CYBER SURGERY

Empowering surgeons
Improving lives

Innovative robotic navigation for multipurpose and seamless spinal procedures

30/11/2023

Jorge Presa Alonso, PhD
CEO, Cyber Surgery

CYBER SURGERY

2017

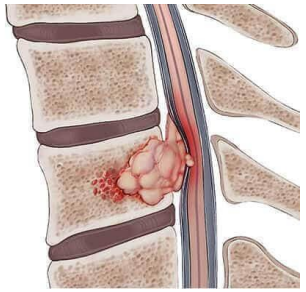
OFICINA
Paseo Mikeletegi 71
20009 Donostia
(Gipuzkoa)

- 28 personas: 6 PhD + 19 Master en Ingenierías.
- Proporción género1:1
- Experiencia en el ámbito técnico y empresarial.
- Sector Salud y Empresas Industriales

CIRUGÍAS COLUMNA VERTEBRAL

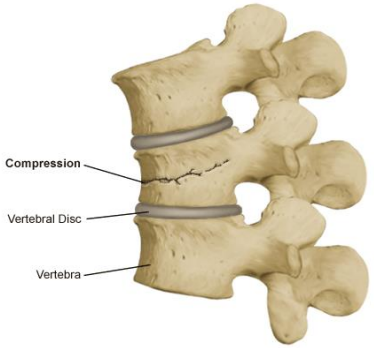
Escoliosis

Tumores



Degenerativas

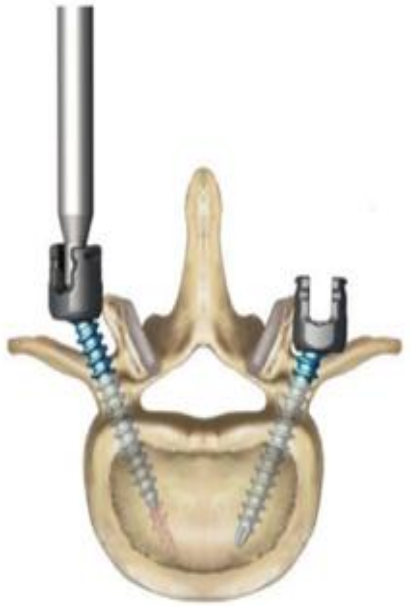
TRASTORNOS DE COLUMNA



Fracturas

Estenosis

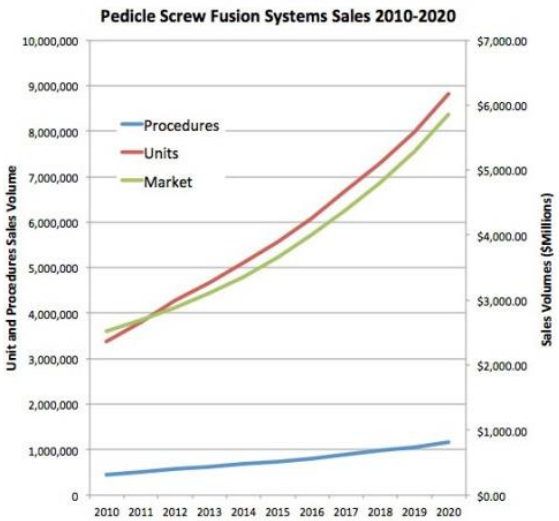
FUSION VERTEBRAL

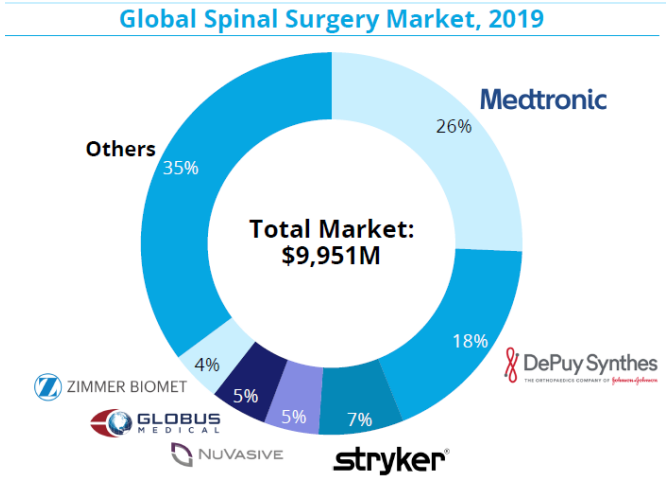


Global Market

Spine

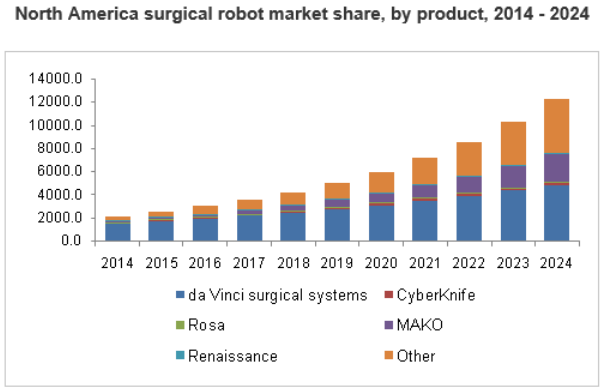
- **7 Million screws in 1,2 M** surgeries in US per year
- **20.000 hospitals** all around the world which perform these surgeries
- Technology is being adopted by hospitals **(Market Opportunity)**

