



a.i. solutions

UNISEC - Global

Company Profile

Overview

- Mature Small Business
- Privately-held, founded in 1996

Core Capabilities

- Space Mission Engineering
- Mission Systems Assurance
- **FreeFlyer®** & Space Applications
- Launch Services
- Emergency Management
- Commercial Space

Certifications & Awards

- ISO 9001:2015 / AS9100 Rev D
- CMMI-Dev ML3
- 2018 NASA Agency & KSC Large Business Prime Contractor of the Year
- 2014 NASA Agency & KSC Small Business Prime Contractor of the Year
- 2010 NASA Agency & GSFC Small Business Prime Contractor of the Year



Selected Current Government Contracts



U.S. AIR FORCE



Prime Contracts

- NASA KSC, Expendable Launch Vehicle Integrated Support 3 (ELVIS 3)
- NASA HQ Continuity of Operations, Emergency Preparedness, and Response Operations
- MDA Technical, Engineering, Advisory, and Management Support (TEAMS), Quality and Mission Assurance (QMA)
- USSF SMC/ECX, Simulated Space Data for Testing, Training & Exercises (SBIR Phase II)

Subcontracts

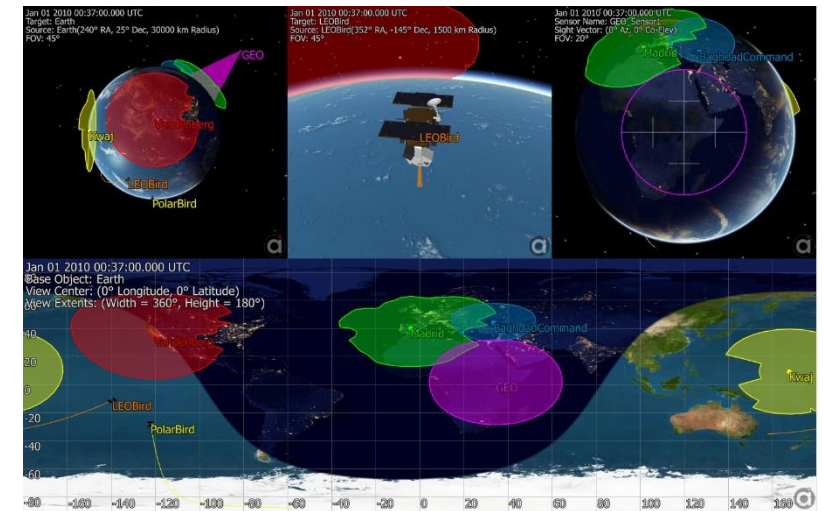
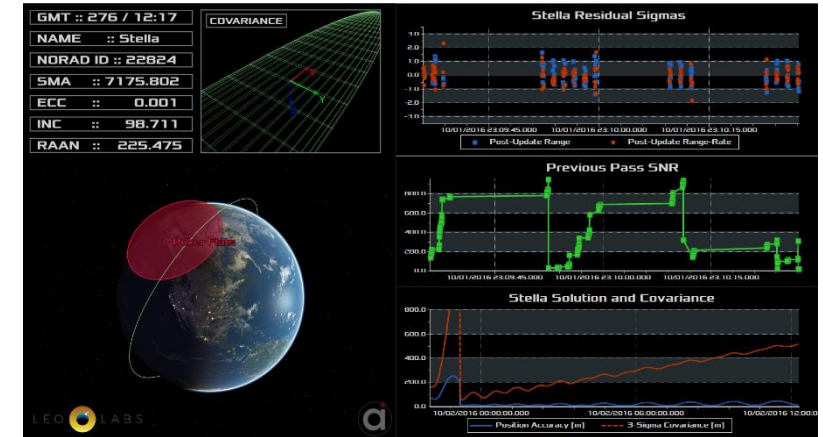
- Integration Support Contract (ISC) for Future ICBM Sustainment and Acquisition Construct (FISAC)
- US Army, Reagan Test Site (RTS) Engineering & Technical Services (RETS)
- USAF, NORAD Cheyenne Mountain Complex (NCCMC) Integrated Threat Warning/Attack Assessment (ITW/AA) and Space Support Contract (NISSC)
- USAF, Space & Missile Systems Center (SMC), Space Test and Engineering Contract (STEC 14)
- NASA GSFC, Flight Dynamics Support Services 3 (FDSS 3)
- NASA GSFC, Space Network Ground Segment Sustainment (SGSS)
- NASA GSFC, Space Exploration Network Services & Evolutions (SENSE)
- USGS/NASA GSFC, Landsat Mission Operations (LMO)

FreeFlyer[®] Software



FreeFlyer provides end-to-end support for the full satellite mission lifecycle.

