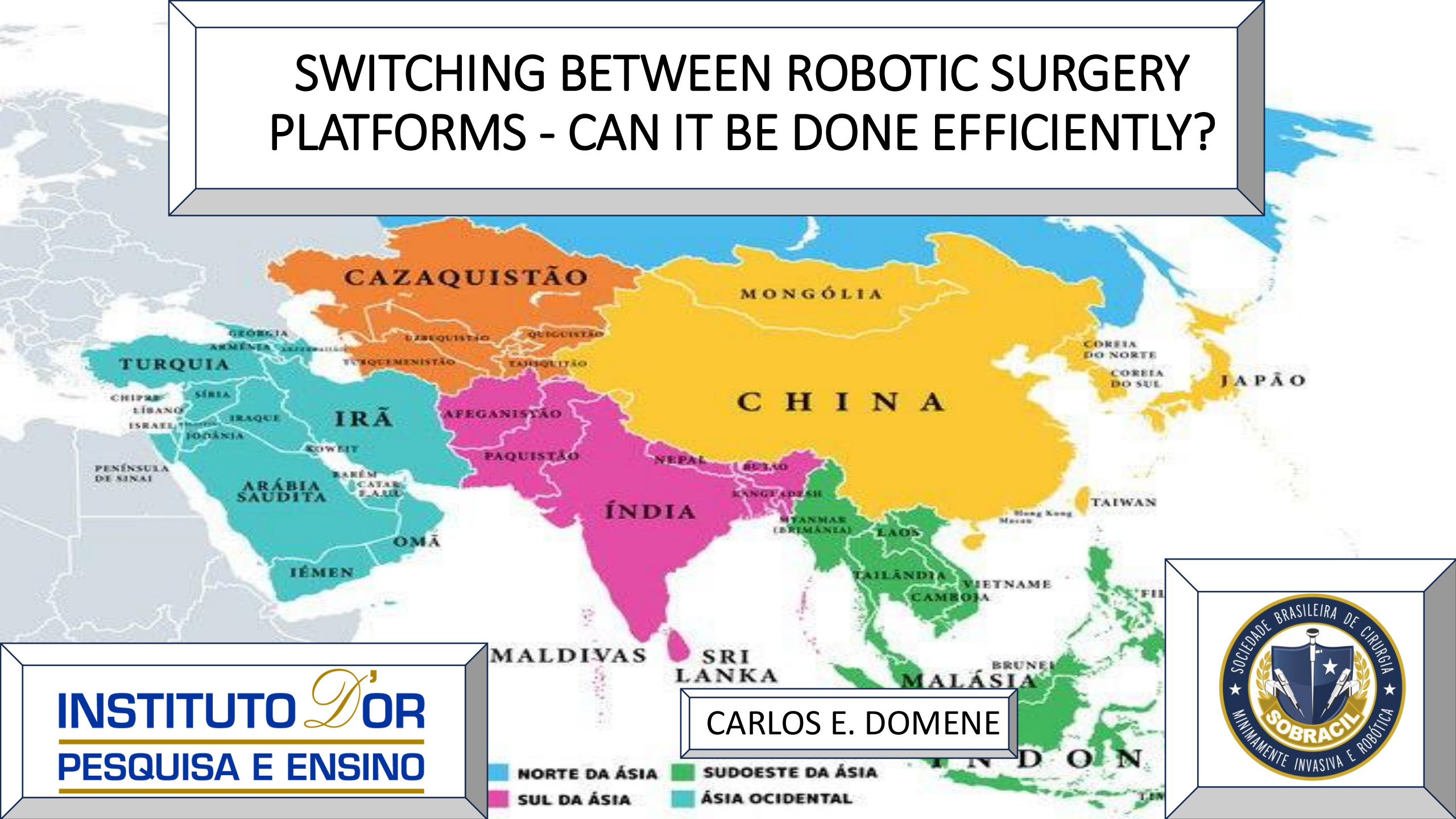


SWITCHING BETWEEN ROBOTIC SURGERY PLATFORMS - CAN IT BE DONE EFFICIENTLY?



INSTITUTO *D'*
PESQUISA E ENSINO

CARLOS E. DOMENE



- PROCTOR INTUITIVE
- PROCTOR MICROPORT TOUMAI
- PROCTOR SYSMEX KAWASAKI HINOTORI
- PROCTOR CMR VERSIUS

- DA VINCI X-XI-DV5
- OTTAVA
- HUGO
- ASENSUS
- SENHANCE
- MIRA

• VERSIUS

• ROB





JAPAN
HINOTORI

SOUTH KOREA
REVO-I
STARK

CHINA
TOUMAI
EDGE
CARINA
KANGDUO
TUODAO
SHURUI
VICENTE
MICROHAND S

INDIA
MANTRA

MODULAR ARMS

- CARINA RONOVO
- MANTRA
- VERSIUS
- HUGO
- OTTAVA



INTEGRATED ARMS (BED)

- OTTAVA

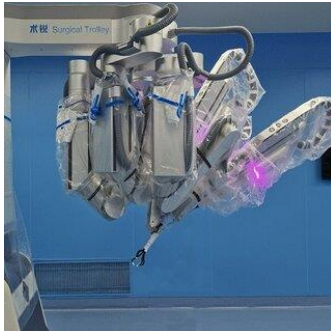
INTEGRATED ARMS (TOWER)