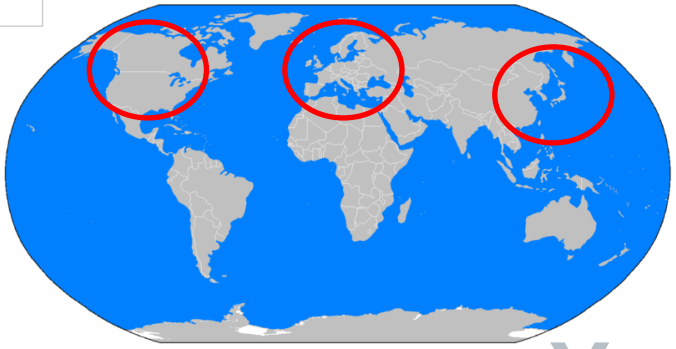




Robotic Surgery

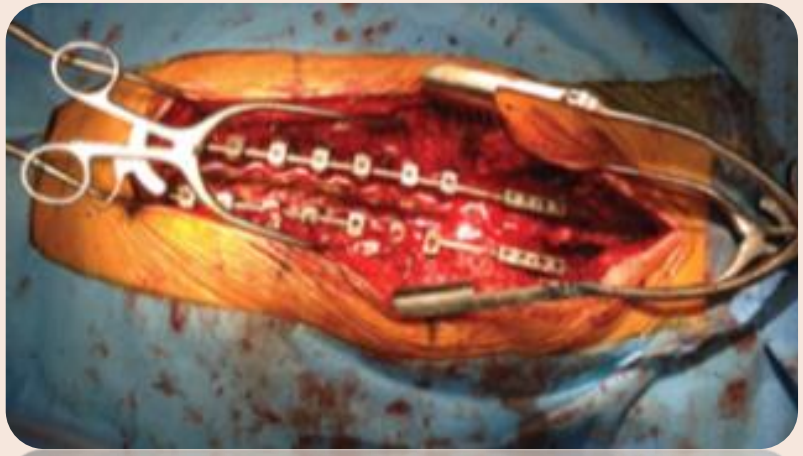
- In 2030 robotic assisted surgery for spine will be **3.600 million of euros**
- **CAGR 20%** in robotic surgery and **33,6%** in spine
- Spine market is a niche where **accuracy** is mandatory