- Design mission parameters, refine requirements and study constraints
- Perform analyses and trade studies to model optimal flight plans and contingency scenarios
- Integrate FreeFlyer into operational ground systems and automate flight dynamics system functionality



FreeFlyer Heritage

- 24 years as a COTS product
- Flight tested - proven reliability and accuracy
 - FreeFlyer COTS software is TRL 9
 - Support for 225+ satellite missions
 - Integrated into 30+ ground systems
- Customers include NASA, US Air Force/DoD, international governments, commercial, academia



FreeFlyer-Supported Missions

GEO

- NOAA GOES N,O,P,R,S
- AFRL EAGLE

MEO

- USAF GPS Constellation

HEO/BEO

- NASA MMS
- NASA James Webb Space Telescope
- NASA Gateway

LEO

- International Space Station
- SNC Dream Chaser
- NASA Orion
- Boeing CST-100
- USGS Landsat 7,8,9
- USAF SBSS
- USAF ORS5
- DARPA R3D2

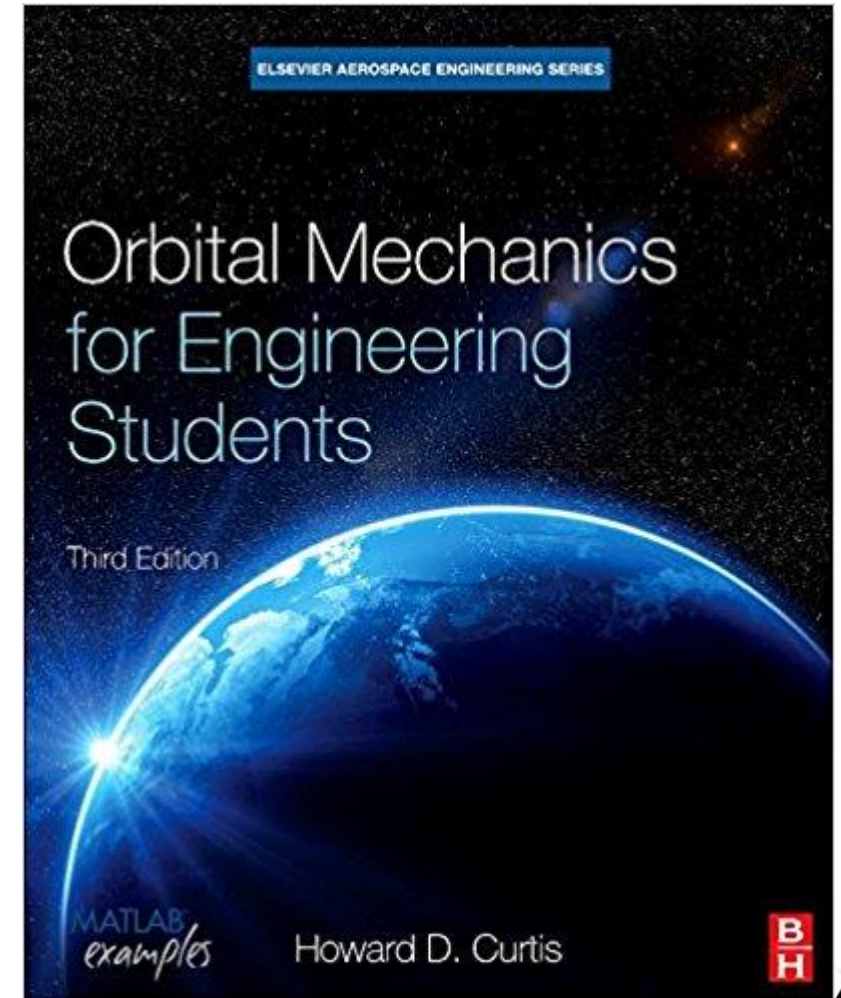
Other

- NASA CARA



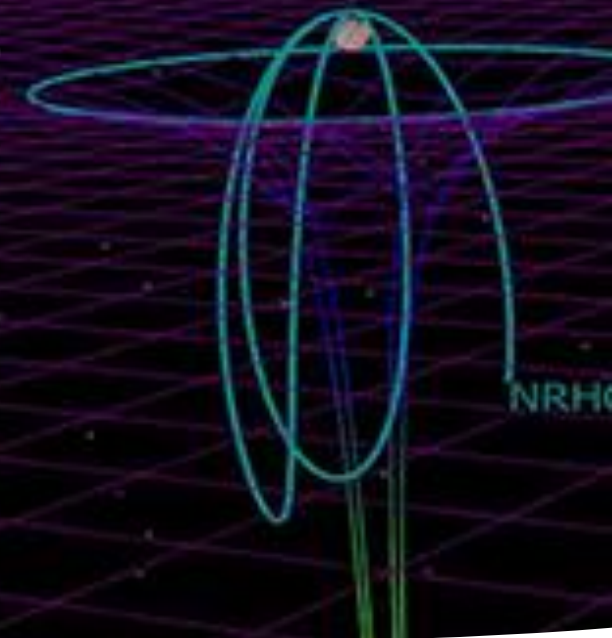
FreeFlyer University Program

- University Guide provided
 - Helps you reinforce concepts using the software, not teach the software using the concepts
 - Loosely follows *Orbital Mechanics for Engineering Students* by Curtis
 - [Online](#) and available for student download
 - Solution Mission Plans available for professors and TAs
- YouTube [tutorials](#)
 - 3 videos totaling 90 minutes of basic instruction for new users.
- Always open to ideas and feedback



The logo features a stylized satellite in the upper left, a large grey sphere, and the text '2020 FreeFlyer USERS CONFERENCE' in white and red. The background is a purple grid pattern.

2020 FreeFlyer[®] USERS CONFERENCE



Agenda

[\(Click to Register\)](#)

- Monday: FreeFlyer Updates
- Tuesday: Optimization in FreeFlyer 7.6
- Wednesday: Relative Motion in FreeFlyer 7.6
- Thursday: FreeFlyer on the Moon!
- Friday: FreeFlyer for Constellation Analysis



a.i. solutions

THANK YOU!