- TOUMAI
- HINOTORI
- KANGDUO
- TUODAO
- REVO-I
- EDGE
- VICENTE
- MICROHAND S
- DA VINCI X – XI – DV5
- ROB



SINGLEPORT

- SHURUI
- EDGE
- DA VINCI SP



OPEN CONSOLE

- MANTRA
- KANGDUO
- SHURUI
- MICROHAND S
- VERSIUS
- HUGO
- STARK



IMERSIVE CONSOLE

- TOUMAI
- HINOTORI
- CARINA
- REVO-I
- VICENTE
- EDGE
- TUODAO
- DA VINCI X – XI – DV5
- OTTAVA



TELESURGERY

- TOUMAI
- HINOTORI
- EDGE
- MANTRA

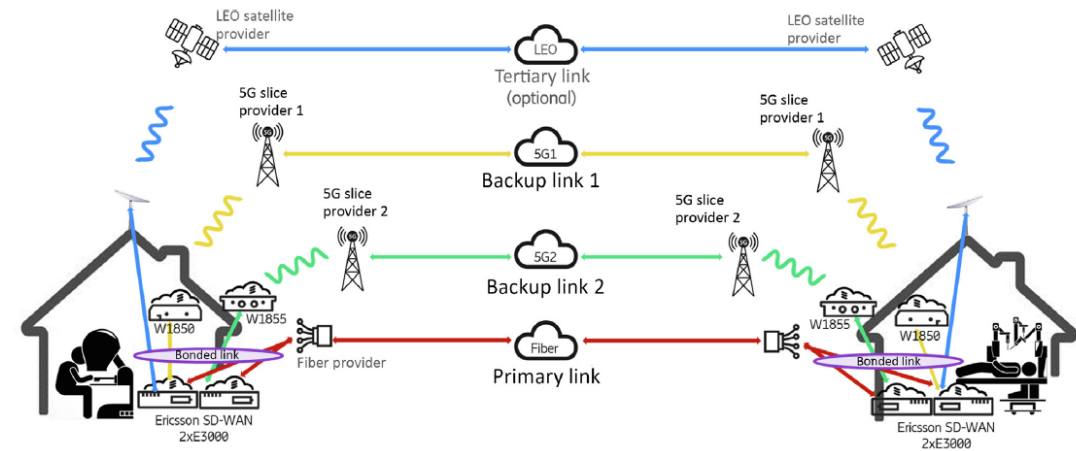
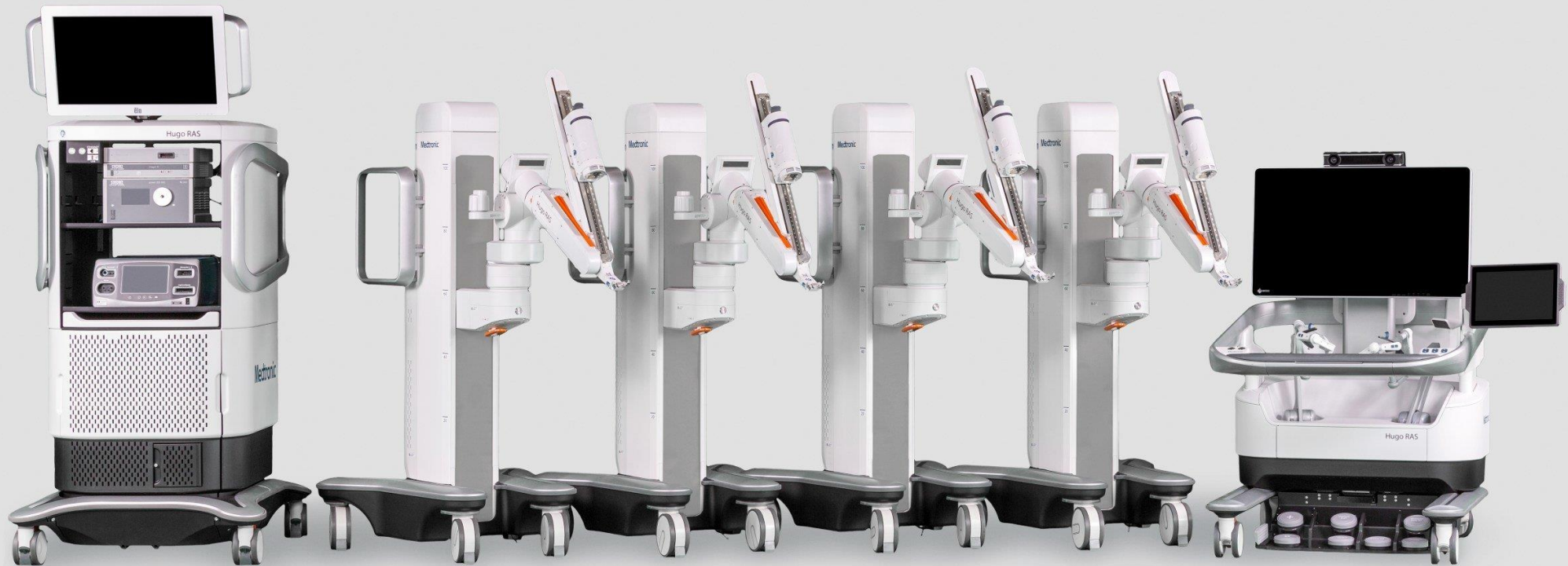


Fig. 1 – Illustration of different types of connectivity for telesurgery: main fiber connection (red), main and backup 5G links (green and yellow), and backup satellite connection for remote areas (blue). LEO = low-earth orbit; SD-WAN = software-defined wide-area network.(For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)



