



HEALCERION

Company Introduction

Presented by Dr. Ryu

Agenda

- 1. Brand Story**
- 2. Board Members and Advisors**
- 3. Development Background**
- 4. Market Status of Portable Ultrasound Device**
- 5. Core Competitiveness**
- 6. Appendix**



Brand story

SONON is going to meet you.
It will go to the patient's side for faster and better healing,

From our belief that the ultrasound device should have done it, we made SONON, the wireless one, for the first time.

The start of SONON is now changing the way that's been tied up for the last 70 years to its way.

The world's most free ultrasound device.
Coming to you, Now.

SONON

Coming to you, Now

| Members



Benjamin Ryu, MD

CEO



Education

Seoul National University/ Physics, Electronic Engineering
Gachon University College of Medicine Graduate School(MD)
KAIST Neuroscience Ph.D course



Experience

CEO, Healcerion Co. Ltd (current)
MD, Emergency Room/ Chung-goo Sungsim Hospital (2013)
MD, Diagnostic Center/ Korea Medical institute(2010)
CTO, IT Magic (2009)

One of the final astronaut candidates from South Korea for a Soyuz mission (2008)



Anakin Choung

CSO

Development and planning of IT devices and services such as cellular phones and DVR over 20 years



Peter Lee

CTO

Expert of hardware and software of ASIC and ultrasound device



Jin Kim

CMO/COO

Over 20-year experience in pioneering new medical fields and implant

| Advisors



Gachon Uni. Gil Medical Center

Jeong Wook Jin, MD, PhD

Cardiology / Head of Gachon Cardiovascular lab
Advisor of portable ultrasound diagnostic device
Advisor and co-development of portable echocardiographic device



Ajou Univ. Hospital

Hong Ji Man, MD, PhD

Neurology / Stroke, Neuro-treatment
Advisor of smart patch system development for CBF measurement



Gachon Uni. Medical School

Kim Gwang Gi, PhD

Medical engineering / Medical imaging, Medical device, Medical Robot
Co-developer of AI using ultrasound images



Harvard Medical School/ Massachusetts General Hospital

Hyungsoon Im, PhD

Medical engineering / Medical imaging, Medical AI
Co-developer of AI using ultrasound images



