Overview
Current equipment for tensile testing of coaxial cables at Philips Ultrasound is very large and inefficient. The team was tasked to improve the current model with a complete redesign and build. The engineers at Philips would ideally put this new test station to immediate use.

Objectives
- Reduce overall size of test station to be 1220x610x250 mm
- Reduce overall weight to under 12kg
- Maintain current factor of safety of 1.5 with loads of up to 100lbs being applied

Approach
- The team began by benchmarking the customer needs thoroughly with help from Philips employees
- Team then began to brainstorm multiple ideas for a pulley-system to meet objectives and customer needs
- Using a concept selection matrix, the team narrowed down to one concept and began assembling a SolidWorks model
- Next, full FEA testing was conducted on the design to ensure meeting the factor of safety requirements
- Assembly design was prototyped and built to full scale
- Finally, full assembly was tested using a rope to ensure structural integrity

Outcomes
- Overall project met all technical specifications
- Optimizes safety, ease of use, size, and cost
- Project passed all testing measure instilled by team and sponsor