HUGO

MEDTRONIC

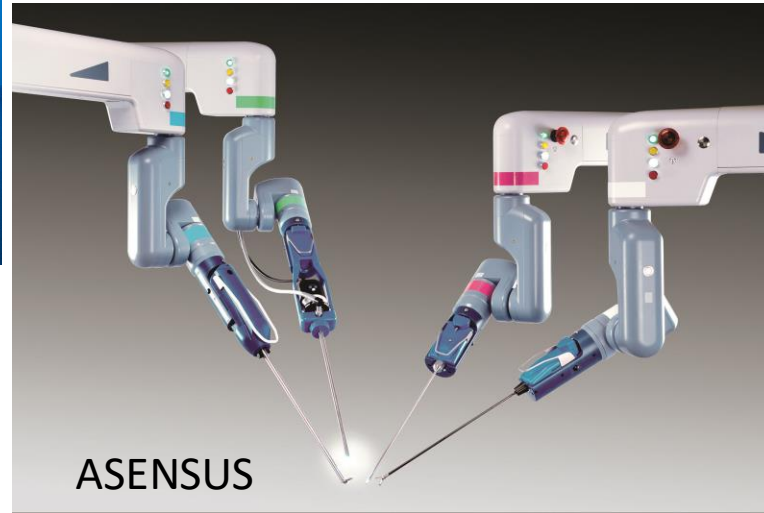


VERSUS





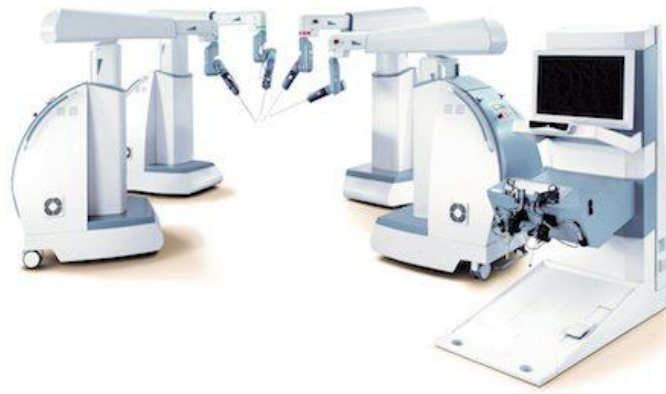
VERSIUS



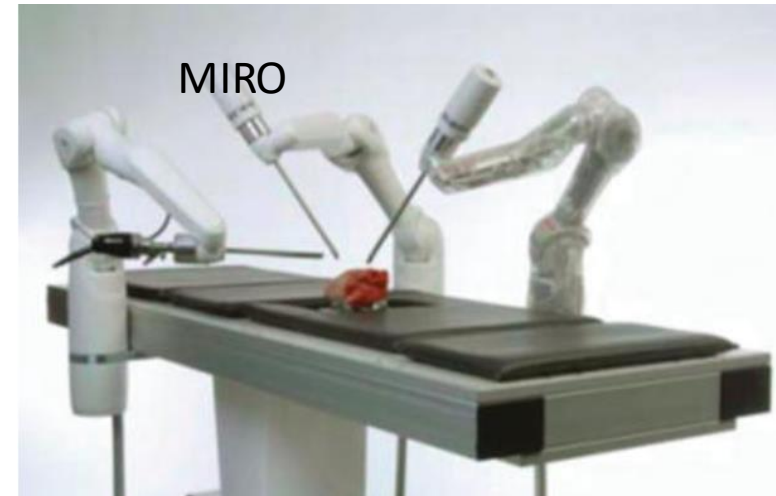
AESOP



HUGO



SENHANCE (TRANSENERIX)



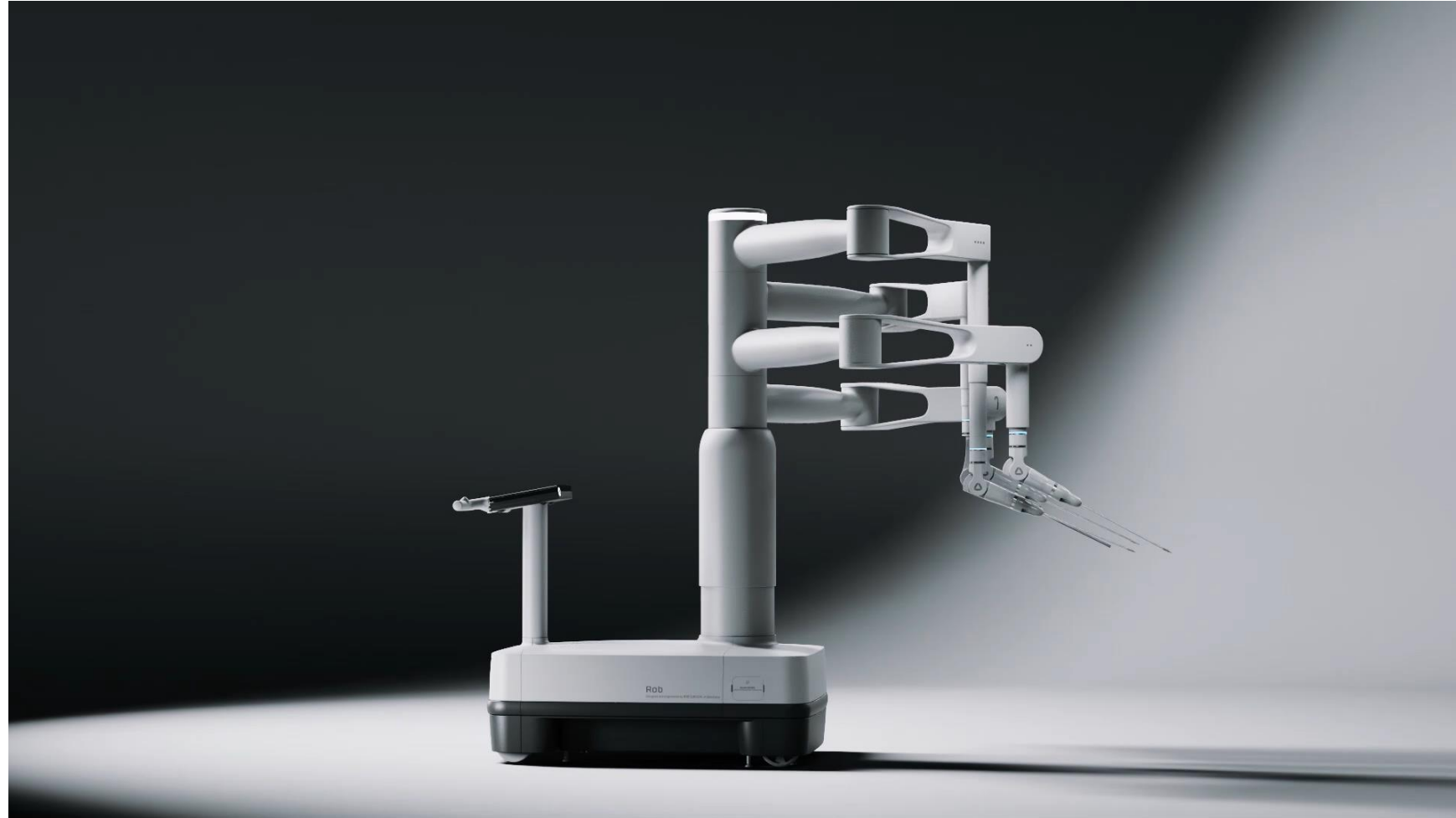
MIRO

RONOVO
SURGICAL



FTO

ROB



STAR[®]K



LIVSMED
www.livsmmed.com

DA VINCI XI - 5



DA VINCI X



REVO I



revo-i™

A Revolutionary Advancement in Minimally Invasive Surgery, Revo-i™

The Revo-i™ surgical robotic device provides convenience and stability to healthcare professionals in order to perform surgeries with easier anatomical access and clearer visual assistance.



Vision Cart



Operation Cart



Master Console

Putting Surgeons in Control

The ergonomically designed Revo-i™ surgical robotic device creates an environment where operating surgeons can truly focus on the surgeries they perform. Using its 3DHD Viewer, Smooth Controls, and Articulated Instrument Controls, you can perform even more precise surgeries efficiently and comfortably.

3DHD Viewer

Work with the precision of three-dimensionality to visualize the depth of body tissues, as well as nerves and blood vessels as if seeing them with your own eyes.

