**NASA SEE 2017**

**MIDWESTERN STATE UNIVERSITY NARRATIVE**

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**Midwestern State Scenario**

Midwestern State’s federate is composed of a communications satellite constellation surrounding the moon with 90% coverage. Our constellation consists of 21 satellites. Entities will be able to send messages via the satellites directly. We will be able to send messages between entities and from different parts of the moon.

We used blender to make our object models. For our code, we used java, and utilized parts of the HLA starter Kit. To send the radio messages between entities, we use the radio FOM. With the radio messages, we can broadcast messages to everyone or send messages privately between two entities. Since we implemented the radio fom, only federates with the radio fom can use our communications network. We implemented the ASTAR algorithm to figure out routing paths to send the messages between entities in real time. Our federate is publishing our satellite’s positions as they go around their orbits, reference frame, and RX messages. Our federate is subscribing to all physical entities’ locations, reference frame, and TX messages.

We are presenting a paper about developing undergraduate interest in HLA at the CCSC conference this Friday, April 7, and are talking about working on this federate as a team of undergraduates and having to learn HLA.