

## Healthcare: Devices

# An augmented reality based robotic device to access kidney for PCNL surgery

## APPLICATION

The "nGuide", a robotics surgical intervention platform to provide critical access in the kidney in one attempt with ionic radiation safety to healthcare practitioners.

### COMPANY NAME

Comofi Medtech Pvt Ltd

### TECHNOLOGY READINESS LEVEL (TRL)

TRL: 7 (Clinical trials completed)

### INTELLECTUAL PROPERTY

PCT: WO2020100015 NP in US20220000565A1

### FOUNDERS' NAME

Satish Kalme

IN346001 (Granted)

## PROBLEM ADDRESSED

The first critical step in PCNL is accessing desired calyx, which remains a challenging problem. Currently, the renal access is gained by free hand technique, manual puncture, using image guidance from fluoroscopy and ultra sound in PCNL surgery. Free hand technique to access renal system is highly dependent on the trained and experienced operator and involves steeper learning curve. Prior studies estimate that it takes a minimum of 60 cases to achieve competence in obtaining access and 115 procedures prior to achieving excellence<sup>1</sup>. This technique has high chances of needle deflection from predefined path due to different tissue consistencies and changes in the pressure applied leading to puncturing iterations causing micro traumatization of parenchyma.

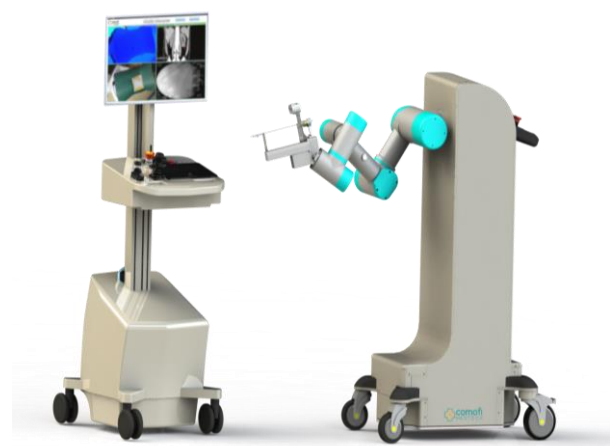
## ABOUT THE TECHNOLOGY

The surgery intervention platform uses pre-operative and intra-operative data for better intervention planning. Surgeons are benefited from increased cognitive performance and work efficiency. The powerful image processing tools and robotic accuracy provides intervention at critical steps during surgery to improve the surgical outcome. nGuide intervention platform helps surgeons to visualize target area during surgery in great details and increase surgical efficiency and safety for surgeons and patients both.

## FUNDS RAISED/ACHIEVEMENTS

- BIRAC BIG grant of INR 47.91 lakhs.
- BIRAC SBIRI. Funds Received: INR 25.00 lakhs.
- BIRAC LEAP investment of 50 Lakhs
- Seed Funding (Open round). Funds: INR 1.5 Cr
- DST CAWACH. Funds received: INR 65 Lakhs
- Awards: Top 10 startups selected for AIT-Swissnex program, 2018

## PRODUCT IMAGE



## USP

- Intra-operative puncture path planning
- 100% PCNL puncture accuracy
- 100% safety from ionic radiation exposure
- Increase cognitive performance
- Improve Work efficiency
- Safety from Ionic radiation exposure
- Improved surgical outcome

## END USERS/CUSTOMERS

- Well-established urology centers, kidney care centers and hospital with Urology departments with more than 10 bed size, Medical Colleges, etc.