Smooth Controls

Experience the natural, unencumbered movement of the end effector of the instrument as you control it accurately and effectively with your hand.

Integrated Touchpad

Simultaneously check the condition of the instrument arm and camera arm, while adjusting the settings of the master console display, speakers, and etc.

Ergonomic Settings for Surgeons

Designed with easily adjustable settings for the console head, armrest, and foot pedal to perform robotic surgeries in the most comfortable position.

Adjustable Foot Pedal

4 different types of pedals* allow you complete control over the OP cart arm and energy instruments.

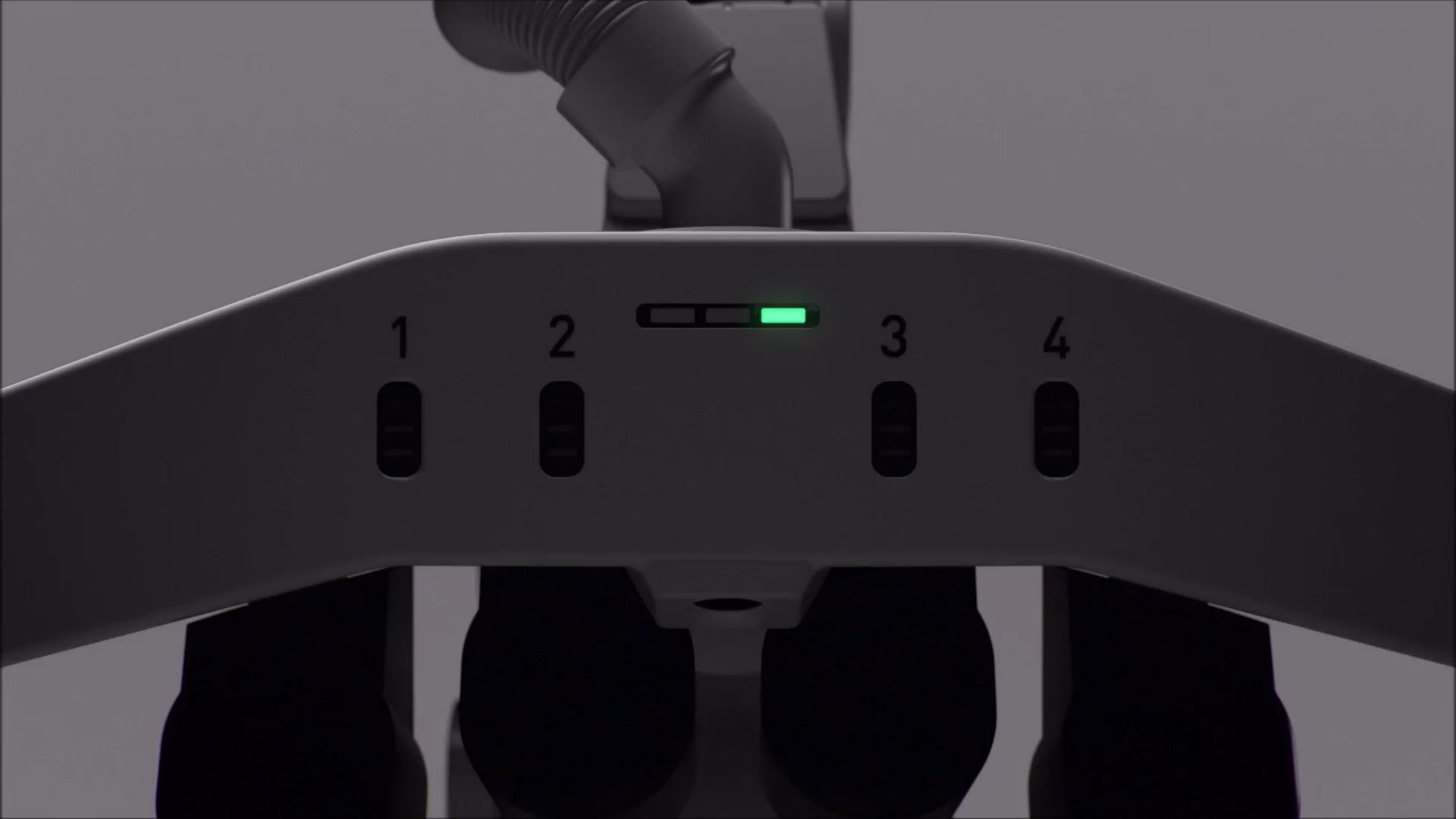
*Includes a camera clutch pedal, arm clutch pedal, arm switching pedal, and energy control pedal.