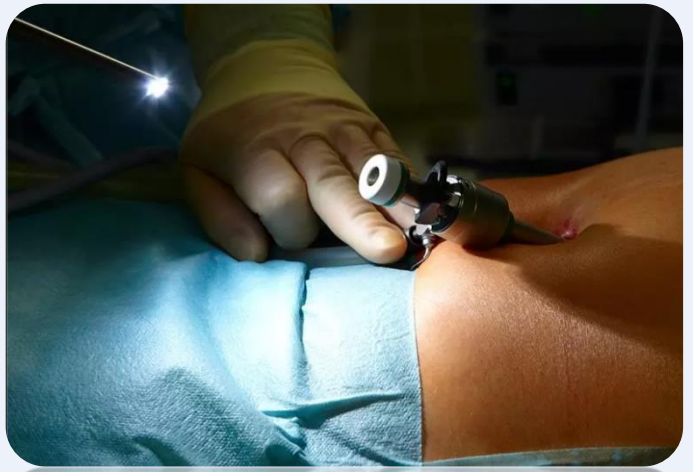
CIRUGÍAS COLUMNA VERTEBRAL

CIRUGÍA TRADITIONAL



- Cirugía Abierta
- Vista y experiencia del cirujano

CIRUGÍA ROBÓTICA

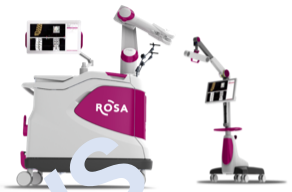


- Cirugía mínimamente invasive
- Precisión exacta

Competitors

Under certification process

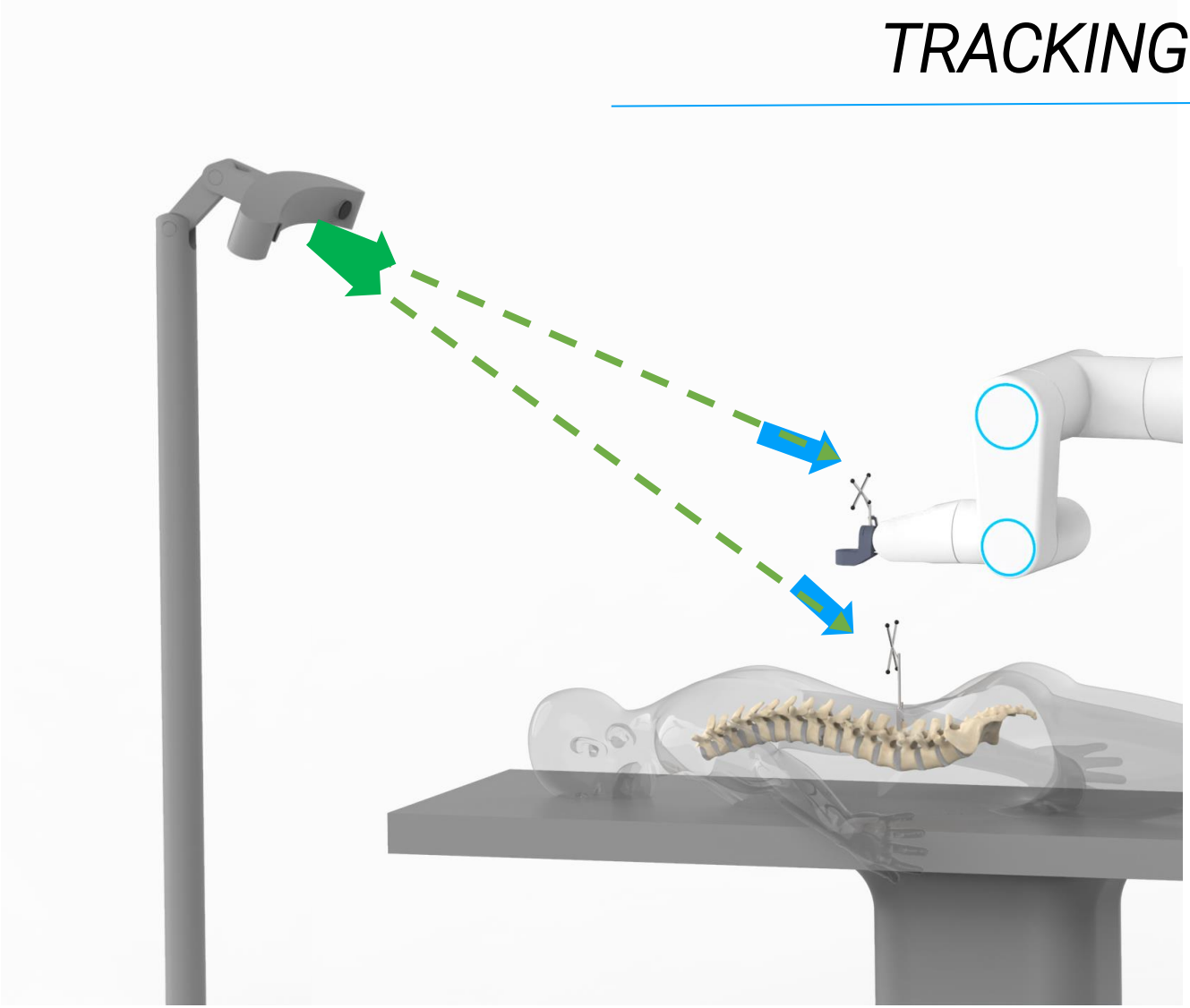
FDA 510(k) CE certifications



Partially certified

TECNOLOGÍA ACTUAL

TRACKING ÓPTICO.

