



**Project  
Eclipse**

# Turbine Engine Drivetrain Alignment System

## Scaled Model

In order to demonstrate the feasibility of the strut alignment system, a physical scale model was designed to mimic the motions of a full-size turbine engine. Seen in Figure 1 below, the scale model represents the moveable turbine depicted by the metal shaft and a fixed gearbox depicted by the shorter shaft.

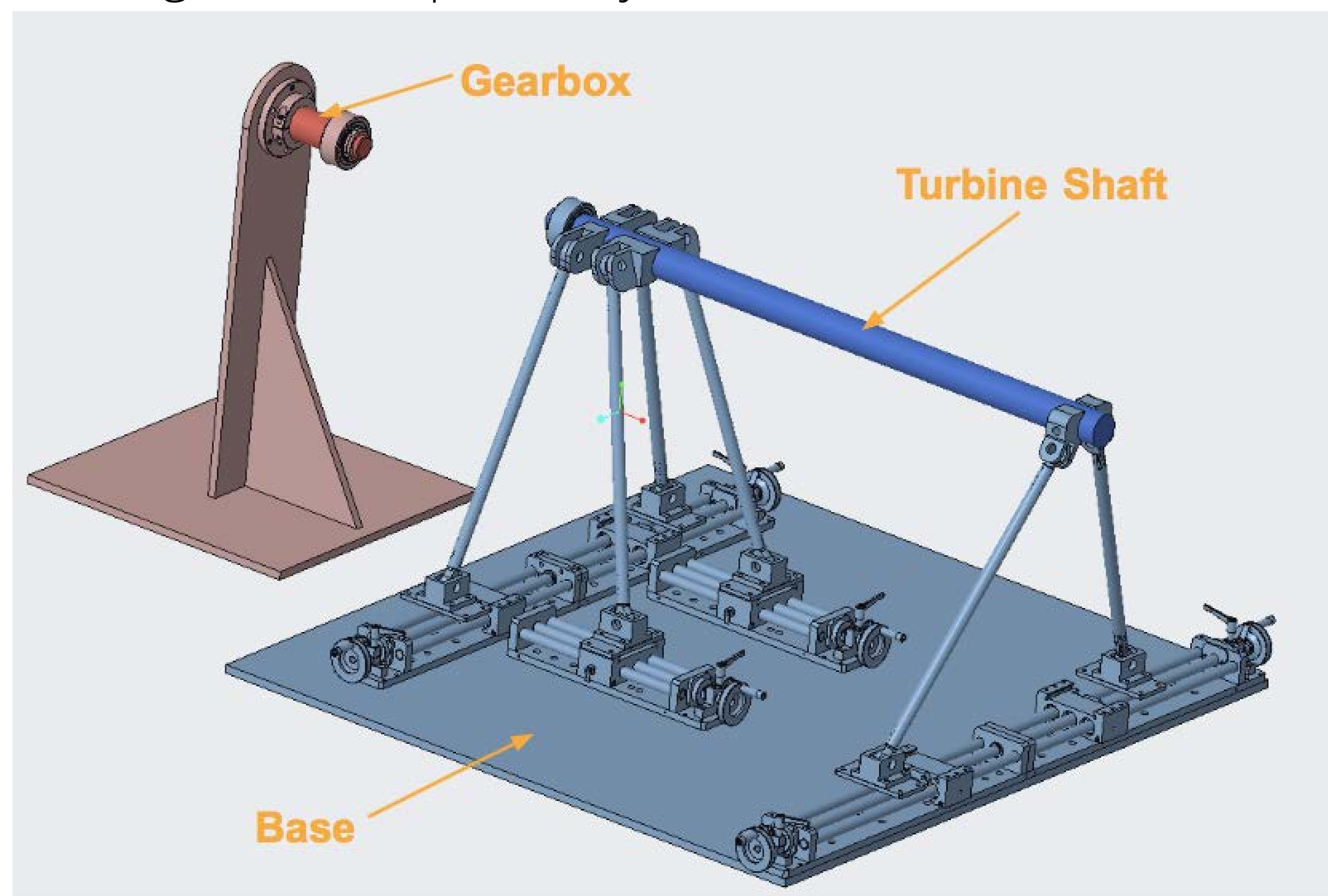


Figure 1 - Scale Model

## System Level Diagram

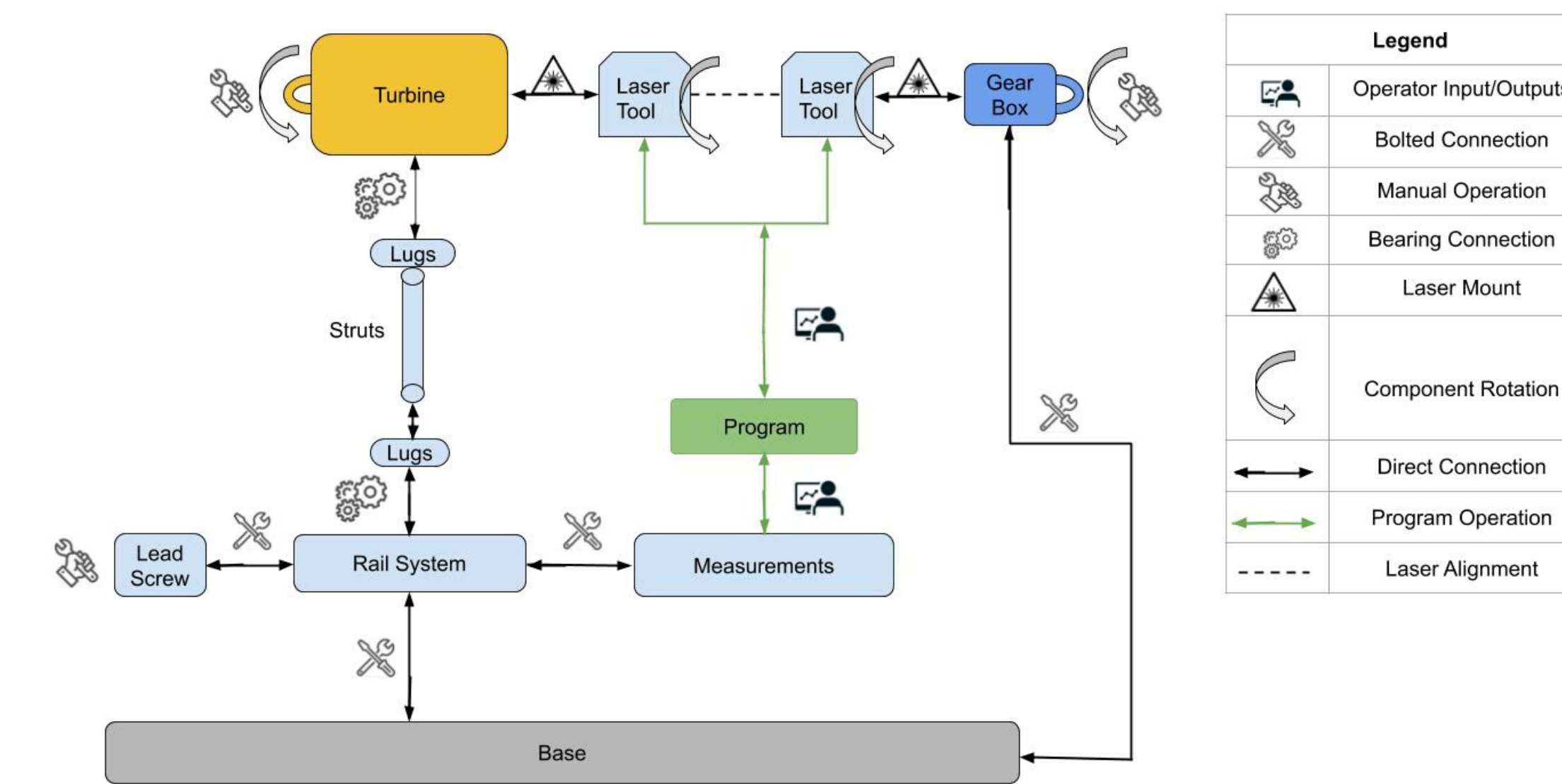


Figure 4 - System Level Diagram displaying the entities that interact with system