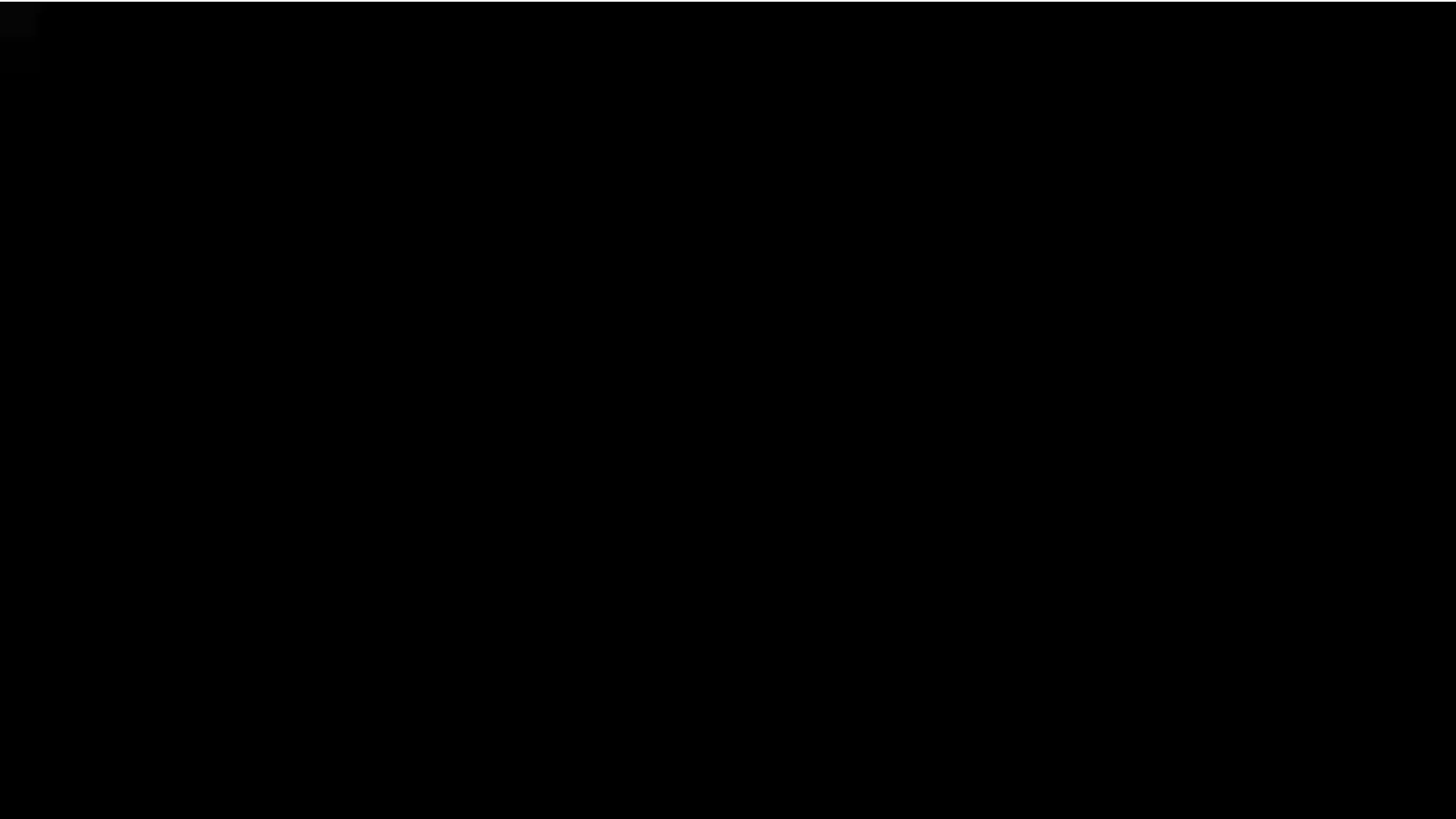
hinotori™





MICRO HAND “S” CHINESE ROBOT





Edge Medical

e b
7

TUODAO





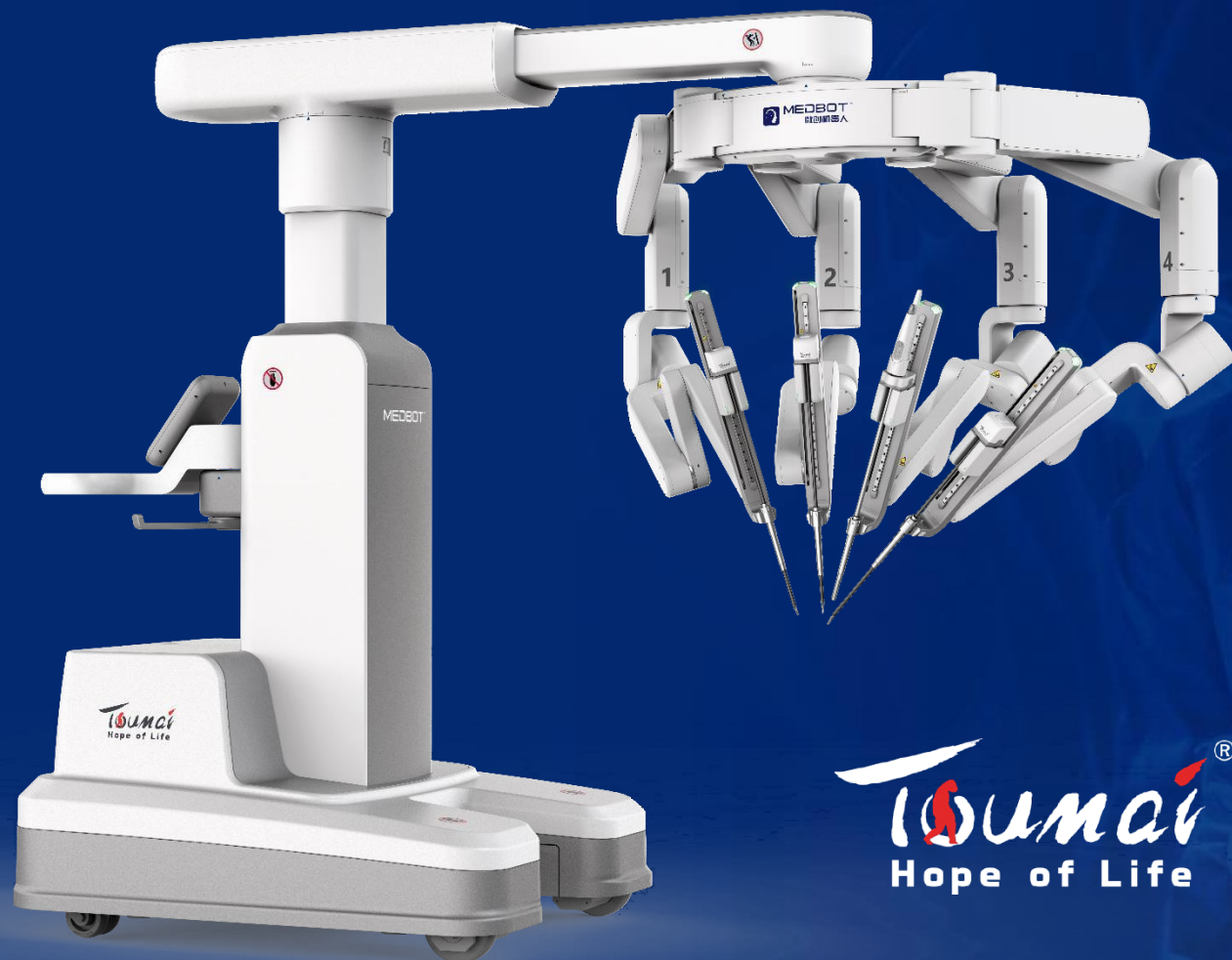
 **MicroPort**
MedBot

Tsumai





MEDBOT™
微创机器人



Toumai® MT-1000 Endoscopic Surgical System


Toumai®
Hope of Life



