

Welcome

# AUTOMATIC SAMPLING OF PATHOGENS

ROBOTICS AND AI MERGED INTO AN AUTONOMOUS DEVICE



Lifeline  
Robotics

# COVID-19 IMPACTS

Economic and Social Disruption

**Global costs:  
\$23 trillion**

**Global cases:  
+505.291.086**

**\$500bn loss in  
the aviation  
industry**

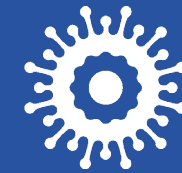
**Border closures,  
trade restrictions  
and confinements**

**255 million full-  
time jobs lost**

**88-115 million  
have fallen into  
extreme poverty**

**67% of people  
have increased  
levels of stress**

# Why not Manual swab testing?



Frontline healthcare workers have a 3x higher rate of infection due to the exposure of contamination



Poor working environment with labour-intensive and monotonous procedures leads to worker fatigue



Intra-performer variability leads to low sample quality and 30% false negatives



Difficult to scale manual setup for continuous and effortless global monitoring

**SOLUTION:  
CAREEBOLLRSI**

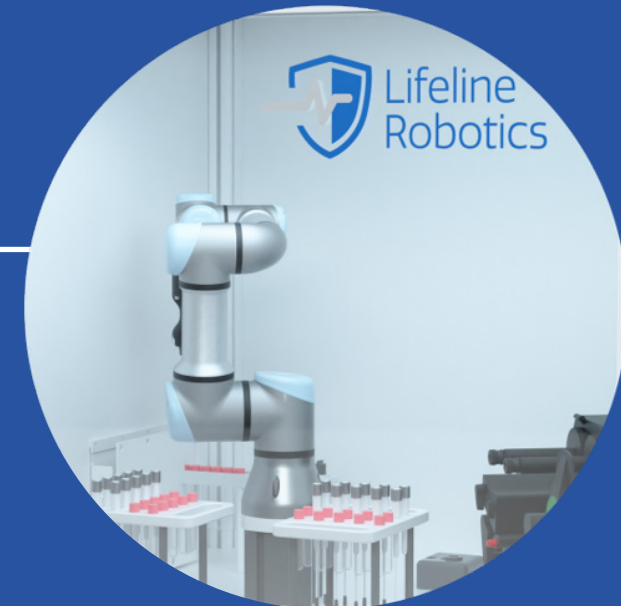
**Fully automatic robotic process**



**Sampling**



**Handling**



**Consistent & high test quality**

**Labelling**

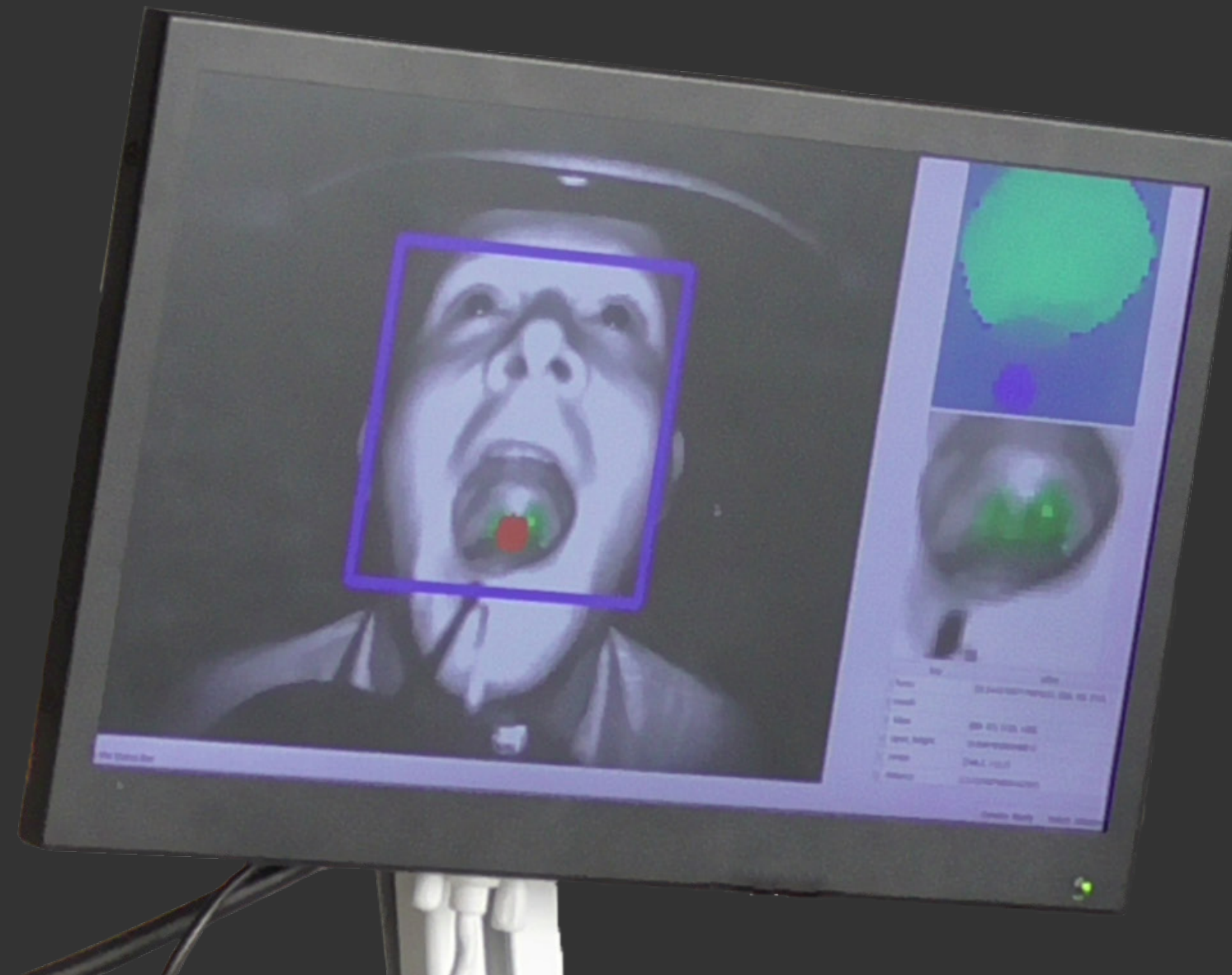


**Pandemic preparedness  
by readily available  
monitoring**

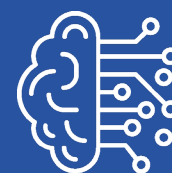
**Ongoing screening of  
communicable diseases for  
public health data and for  
vaccine development**