## Alignment Program

An important part of this project was the creation of an alignment program in Excel VBA. This program uses initial strut position inputs from the user, then outputs the exact locations on the linear actuators that would achieve drivetrain alignment. A software user manual has been written to explain the background code and aid future users of the program.

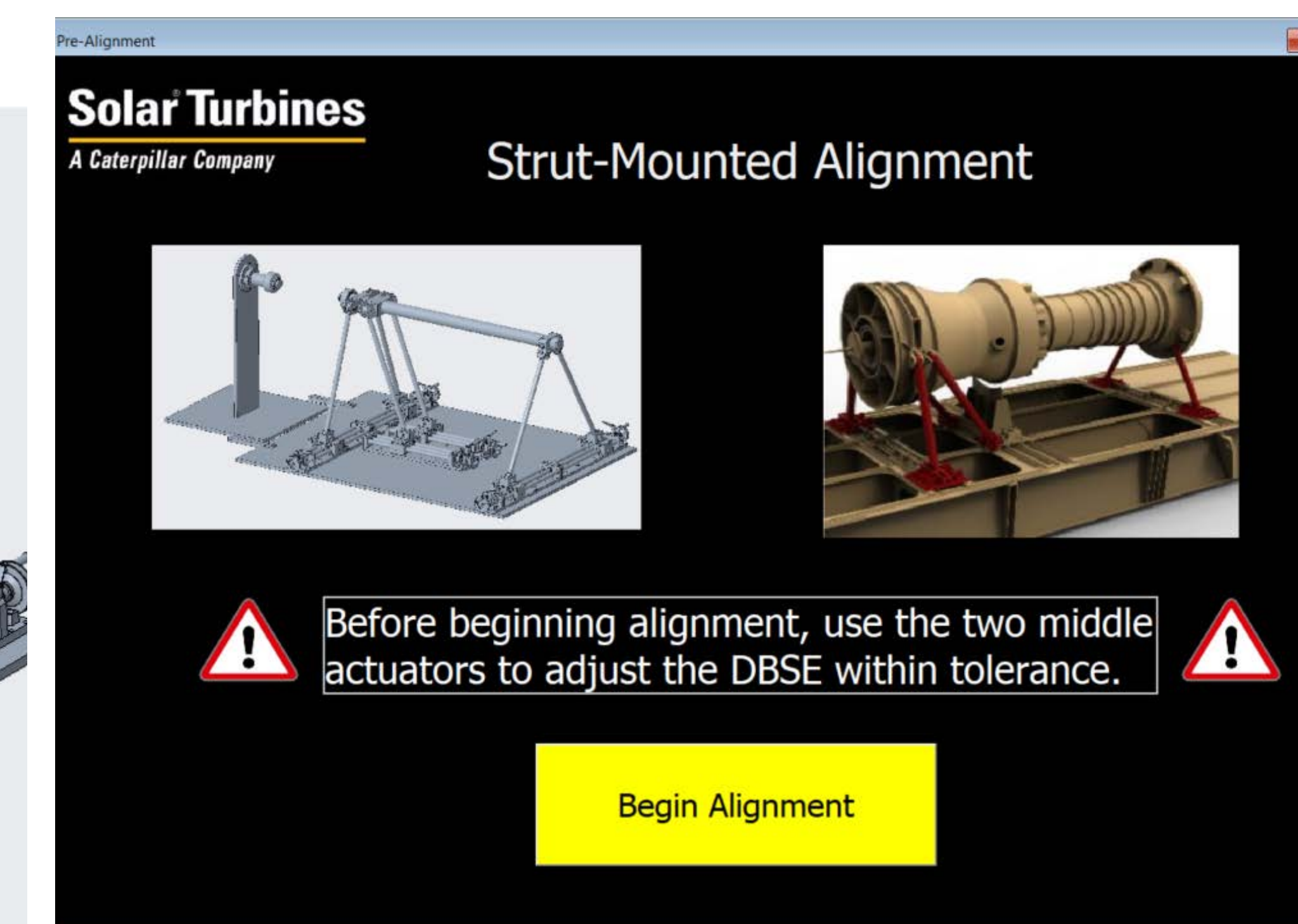


Figure 5 - Software Interface

