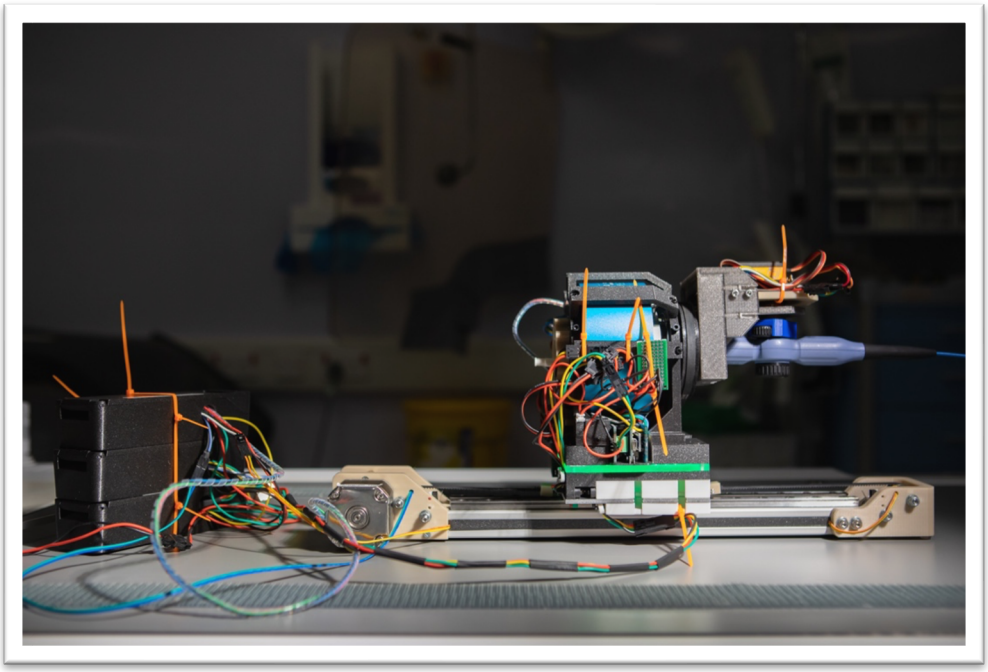
Evaluating CardioXplorer: A Robotic Catheter Ablation System

Questionnaire

Thank you for participating in this robotic left atrial catheter ablation experiment. Kindly take a few moments to provide us with your valuable feedback by completing the following questionnaire. Your input will help us improve the system and better understand its usability and effectiveness.



General Information

- Name: _____
- Years of experience as a cardiologist: _____

Section 1: General Questions about Catheter Ablation Procedures

The purpose of this section is to understand your approach to catheter ablation. It is just for our general knowledge.

1. Are there instances where you don't use PVI, and you use another technique instead?

2. What are the most common factors for AF re-occurrence (e.g., gaps between ablation points)?

3. During repeat ablation, because of AF re-occurrence, what factors determine your choice of treatment?

4. What are the top three parameters you look out for during ablation?

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Section 2: Robotic System Evaluation

Please rate the following aspects of the robotic system, using a scale of 1 to 5: (1 = strongly disagree/very unsatisfied/very poor, 2 = disagree/unsatisfied/poor, 3 = neutral/fair, 4 = agree/satisfied/good, 5 = strongly agree/very satisfied/excellent).

	Strongly Disagree	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
1. The system is easy to use.	1	2	3	4	5
2. The system provides all the motions required to perform ablation.	1	2	3	4	5
3. The system was reliable and consistent during the procedure.	1	2	3	4	5
4. The system easily integrates with existing equipment in the X-MRI lab.	1	2	3	4	5
5. The visual feedback, such as the LEDs, simulation, and video feedback, provide sufficient information on what is happening inside the lab.	1	2	3	4	5
6. The simulation of the robot alone, provides sufficient information on what is happening inside the lab.	1	2	3	4	5
7. The video feedback from the camera, provides sufficient information on what is happening inside the lab.	1	2	3	4	5
8. There were no limitations or challenges encountered during the procedure.	1	2	3	4	5

Section 3: Catheter Ablation Maneuvers

Please rate the following aspects of the maneuvers provided by the robotic system to perform ablation in terms of speed and sensitivity, using a scale of 1 to 5.

- *Speed:*
  - *Speed here refers to how quickly and efficiently the catheter ablation maneuvers can be performed. Participants are being asked to rate the ease and efficiency with which they can execute these maneuvers within a specific time frame.*
  - *A higher rating for speed might indicate that participants find the maneuvers to be easily and quickly executable without unnecessary delays or complications.*
  - *This dimension assesses the procedural efficiency, time management, and the smoothness of performing the maneuvers.*
- *Sensitivity:*
  - *Sensitivity in this context refers to how delicately and accurately the catheter ablation maneuvers need to be performed. Participants are being asked to rate the level of precision and attention to detail required for each maneuver.*
  - *A higher sensitivity rating might indicate that participants recognize the need for careful and accurate execution, where even slight variations can have significant consequences.*
  - *This dimension assesses the precision, accuracy, and intricacy demanded by the maneuvers.*

	Speed					**Sensitivity**				
	Strongly Disagree	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***	***Strongly Disagree***	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
1. Insertion.	1	2	3	4	5	1	2	3	4	5
2. Advancement.	1	2	3	4	5	1	2	3	4	5
3. Handle rotation.	1	2	3	4	5	1	2	3	4	5
4. Catheter tip flexion and extension.	1	2	3	4	5	1	2	3	4	5
5. Steering.	1	2	3	4	5	1	2	3	4	5
6. Withdrawal.	1	2	3	4	5	1	2	3	4	5

Section 4: Joystick Controller

Please rate the following aspects of the joystick controller, using a scale of 1 to 5: (1 = strongly disagree/very unsatisfied/very poor, 2 = disagree/unsatisfied/poor, 3 = neutral/fair, 4 = agree/satisfied/good, 5 = strongly agree/very satisfied/excellent).

	Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
1. The interaction with the robot is natural, i.e., left hand for linear translation, both hands for rotation, and right hand for tip deflection.	1	2	3	4	5
2. The joystick controller provides intuitive control.	1	2	3	4	5
3. The joystick interface is easy to navigate.	1	2	3	4	5
4. The joystick controller is comfortable to hold during the procedure.	1	2	3	4	5
5. The joystick is responsive.	1	2	3	4	5

Section 5: Additional Feedback

We value your suggestions and ideas for improving the robotic system. Please share any feedback, recommendations, or features you would like to see in future iterations.

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Thank you for your participation and valuable feedback. Your input will contribute to the advancement and refinement of our robotic system for left atrial catheter ablation.