# TECHNOLOGY



**Tool:** Invented to safely, gently and efficiently collect a swab sample from a human throat. *Patent pending*



**AI:** Optimized with key variables and feature selections to secure high-quality sampling.



**Dataset:** Strong dataset with great variability enabling algorithm development towards high efficacy.



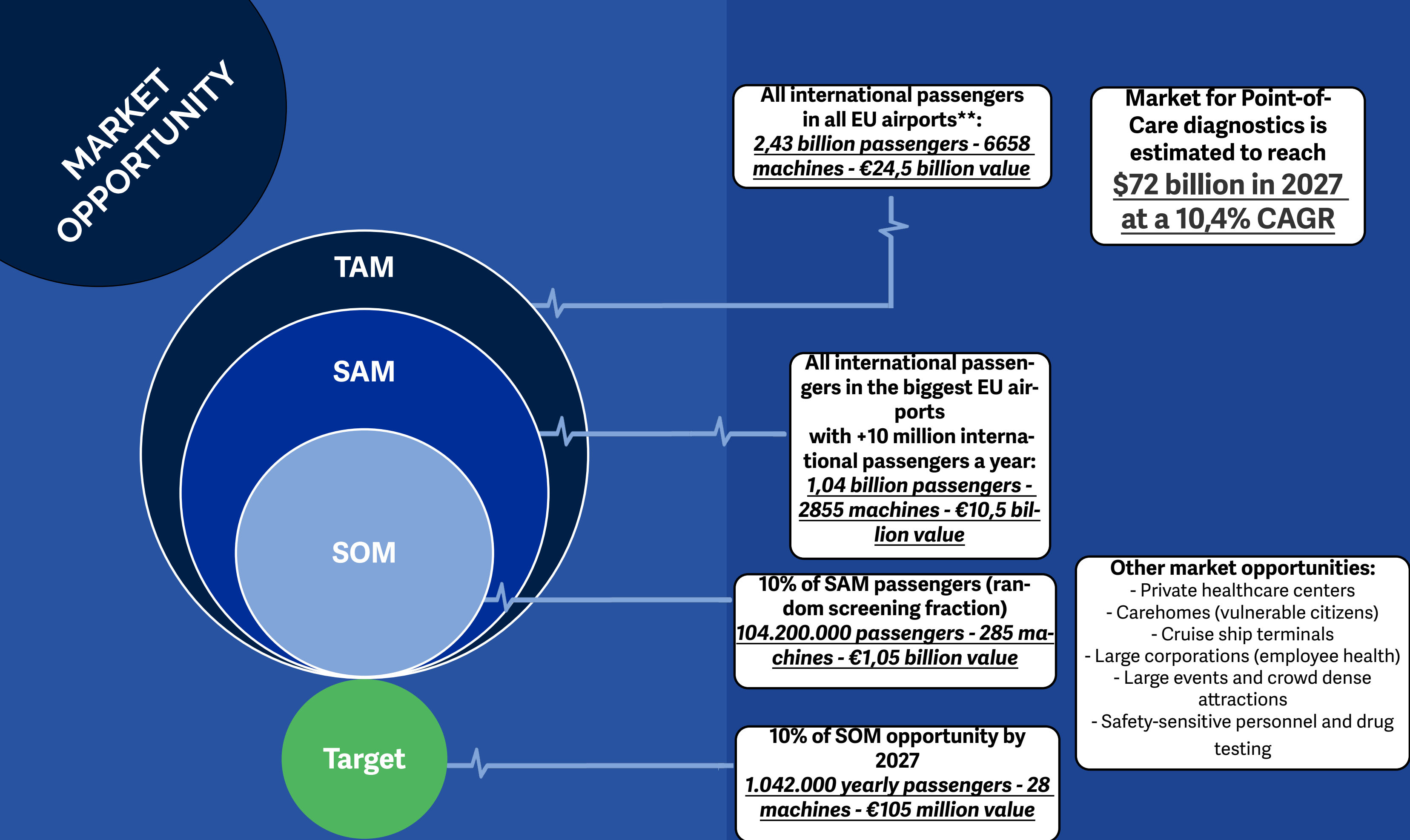
# BUSINESS MODEL

- Target customers are high-throughput airports with the need and ability to extend security measures for health purposes using new technology
- Service business model
  - ▶ Lease of machine for €36.000 yearly
  - ▶ Pay-per-sample fee of €10 (reimbursement scheme with EU government)
- Capable of collecting 1000 samples a day

Sources: <https://www.aarp.org/health/conditions-treatments/info-2020/understanding-coronavirus-test-results.html>, <https://www.who.org>





























































Note: \*\* Global market opportunity are not expressed as TAM due to different regulatory systems

Direct Competitors

	Lifeline Robotics	Brain Navi: NSR	Biobot Surgical: SwabBot	Mahmoud El-Komy: Cira 03	Lingcai	V. Karthi	KIMM	Franka Emika: SR-NOCS	Tsinghua University
Country	Denmark 	Taiwan 	Singapore 	Egypt 	China 	India 	South Korea 	Germany 	China 
Swab method									
Machine vision									
Artificial intelligence									
Fully Automatic									
MDR compliant									



TRACTION

Investments —



Programs —



Grants —



Awards and Nominations —



Media —



# CORE TEAM The Crew



## **CEO**

Problem-finder and problemsolver by nature but educated with a Master's degree in Product Development and Innovation. In charge of developing the company by securing the right partnerships, funding and opportunities. Driven by the cliché of making a difference in the world.



## **Business Development Manager**

15 years of C-level experience within medical devices, with direct responsibility for regulatory affairs, clinical trials, product development and fundraising. Founded a MedTech company in the glucose sensing diabetes field in 2006 and grew the company from 5 employees to 35 over 15 years in roles as R&D engineer, CTO and CEO. Advisor to a number of medical device startups.



## **Technical P.O.**

Curious engineer with a Ph.D. in Robotics. Several years of experience in the industry followed by working in his own start-up built around one of his inventions. Based on his mixed experience, he was headhunted for Lifeline Robotics, and are now in charge of all things technical.