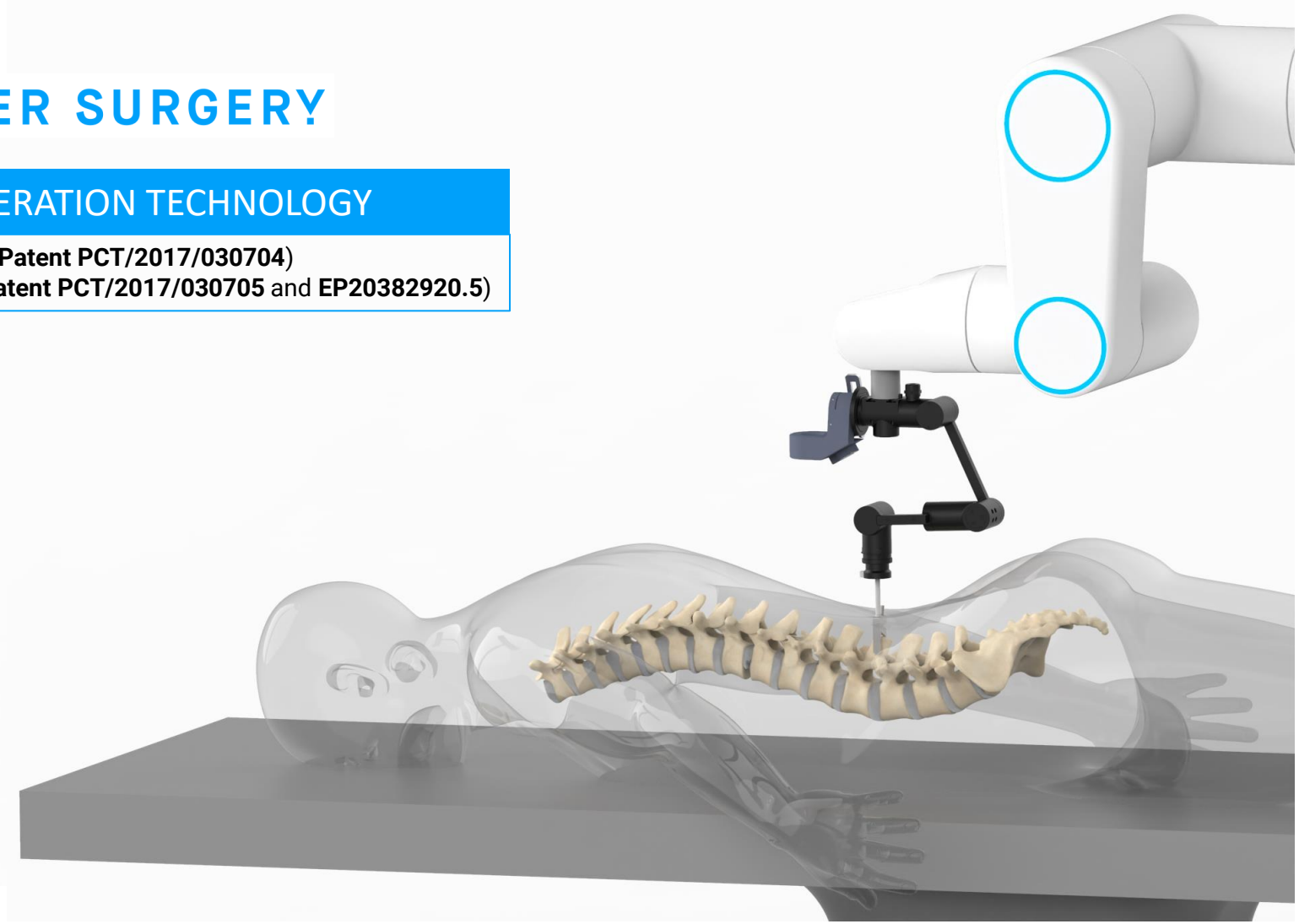


TECHNOLOGÍA DE CYBER SURGERY

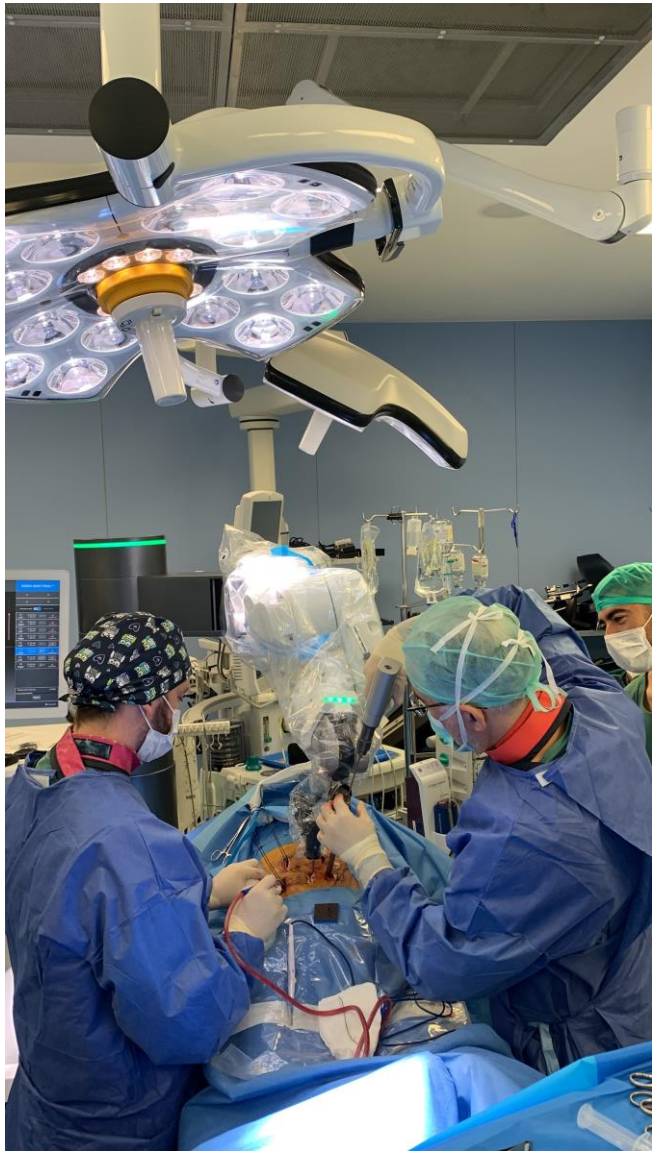
CYBER SURGERY

NEXT GENERATION TECHNOLOGY

- Mechanical Tracking (**Patent PCT/2017/030704**)
- Surgical Procedure (**Patent PCT/2017/030705** and **EP20382920.5**)



Product



CE MARK

CLASE I (Low potential risk)

CLASE IIa (Moderate potential risk)

CLASE IIb (Significant potential risk)

CLASE III (Higher potential risk)

FEBRERO 2021

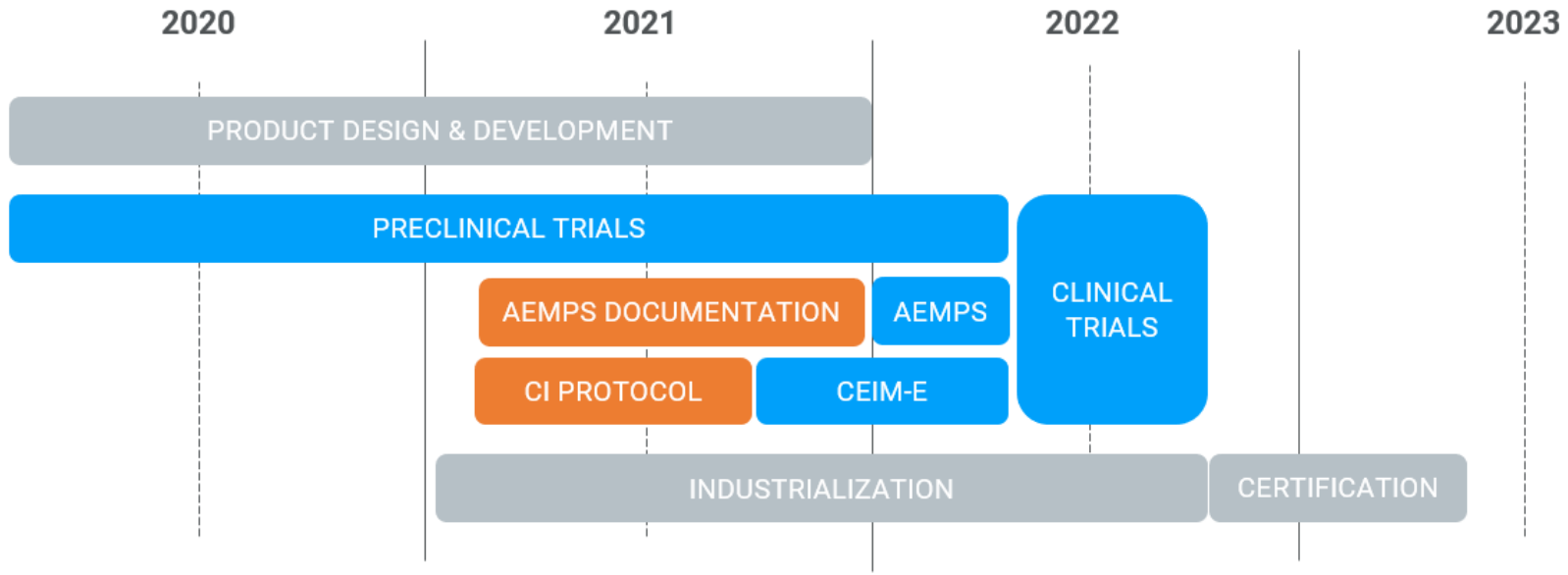
An Open Innovation test bed for the development of high-risk medical devices

