Paper ID: 14534
student

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Space Culture: Innovative Approaches for Public Engagement in Space (8)

Author: Ms. Crystal Fordyce
University of Alabama in Huntsville, United States, clf0005@uah.edu

Mr. Dan ONeil
University of Alabama in Huntsville, United States, dao0030@uah.edu
Mr. Sean Muratet
University of Alabama in Huntsville, United States, spm0017@uah.edu
Ms. Swetha Govindaiah
UAHuntsville, United States, sg0017@uah.edu

PLAYBACK OF A DISTRIBUTED LUNAR EXPLORATION SIMULATION IN SECOND LIFE

Abstract

Online virtual worlds and international distributed simulation challenges for graduate students enable space education, outreach and evolution of lunar exploration architectures. The Simulation Interoperability Standards Organization (SISO) hosts an annual High Level Architecture (HLA) based "Smackdown" event where university teams, from around the world, create simulations of lunar exploration systems. Taking place at the Spring Simulation Interoperability Workshop (SIW), the teams integrate their simulations into an Internet accessible federation. Students learn about the HLA standard, distributed simulation, project management, and simulation integration in a "co-opetition"; while teams cooperate via HLA interactions they compete in areas of design, displays and documentation. For the 2012 Smackdown event, the team from the University of Alabama in Huntsville (UAHuntsville) pioneered the concept of a simulation playback in the virtual online world Second Life. One of the sponsors of the SISO Smackdown event, Pitch Technologies, offers a recorder that captures specified data from a federation in a variety of formats including Microsoft Excel workbooks. Using the recorded data, teams can write code in the Linden Scripting Language (LSL) to play-back the data and drive 3D models within a Second Life destination. Benefits of this virtual simulation playback include: simultaneous demonstrations, documentation, recruitment, and education. A workshop at the first AlaSim International conference will serve as the debut of the virtual reprise of the SISO Smackdown. Each year, another area of the Second Life destination can host the recorded reprise; essentially, it becomes an interactive museum where space advocates can watch the evolution of a lunar exploration architecture. Interested universities can view the virtual reprise as a catalog of existing simulations and determine new exploration systems to simulate for next year's event. Teachers can take their classes on a virtual field trip to the Moon, inspiring young people to pursue education in science and technology. Anyone can get a free account in Second Life and visit the Smackdown reprise, thus it serves as a venue for public space education and outreach. This approach of recording data from complex, detailed, distributed simulations and playing the data back in a virtual world can apply to space operations, logistics and exploration of Mars and other destinations.