| Development Background



Medical Device

+

Mobile IT

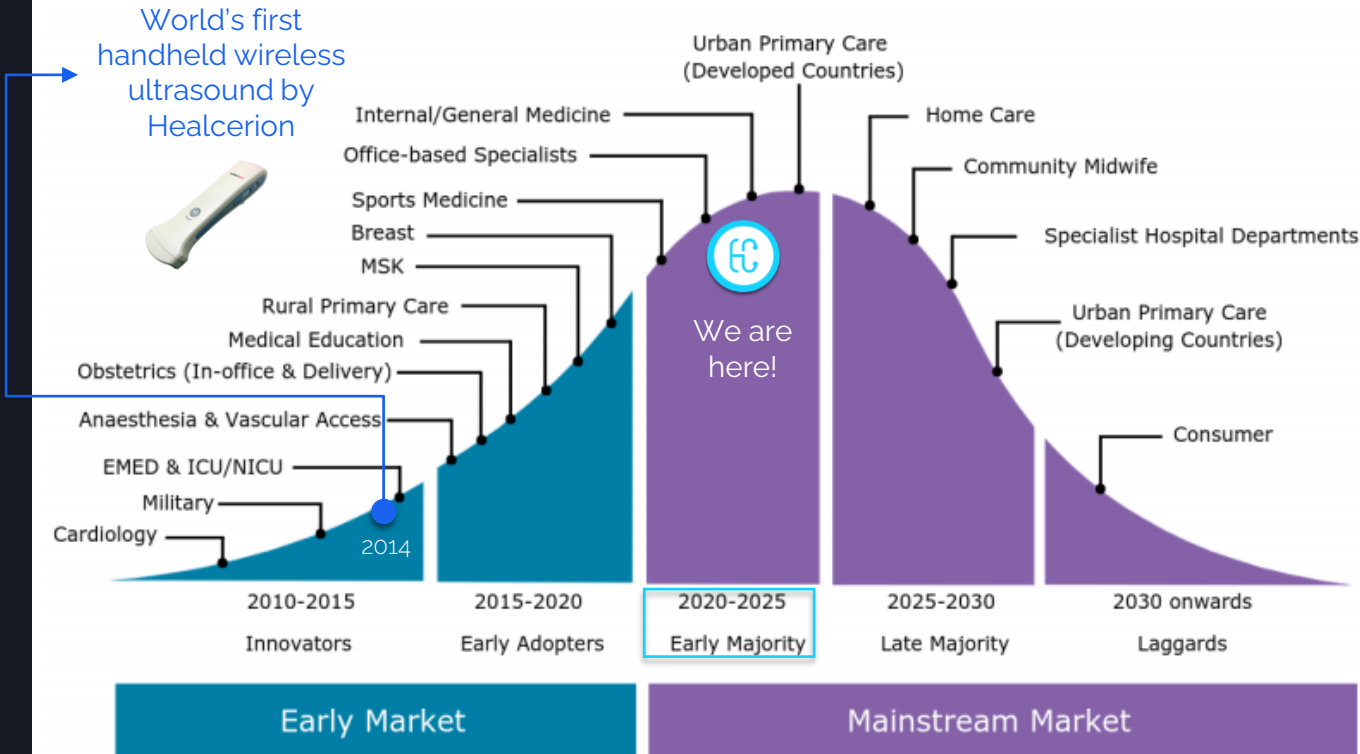


| Market

Portable ultrasound device market

"Expected to reach \$3,897M in 5 years with 13.6% CAGR"

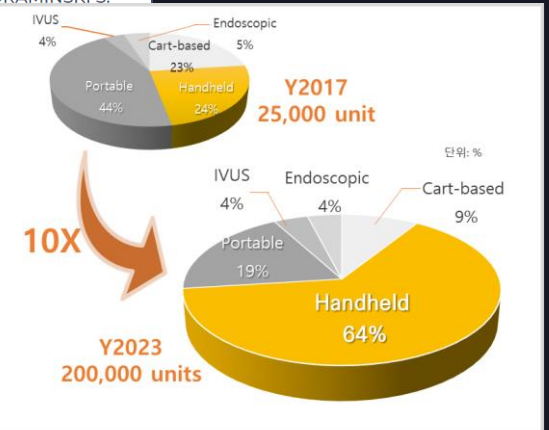
Technology Adoption Lifecycle for Handheld Ultrasound



Portable Ultrasound Market Size 2021 | To Exhibit 13.6% CAGR and projected to reach USD 3,897.0 million in 2026

GE Healthcare, Koninklijke Philips N.V., FUJIFILM Sonosite, Inc., ALPINION MEDICAL SYSTEMS Co., Ltd., Hitachi Ltd., Shenzhen Mindray Bio-Medical Electronics Co., Ltd., EDAN Instruments, Terason Corporation, CHISON Medical Technologies, Healcerion, Butterfly Network, Inc., Bard Access Systems Inc., Teknova Medical Systems Co., Ltd., Advanced Instrumentations, DRE Medical, DRAMIŃSKI S. A., Landwind Medical, Shenzhen AnaSonic Technology Co., Ltd., Accutome Inc., Zimme MedizinSysteme GmbH, Other Players