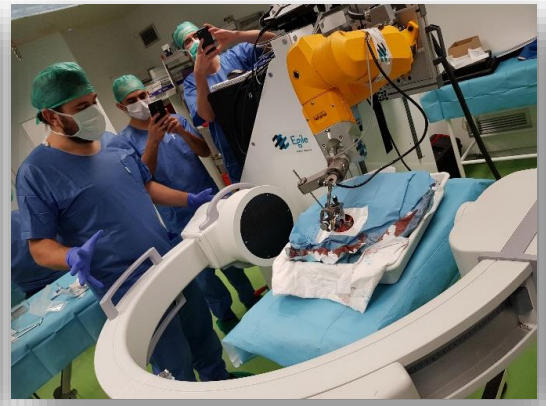
OBJETIVO:

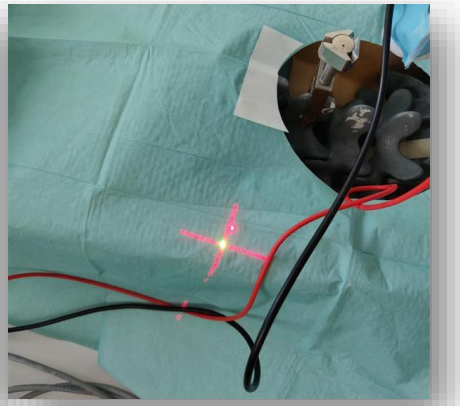
Apoyar el Desarrollo de productos sanitarios de alto riesgo (Clase Iib o Clase III) que estén preparados para lanzar un studio clínico.

TBMED has received Funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 814439.

PROJECT STATUS 2021



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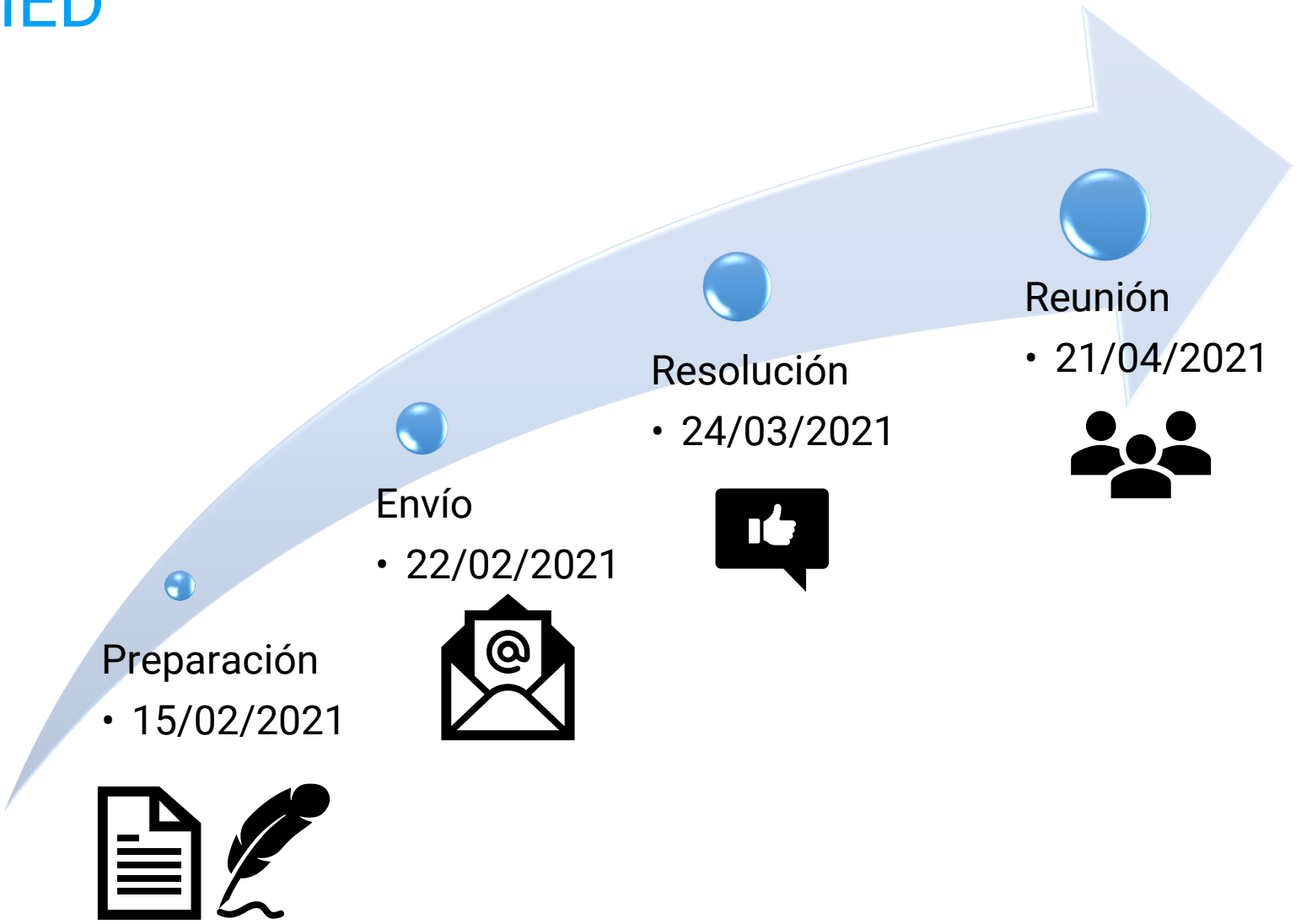
Preparación
• 15/02/2021
Envío
• 22/02/2021
Resolución
• 24/03/2021
Reunión
• 21/04/2021

