Center for Analysis Systems and Applications

Developing next-generation analysis capabilities

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CASA

WEASEL & Skypunch Cloud

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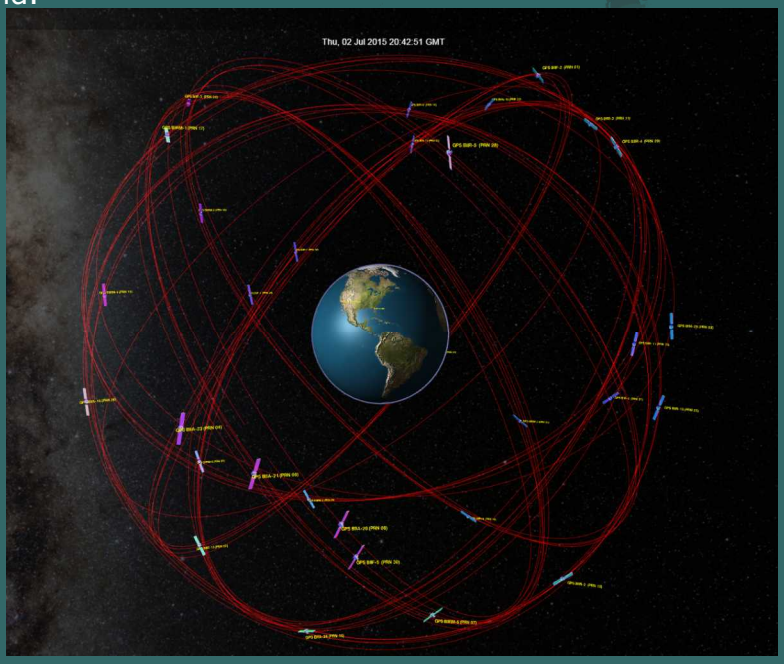
Web-Enhanced Application Simulating Extraplanetary Locomotion (WEASEL):

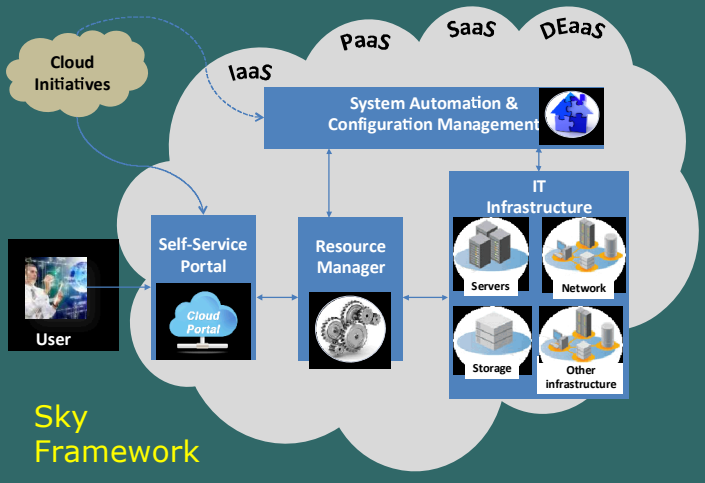
- **WEASEL** is a scenario visualization tool. It uses Sandia's STARGATE libraries for astrodynamics computation in a Java server backend, combined with WebGL for graphics rendering via JavaScript on the frontend.

  This browser-accessible visualization shows the flight paths of objects in space over any defined period of time. In this example, it quickly provides information needed to locate and understand the orbit objects from a TLE (two line element) data set.

- An API is being developed so that more Sandia systems are able to utilize the STARGATE library's abilities the same way WEASEL currently does. This increases the utility of STARGATE and would allow other Sandia applications to obtain the flight path data of objects in space. Our present API can correctly respond to simple data requests for positions of celestial bodies as well as calculate the propagated flight information of objects in space.



WEASEL visualization of satellite orbits around the Earth on July 2nd



Sky Framework

Skypunch Cloud:

- **Skypunch** is an R&D pathfinder to develop cloud computing capabilities for the Mission. Skypunch delivers a highly available, scalable, and modular private cloud framework for infrastructure, platform, and software as a service.
- Virtual Machines, with all required dependencies, were made using the Skypunch Horizon development enviorment.
- These VM's allow for testing and rapid prototyping for other projects.

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