PROBLEM TITLE
Getting Space Organized and Under Control

CHALLENGE
Space Control Operators need a coordinated way to identify and track the location, shape, and orbit of objects in space in order to create actionable intelligence for senior leadership.

BACKGROUND
The pace of activity in orbit around the Earth has increased exponentially due to the growth of orbital debris, commercial actions, scientific research, and national defense interests. The Strategic Warning and Surveillance Systems team from the Air Force Life Cycle Management Center (AFLCMC) is tasked with maintaining and updating the systems used to catalogue the size, location and orbit of objects, as well as track the movements of all objects in space. The AFLCMC systems must also integrate data from the systems of multiple other nations (i.e. Russia, China, European Space Agency, etc) in order to ensure a comprehensive data set.

These systems are now well beyond their expected lifespans and are unable to keep up with the sheer volume of objects in space. However, the main issue for the Space Control Operators is not the legacy systems, but rather, the difficulty of collecting data in a singular location in order to effectively compare and analyze the data. Therefore, the Space Control Operators need a way to coordinate systems that identify and track the location, shape, and orbit of objects in space in order to analyze the data and create actionable intelligence for senior leadership.

OPERATIONAL CONSTRAINTS
- Solution should aim to be able to encompass objects in orbit over the next 30 years, including the number of uncontrolled debris objects, propose architectures for managing the information and communications necessary for safe operations
- Solution should propose security architectures that allow for trusted sharing of data within US military and Intelligence as well as US allies (a analogous data set will be found for the international allies data)
- Surveillance from the solution should be sufficient to validate information about activities in space and to identify any significant deviations