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DEVELOPMENT OF A CIVILIAN SPACECRAFT INTERIOR SIMULATOR USING MINECRAFT

Abstract

With SpaceX's Crew Dragon spacecraft scheduled to begin human spaceflight in 2020, and Virgin Galactic's Unity spacecraft scheduled to begin its flight this year, the use of commercial spacecraft is about to increase. The use of spacecraft is not limited to space travel and space experiments, but its purposes includes filming for movies and commercials, weddings, concerts, sports, and various promotions. In such cases, it is important to simulate the interior of the spacecraft (set) in advance in a simple and inexpensive way. It is desirable to create a computer-based 3D model, but tools such as 3D CAD are expensive and difficult to use. Therefore, ASTRAX created a 3D model using Minecraft, a game for children. The advantage of using Minecraft is that it is very inexpensive, can be easily handled by anyone (even children), has users all over the world, and allows for easy construction and modification of models. Therefore, it is very effective in the creating the initial imaging to meet the needs of general customers, as it is easy to build the shipboard model data to match the various missions to be carried out in the spacecraft. After the image matching with the customer is completed in Minecraft, the next step is to model the ship in 3D CAD. Then further detailed study can be started, thus eliminating waste. In this paper, we introduce our prototype interior model of Virgin Galactic's spaceship, Unity. If the effectiveness of this method is proven, we plan to further produce and verify man-craft models of various commercial spacecraft, such as SpaceX's Crew Dragon and Blue Origin's New Shepard.