

Improving the Wire Harness Manufacturing Process



PROJECT BRIEF



47 Boeing 737s per month are currently manufactured

57 Boeing 737s per month is the manufacturing target

42 miles of wire in a next generation Boeing 737

As airplanes modernize, traditional mechanical systems have given way to increasingly complex electrical systems. This has been accompanied by a commensurate increase in the number and complexity of wire harnesses used to assemble these systems. Boeing has identified increasing the efficiency of producing these wire harnesses as a key area of interest.

The 2017-2018 SCOPE team has been tasked with improving a subset of these manufacturing processes by designing and building a production-ready prototype with the goal of being implemented in the Boeing factory by 2019-2020.



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PROJECT GOAL

Create a stand-alone module to be slotted into a wire harness assembly line.

The module needs to:

- + Accept a range of diameters and lengths of wire from a human operator or automated process
- + Store wire in Boeing's proprietary wire storage devices
- + Load and unload Boeing's proprietary wire storage devices in bulk
- + Process wires without causing damage to the wire
- + Function at a speed that keeps up with current production
- + Achieve TRL 4 with plans of how to achieve TRL 6

