leave, if there is not enough time.

Attendance Policy

Attendance will be taken at the beginning of every meeting by the team member taking the minutes of the meeting which includes all team member attendance and attendance of sponsors, advisors or other professionals. If a team member has not come within 20 minutes of the end of the meeting, that team member is considered absent. If a meeting has to be canceled or rescheduled, an email or appropriate text

message will be sent to the group at least 24 hours in advance. If a member of the group will not be able to attend the meeting, they will communicate this when the meeting is first scheduled. Work emergencies and personal emergencies, as accepted by the group, are the only excusable absences for missing scheduled meetings. Two consecutive unexcused absences for meetings will result in the team member being on probation.

Ethics

Team members are expected to be familiar with the NSPE Engineering Code of Ethics. Each member will uphold these ethics with other team members, the advisor, the sponsors, stakeholders and everyone else who is involved with the project.

Team Dynamics

The students will work cooperatively allowing open discussion and sharing of ideas. If a member of the team has been exceptionally quiet during group discussion, the team will ensure that person's point of view is heard. If any member of the team feels they are not being respected or taken seriously, that member will bring it to the attention of the team in order for the issue to be resolved. If a conflict arises within the team, both sides of the controversy will be heard out, and the issue will be resolved by team vote. If the issue deals with a personal offence or violation, the matter will be communicated to the advisor. All members will hold themselves to a professional standard in communications both with third parties and within the team. Everything that is done is for the benefit of the project, and the potential of the projects success in the real world.

Probation

If a team member does not comply with this code of conduct, they will be subject to probation. A team member can be placed on probation as outlined previously or if there are three or more violations of the code of conduct within a semester. On probation a team member is in danger of being reported to the advisor or Senior Design professors along with receiving poor reviews during check points on the project. They could also be subject to their tasks being reassigned if there are multiple violations of the code of conduct after initially being placed on probation. If a team member has been on probation 3 or more times during a single semester they will remain on probation for the remaining weeks of the semester. A team member may be taken off probation after 2 weeks of complying to the code of conduct or by team majority vote. Final say of the severity of probation is to the discretion of the team members.

Competition

Company

- The team will create an LLC in order to compete in InNOLEvation, Shark Tank, and any other competitions that may arise.

- Each member will have an equal vested equity of the LLC.

Prize Winnings

- In the event that the team wins a competition with prize money and/or non-cash winnings, both the proceeds and the cash valued items will go to the LLC.
- If a team member no longer wants to be a part of the company, their percentage will be bought out by the company in exchange for the same percentage of prize winnings.

Statement of Understanding

By signing this document, the members of Team 522 agree to all of the above and will abide by the code of conduct set forth by the group.

<u>Name</u>	<u>Signature</u>	<u>Date</u>
<u>Kyle Suarez</u>	<u>Kyle Suarez</u>	<u>9/20/19</u>
<u>Daniella Turbessi</u>	<u>Daniella Turbessi</u>	<u>9/20/2019</u>
<u>Keisha Smith</u>	<u>Keisha Smith</u>	<u>09/26/19</u>
<u>Kayla Miller</u>	<u>Kayla Miller</u>	<u>9/20/19</u>
<u>Weston Dudley</u>	<u>Weston Dudley</u>	<u>9/20/19</u>