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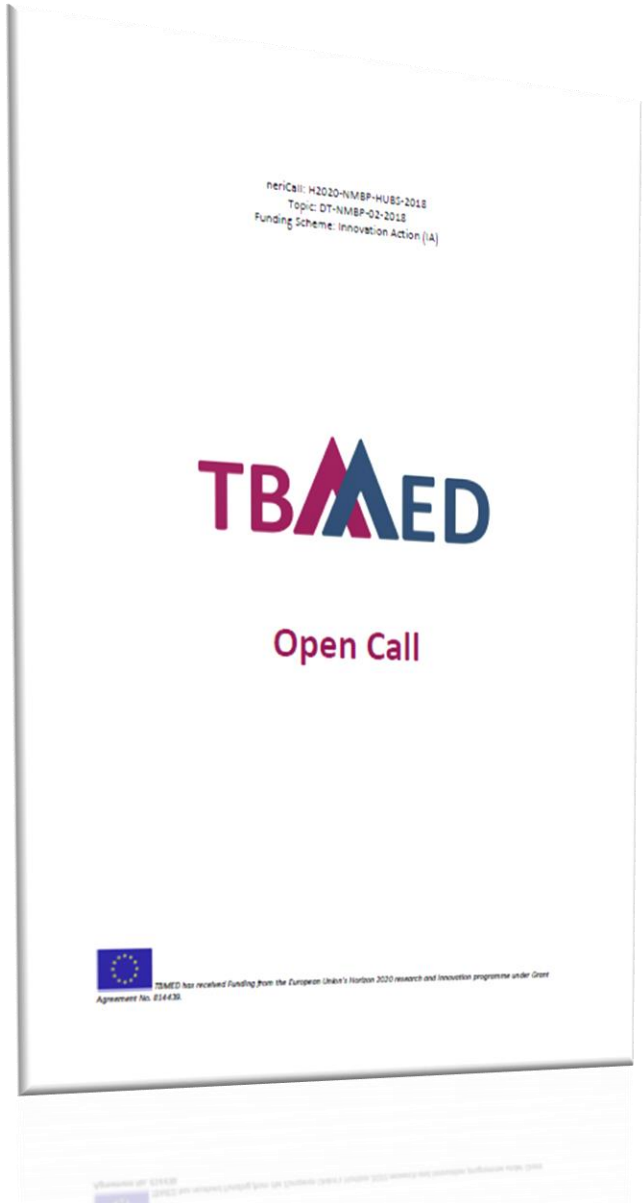


Table of Contents

PRODUCT DESCRIPTION

PRODUCT

Robotic assistant for spinal fusion. It guides the surgeon in the insertion of transpedicular screws based on a previous planification on patient's CT.

USER

Neurosurgeon.

OPERATING SITE

Surgery room.

PRODUCT CLASSIFICATION

Class IIb active device (Rule 11, MDR (EU) 2017/745).

PROCEDURE

1. Acquisition of patient's 3D preoperative image (CT)

2. Surgery planification with Cyber Surgery's planification software.

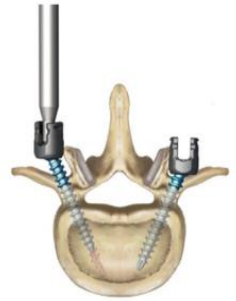
3. Bone clamp connection to object vertebra.

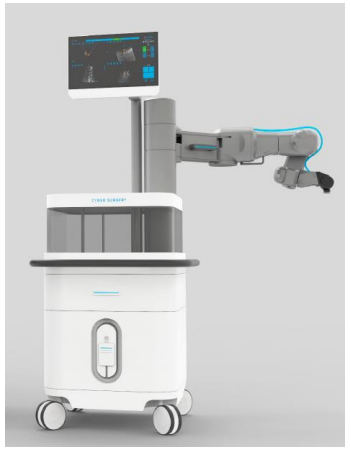
4. Fiducial location on top of the bone clamp for registration process.