## **QA Specialist**

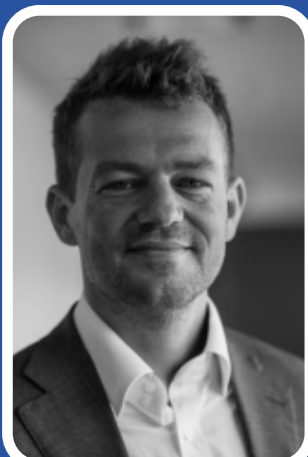
Passionate about Quality Assurance, especially developing and maintaining the right protocols for optimal procedures within the company. Also in charge of all things social in the office from arranging team building events to daily competitions for social stimuli. Eager and skilled at welcoming new people to the team no matter their professional backgrounds or language preference.



## **QA/RA Manager**

Regulatory expert in charge of clinical trials and certification as a medical device company. Experience from large companies, such as Carlsberg and Orifarm, but latest from RSP Systems, a disruptive SMV, as the Lead Clinical Trials Manager.

# BOARD OF DIRECTIONS



**Co-founder & Board Member:  
Esben Østergaard**

Robotics visionary and industry leader. Founder of Universal Robots and driving force behind the development of collaborative robots.  
Also co-founder og Re-invest Robotics.



**Co-founder & Board Member:  
Søren Stig**

Investor, mentor and social entrepreneur in impact driven purposes and goals.  
Former Chief Sustainability Officer af Maersk Line.



**Chairman of the Board:  
Helge Munk**

Founder of one of the biggest IT successes on Funen and with multiple exits to his name.  
A dedicated and respected Business Angel with the spirit of an entrepreneur.



**Co-founder & Board Member:  
Björn Christer Erik Bergquist**

General partner at Norrsken Impact, Accelerator and former COO & CFO  
-Norrsken Foundartion



**Board Member:  
Henrik Bindslev**

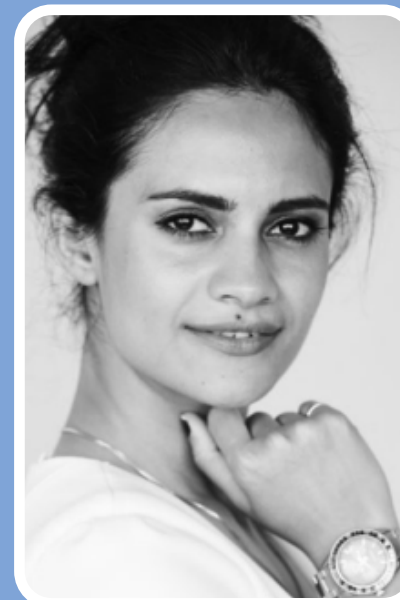
Dean of the Faculty of Engineering at University of Southern Denmark.  
Has a Doctorate in Plasma Physics and passionate about high-tech start-ups.

# ADVISORS



**Advisor:  
Alexander Egeberg**

Dr. Med. at Gentofte Hospital in Copenhagen. He also holds a postgraduate degree in economics from Copenhagen Business School, focused on health economics and public health. He has extensive knowledge in publication, planning and clinical trial designs, including pivotal trial and explorative/post hoc analysis from phase 1 to 4 studies



**Co-founder, Vice-chair and Advisor:  
Richa Hallundbæk Misri**

An expert in Marketing and Communications, previously leading the efforts of key manufactures such as Universal Robotics and the Hager Group. She is value-driven and authentic in her every move with an unique cross-culture awariness from a decade of inernational markets and relationships.  
Richa focuses on the commercialization of technology and bringing innovative ideas to market that align with the UN SDGs



ASK

**Seeking €1 million in equity for 18 months of operation and growth**

**Ideal investor:**

**Experience in bringing novel technology with new market applications to market, preferably medtech devices.**

**Understanding of the timeline and demands related to developing and bringing medical devices to market**

**Experience and/or network opportunities within exit strategies for medtech company**

**1.35% towards technical R&D**

- Development of custom mechanical movement
- Development of automatic hygiene
- (Re)development of sampling preparation processes

**2.35% towards technical RA/QA/CO**

- Preparation for regulatory approval
- Running clinical trials
- Continuous data gathering

**3.15% towards staffing**

**1 AI-lead employee**

**1 business development/sales employee**

**4.15% towards business development/sales**

- Client meetings
- Conferences



**Lifeline  
Robotics**

**THANKS FOR YOUR ATTENTION**

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