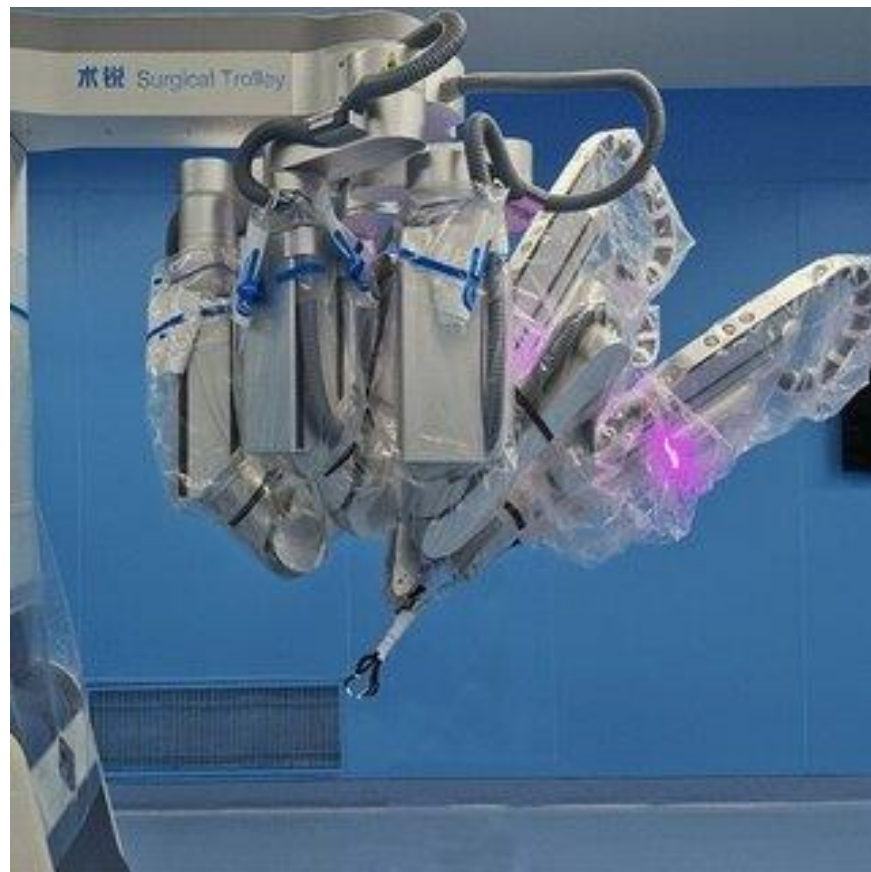
Eyes for greatness
Hands on details

SAGEBOT – KANGDUO SR2000

5 ARMS

TWO CONSOLES – TWO SURGEONS SIMULTANEOUSLY

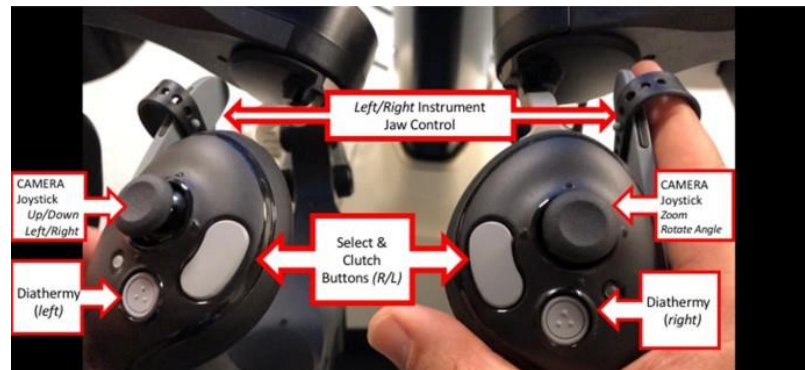
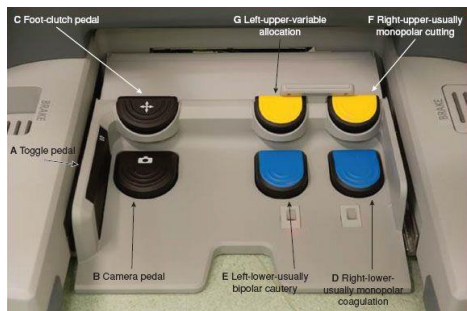
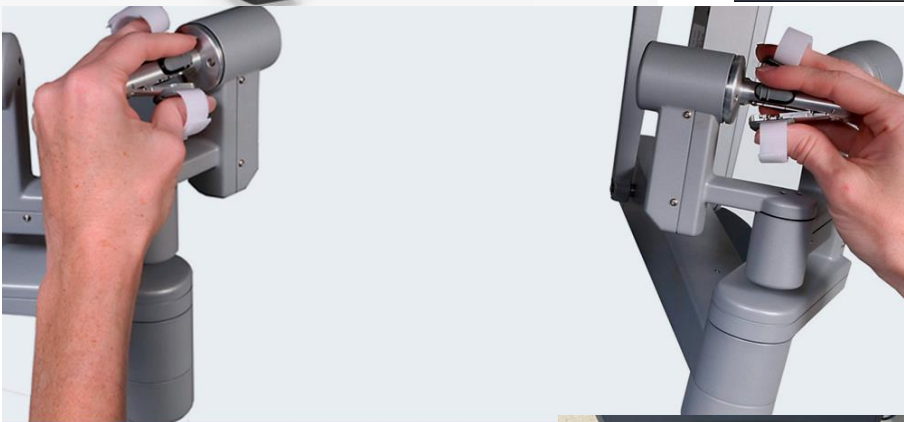
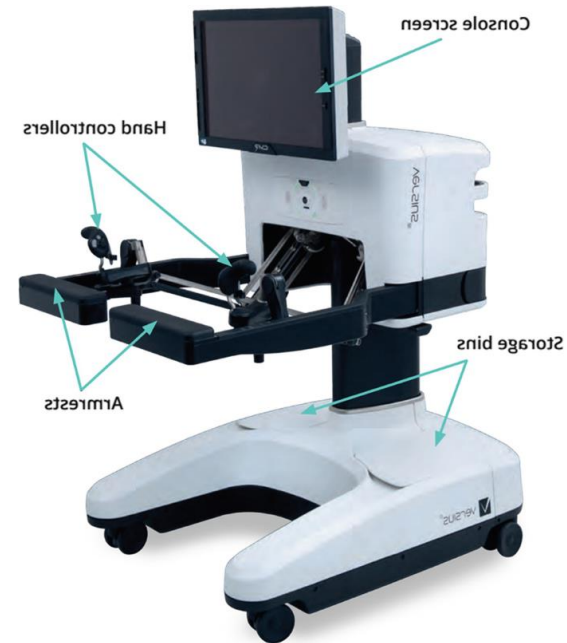




