Project Scope

# Research Objectives

To produce an acceptable solution for the required system, the following objectives need to be met:

* Identify what processes must be performed on an electrical cable before routing.
* Investigate what perception methods are needed to identify and localise flexible cables.
* Investigate what methods should be employed to facilitate the efficient execution of cable handling and manipulation tasks.
* Investigate what design characteristics are needed for the development of an end-effector that can manipulate flexible cables effectively.
* Examine possible cable grasping mechanisms and techniques and their capability tovary grip strength and agility.
* Examine suitable connection methods of multi-core electrical cables at 3 way junc-tions.
* Investigate what design characteristics are needed for the development of an end-effector that can install electrical connections effectively.
* Identify what methods are required to implement a routing system fully autonom-ously and ensure errors are handled correctly.
* Analyse the return on investment of the routing system compared to manual labour

# Exclusions

The following are excluded from the scope:

* Structural analysis and strengthening of parts for long life in industrial context.
  + This is because the conditions of future use are not clear, so instead the designs are used as proof of concept.
* Robot arm path planning.
  + This is because ZURU Tech has extensive knowledge and capability for path planning, further consideration would be trivial.
* Stepper motor speed control.
  + This is because motor control is already a very well-defined process, further consideration would be trivial.