Grossmont College Honors Contract Addendum

Project: Become certified in the use of STK (Systems Tool Kit) and use it to visualize a scenario demonstrating the application of course concepts to a real-world situation.

STK is a software package developed by [Analytical Graphics, Inc.](#) (AGI) and used by engineers, mission analysts, and scientists from more than 700 global organizations to model complex systems (such as aircraft, satellites, ground vehicles and their sensors) and to visualize their performance in real or simulated time. Built on a dynamic, physics-based geometry engine, AGI software answers fundamental questions essential to solving analysis problems, including:
o   Where are my assets (spacecraft, aircraft, vehicles, ground sites) and how are they moving with respect to each other?
o   What can my assets see (or communicate with) and what can see them - and when?
Results can be shown in numerical, graphical, image, and animated video form.

Thanks to the generous provision of software licenses to Grossmont College by AGI's Educational Alliance program, under the supervision of Dr. Philip Blanco (Department Physics and Astronomy), we can offer the following project:

1. The student will learn how to use STK to model and visualize general physical scenarios involving locations on the Earth and their visibility ("access") from aircraft and satellites. The student will demonstrate proficiency in STK by passing the online test provided by AGI to become "STK Certified", and providing Dr. Blanco with evidence of certification (i.e. the original certificate mailed to them and a copy for our records). The certification test should be completed and passed by the end of Week 7 of the semester.
2. The student will work with Dr. Blanco to design and visualize an STK "scenario" of their choosing, which demonstrates an application of physical, geospatial, or astronomical concepts appropriate for the class they are enrolled in. Once the specific scenario details are approved, successful completion of the project will be demonstrated by either a "live" demonstration to the class using STK, or by creating a presentation which incorporates data, images, and animations produced from the STK scenario. These data products will be provided to the Grossmont College Physics and Astronomy department for future (non-commercial) instructional use in other classes.

This honors project will count for 20% of the student's grade in their particular class, which is also the anticipated additional workload averaged over the semester. Dr. Blanco will grade the project and provide the grade to the course instructor.
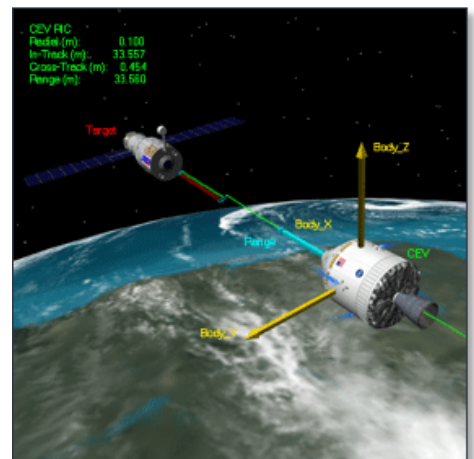
Example STK Scenario screen shots