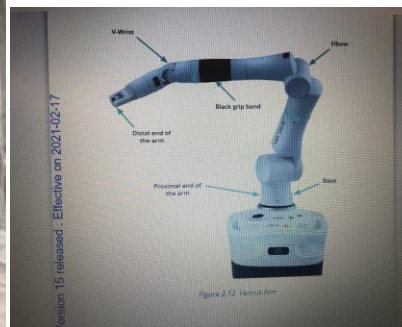
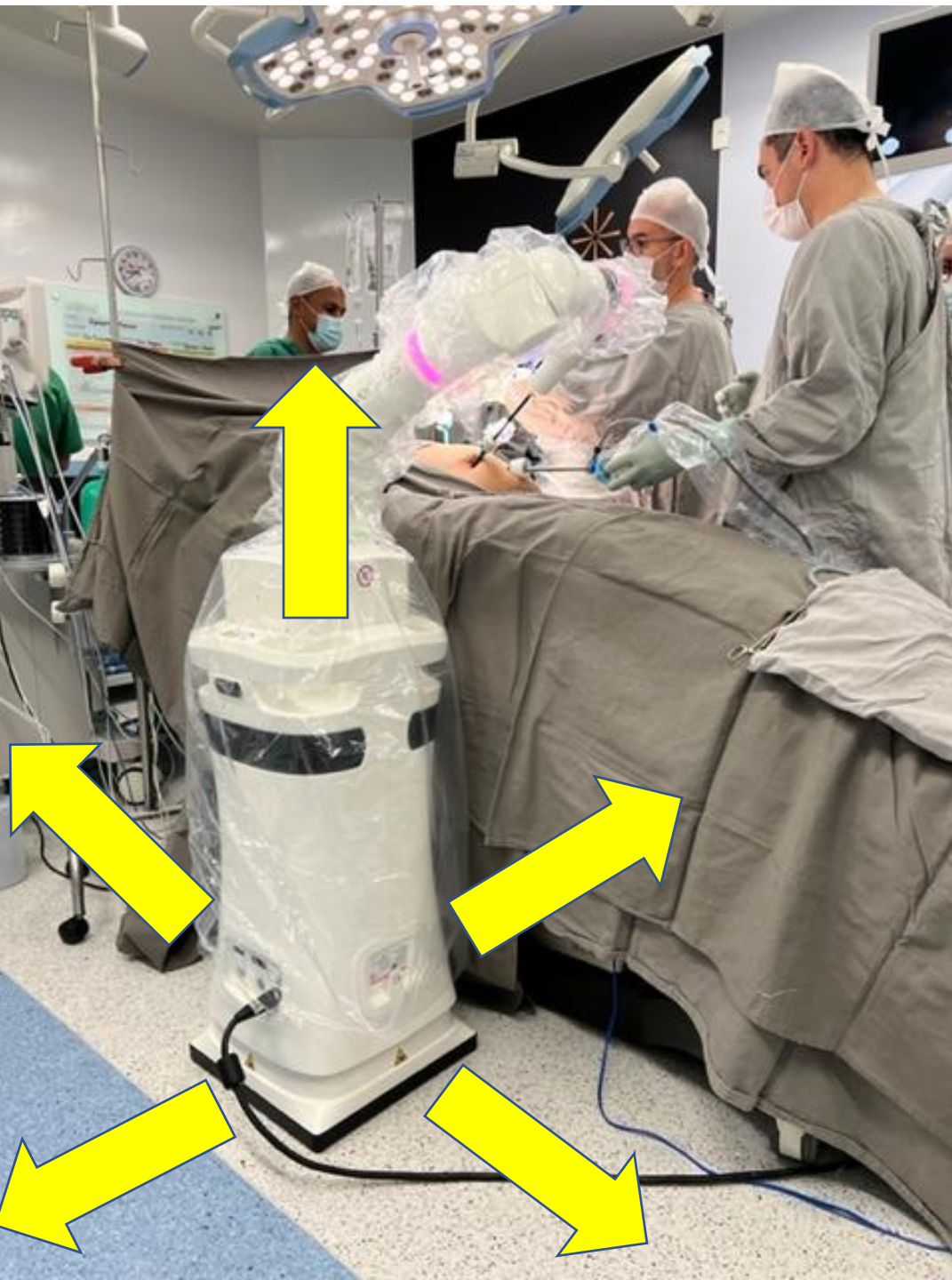
MY THOUGHTS ABOUT ROBOTIC SURGERY

STANDARDIZE CONSOLE CONTROLS
OPEN – IMERSIVE CONSOLE
MODULAR – INTEGRATED
ARMS ATTACHED TO THE TROCAR











Grey Zone

Telesurgery: Challenges, Ethical Considerations, and Opportunities in the Robotic Surgery Era

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^bTelemedicine and Telehealth, Department of Urology, Brigham Young University, Salt Lake City, UT, USA

^cTelemedicine and Telehealth, Department of Urology, Brigham Young University, Salt Lake City, UT, USA