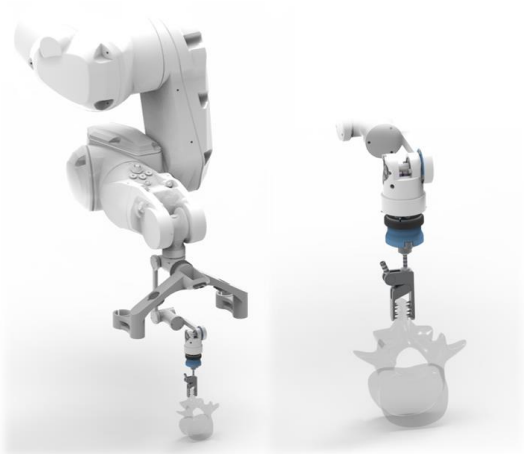
5. Intraoperative image acquisition (2D or 3D)

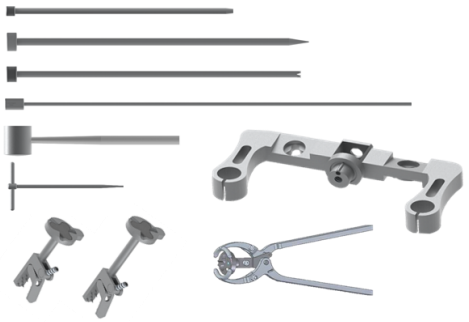
6. Take away of fiducial and connection of tracking system to bone clamp.