## Mission

Determine the feasibility of a strut-mounted turbine engine drivetrain alignment by creating a simplified scaled model and a software interface to demonstrate the alignment process. All findings and conclusions will help promote any development of future engine packages.

## Meet the Team



**Holly Hagen** - Team Lead/Software  
**Lucas Massey** - Software/Research  
**Ken Ramirez** - Design/Manufacturing  
**Alexandra Gonzalez** - Design/Manufacturing

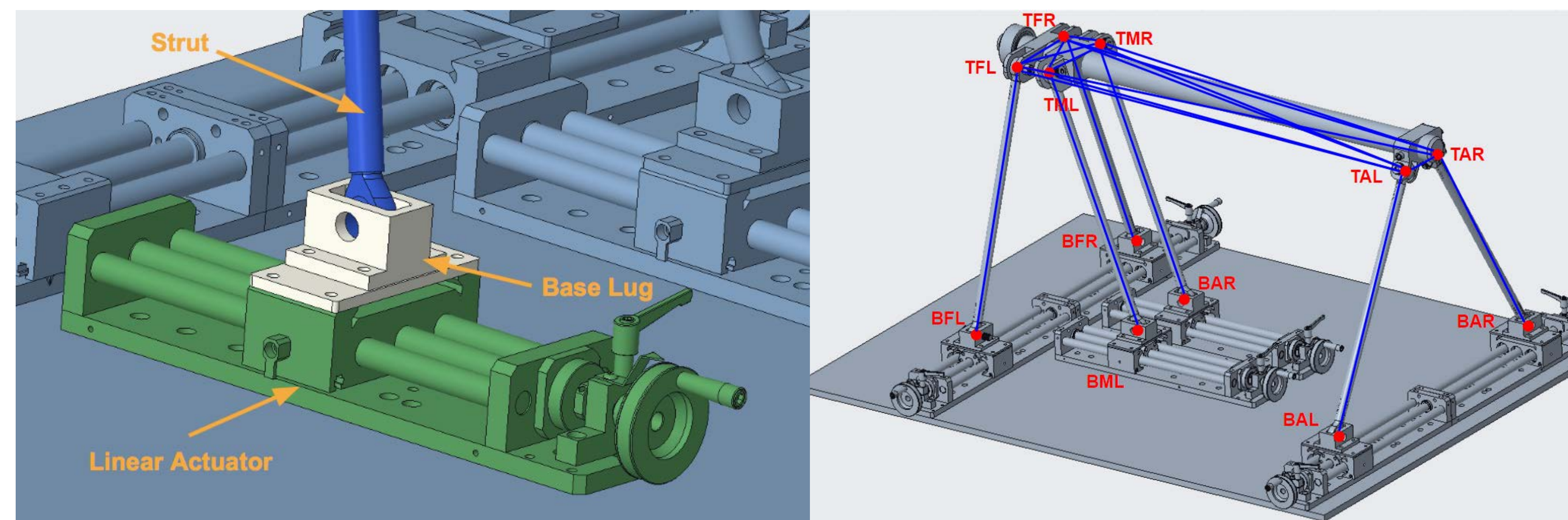


Figure 2 - Base Assembly

Figure 3 - Modeling the System