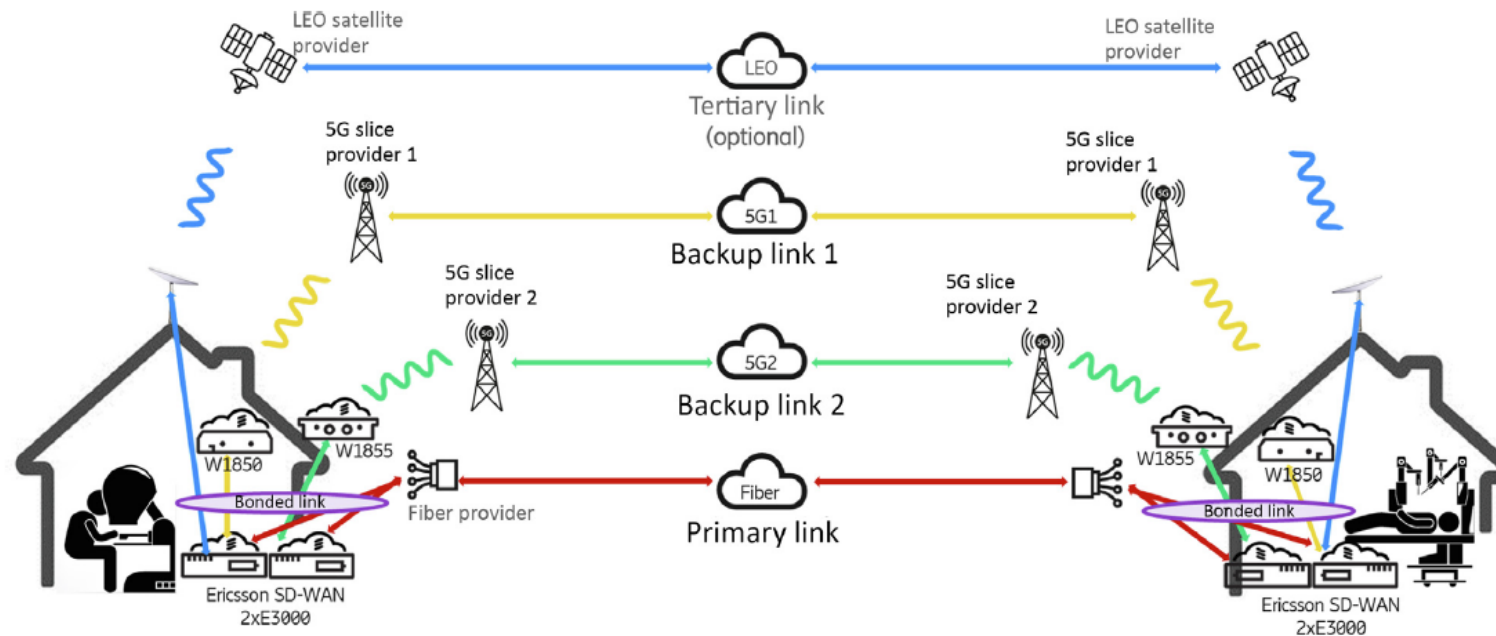
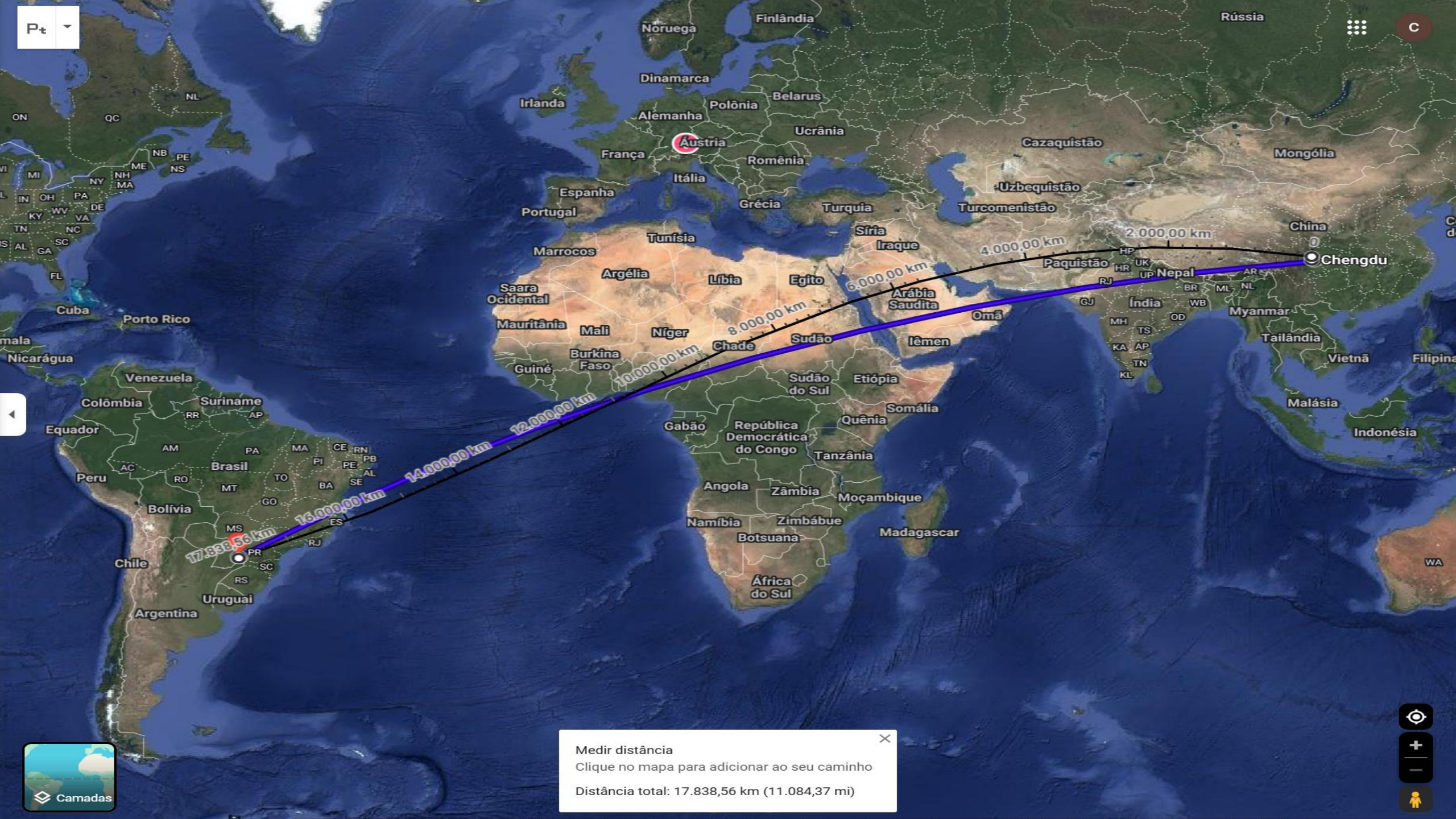


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Medir distância

Clique no mapa para adicionar ao seu caminho

Distância total: 17.838,56 km (11.084,37 mi)

Map navigation controls: zoom in (+), zoom out (-), full screen (eye icon), and user icon.

Future Perspectives

REMOTE CONSOLE CONTROLLING HAS OTHER PERSPECTIVES:

- 1 **TELESURGERY**
- 2 **TELETRAINING**
- 3 **TELEPRECEPTORING**
- 4 **TELEPROCTORING**

PERSPECTIVES WITH TELESURGERY GO ABOVE ONLY OPERATING A PATIENT, BUT PROMOTING SAFE AND EFFECTIVE TRAINING FOR NEW ROBOTIC SURGEONS FROM:

- 1- TELETRAINING DRY LAB
- 2- TELETRAINING WET LAB
- 3 – TELETRAINING CADAVER LAB
- 4 – TELEPRECEPTORING
- 5 - TELEPROCTORING