7. The assistant guides the surgeon through the tool guide, following planned trajectory.







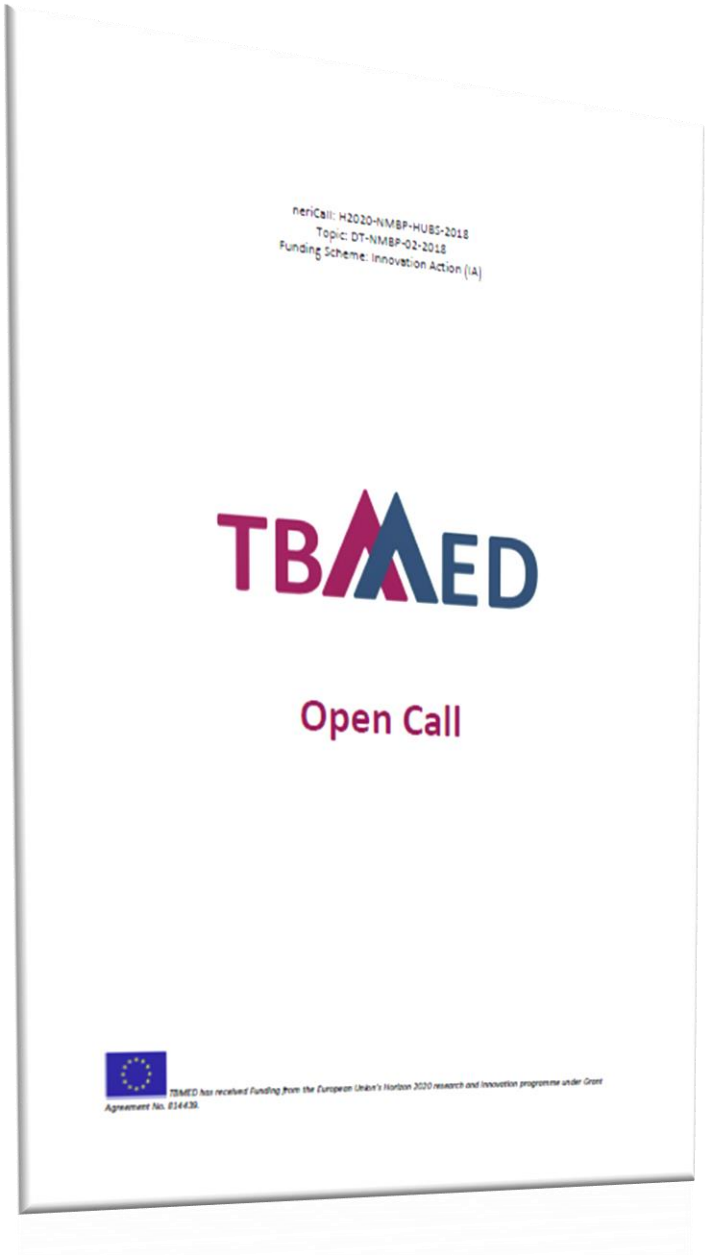


TB-MED

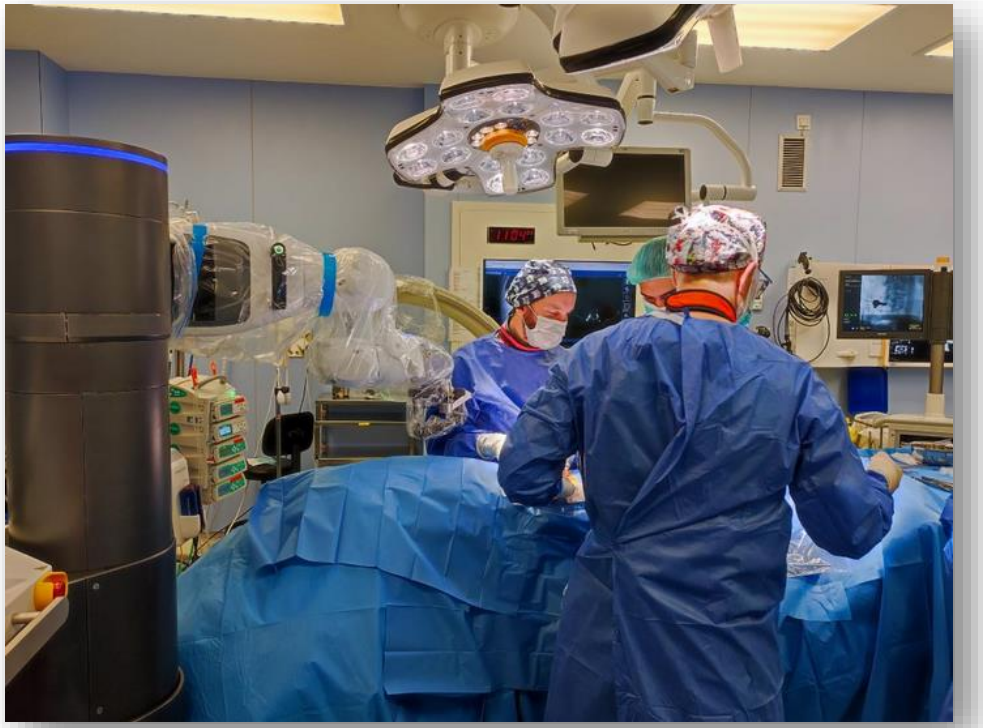
BIOGIPUZKOA
EUSKAL OSASUN IKERKUNTZA
INVESTIGACIÓN VASCA EN SALUD
BASQUE HEALTH RESEARCH

BIOBIZKAIA
EUSKAL OSASUN IKERKUNTZA
INVESTIGACIÓN VASCA EN SALUD
BASQUE HEALTH RESEARCH

BIOARABA
EUSKAL OSASUN IKERKUNTZA
INVESTIGACIÓN VASCA EN SALUD
BASQUE HEALTH RESEARCH

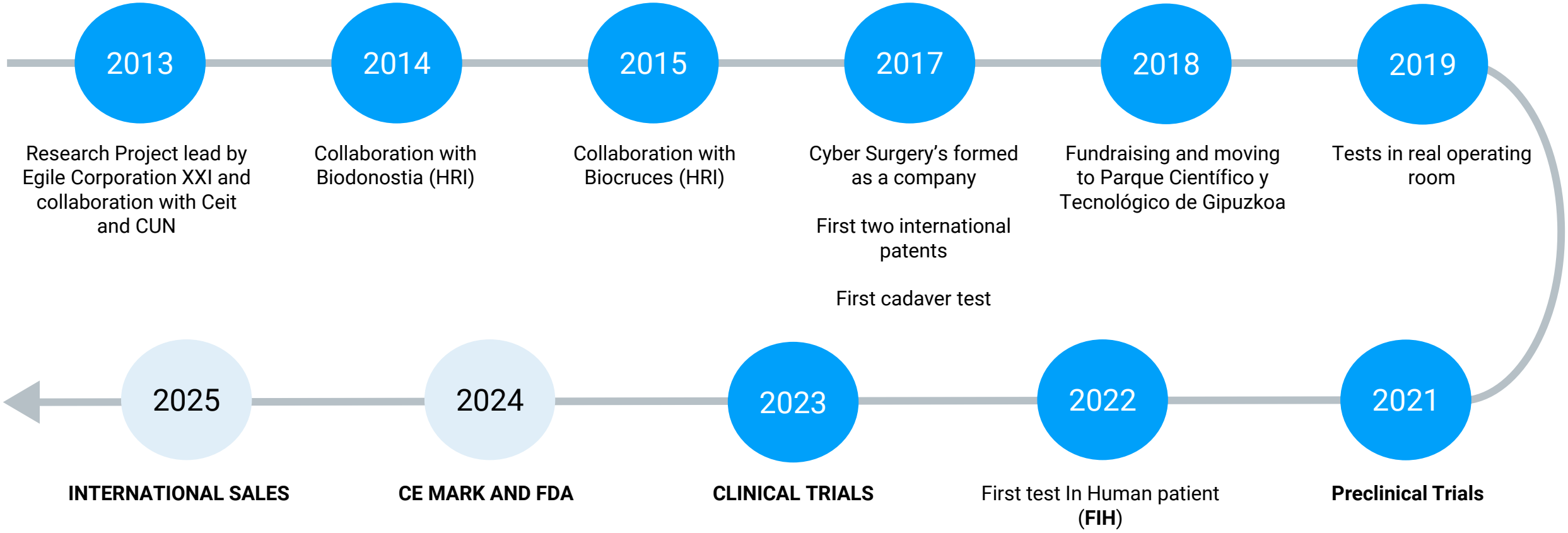


ENSAYOS CLÍNICOS FINALIZADOS!



https://cyber-surgery.com/news/cyber-surgery-has-successfully-finalized-clinical-trials-on-patients/

ROADMAP


2013
Research Project lead by Egile Corporation XXI and collaboration with Ceit and CUN
2014
Collaboration with Biodonostia (HRI)
2015
Collaboration with Biocruces (HRI)
2017
Cyber Surgery's formed as a company
First two international patents
First cadaver test
2018
Fundraising and moving to Parque Científico y Tecnológico de Gipuzkoa
2019
Tests in real operating room
2021
Preclinical Trials
2022
First test In Human patient (FIH)
2023
CLINICAL TRIALS
2024
CE MARK AND FDA
2025
INTERNATIONAL SALES

Comments

- Pro
  - Faster and simpler than Standard European funding
  - Defined for specific proposals. Example: RobotUnion, DIH-Hero, Esmera,…

- Cons
  - Usually, lower funding than other programmes
  - There is not a unified platform to know this opportunities

A great option for funding the R&D!

CYBER SURGERY