April 06, 2021 04:37 ET | Source: Fortune Business Insights



Source: Signify Research, 2019

Coming to you, Now

Source: Yole Report, 2018



Market fit

Various medical applications



Primary Care



Pain Control



Geriatric Treatment



Sports Medicine



Infants



Prenatal Examination



Physical Therapy

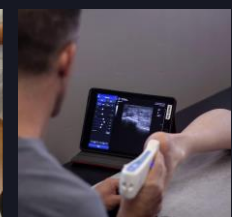


Ultrasound Education

Real field usages



Pain Control



Physical Therapy



Sports Medicine



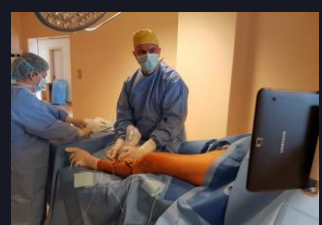
Vatenary



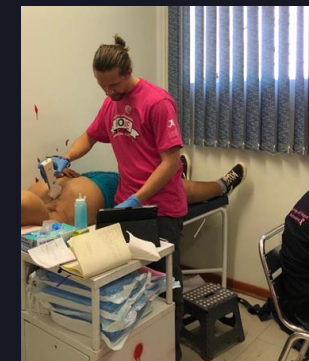
Aesthetics



Operation Rooms



Point-of-care (Prenatal exam)



International Research(Harvard Medical School)



