A way to minimize procedural time for patients requiring minimally invasive operations by implementing a four-way steerable catheter handle.

A way to address the cumbersome, slow use of traditional mechanically steered catheters used by surgeons that would increase precision and decrease operation time.

A way to address the awkward and slow use of current steerable catheters used by surgeons that would decrease operating times and increase precision in the surgery.

A way to control catheters electronically for better accuracy and ease during catheter insertion procedures.

A way to make steerable catheters one handed to increase physician mobility and decrease catheter insertion procedure duration.

A way to address the limitations of mechanically steerable catheters used by surgeons to decrease operating times, increase surgical precision, and improve patient outcomes.

A way to increase surgeon’s access to internal compartments to decrease surgery time and increase precision.

A mechanism to steer catheters electronically in order to decrease procedure time and increase accuracy.

A cost-effective means to achieve greater flexional accuracy of steerable catheters in order to reduce procedure times and increase operator confidence.

A way to achieve single-handed operation of a steerable catheter so as to improve user experience and reduce average procedure time for percutaneous vascular intervention.

A way to improve ease of use and user experience for steerable catheters so as to increase operator confidence and decrease average procedure time for percutaneous vascular interventions.

A way to reduce the difficulty of catheter handling in order to lessen surgery time during any catheter insertion.

A means to achieve a wider range of tip geometries in steerable catheters so as to improve ease of vascular access and decrease procedure times

Final Need Statement:

Outcome- time,

Problem- Ease of use, accuracy

**A way to improve the usability and actuation of steerable catheters controlled by surgeons to increase surgical accuracy and decrease procedural time.**

Problem

* Too long of procedure time
* Cumbersome, slow use of traditional catheters
* Limitations of mechanical catheters
* Ease of use

Population

* Patients requiring minimally invasive operations
  + Percutaneous vascular intervention
  + Catheter insertion
* Surgeons
* Physicians - catheter insertion procedure

Outcome

* **Minimize procedure time**
* Minimally invasive operations
* Increase precision
* Increase mobility
* Improving patient outcomes
* greater flexional accuracy
* Vascular access