Ultrasound Education



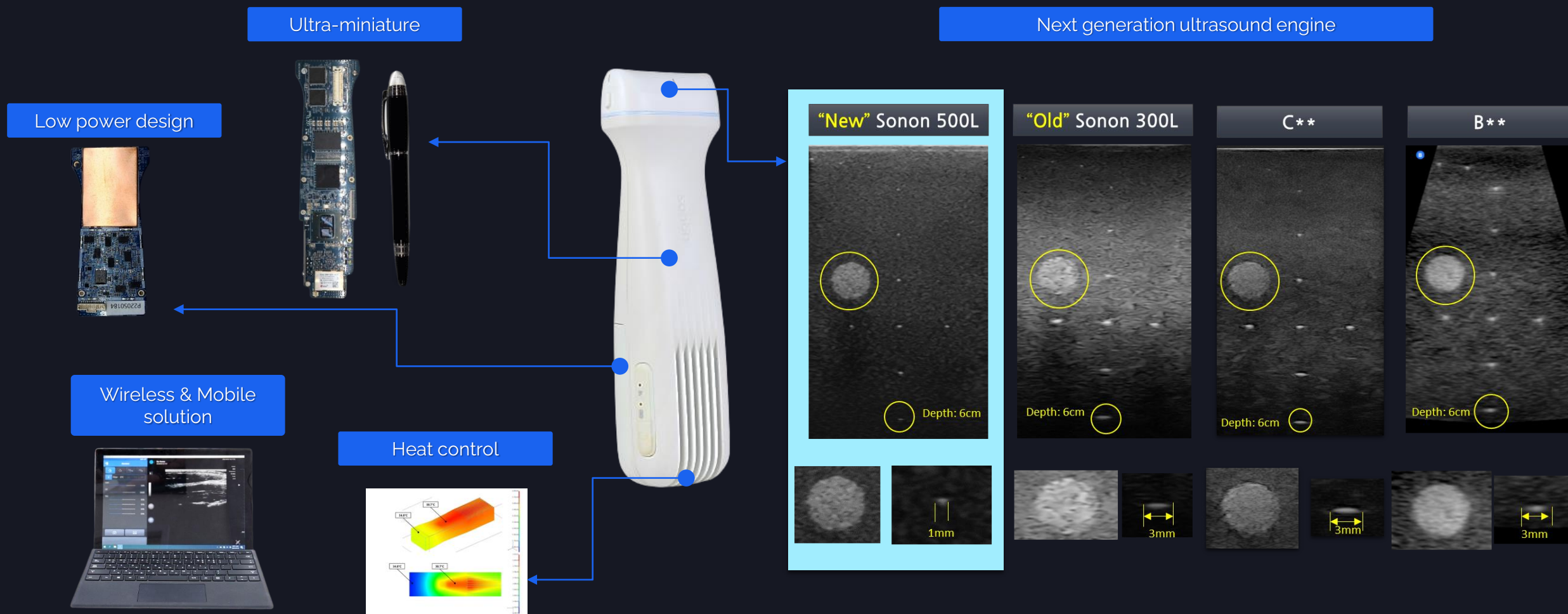
International Procurement



Coming to you, Now

| Core competitiveness

World's top-level of portable ultrasound technology

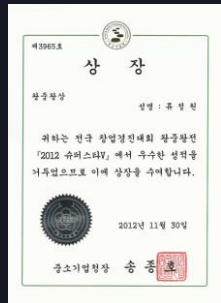


Coming to you, Now

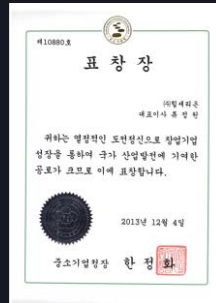
Core competitiveness



Domestic Awards



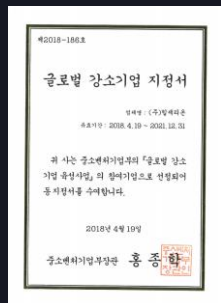
Grand Prize
Korea Startup Competition(2012)



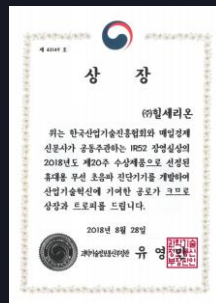
Award Certificate
SMBA(2013)



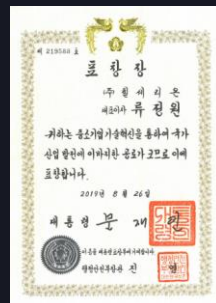
Award Certificate
MOTIE(2013)



Global Hidden Champion
SMBA(2018)



Award Certificate
IR52(2018)



Presidential Citation
(2019)



Global Awards



Gold Prize
iENA 2014



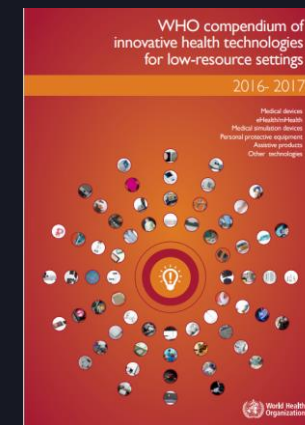
100 Global Winner
Red Herring(2016)



New Product Innovation Award
Frost & Sullivan(2016)



Clio Health Awards(2019)



Innovative health technologies for low-resource settings
2016-2017 WHO



| Core competitiveness

Holding **144** IPs on handheld ultrasound

● IP status in Korea



Patent		Design		Trademark		total	
Filing	Registered	Filing	Registered	Filing	Registered	Filing	Registered
2	23	0	21	9	19	11	63

● International IP status



Patent		Design		Trademark		total	
Filing	Registered	Filing	Registered	Filing	Registered	Filing	Registered
8	18	3	7	17	17	28	42



Register 2
File 5



Register 5
File 1



Register 7



Register 4
File 2



Appendix: International Cooperation



HEALCERION



UNITED STATES MILITARY ACADEMY
WEST POINT.



Center for the Study of Civil-Military Operations

Washington Hall, Room 5332
United States Military Academy
West Point, New York 10996

October 15, 2019

LETTER OF ENGAGEMENT

BETWEEN

CENTER FOR THE STUDY OF CIVIL-MILITARY OPERATIONS (CSCMO),
UNITED STATES MILITARY ACADEMY AT WEST POINT

AND

HEALCERION CO., LTD

CONCERNING

THE FUNCTIONAL RELATIONSHIP AND FIELDS OF COOPERATION BETWEEN ALL PARTICIPANTS
REGARDING RESEARCH OPPORTUNITIES

Preamble

Whereas

United States Military Academy at West Point ("USMA"), being the institution to educate, train, and inspire the Corps of Cadets so that each graduate is a commissioned leader of character committed to the values of Duty, Honor, Country and prepared for a career of professional excellence and service to the nation as an officer in the United States Army.

And

The Center for the Study of Civil-Military Operations established as a Margins of Excellence Activity at USMA for Research and Education.

And

Healcerion Co., Ltd. is a global provider of biotechnology (BT) products and services with core competencies and expertise in the research, development, acquisition, and manufacture of technologically advanced Portable Ultrasound Device(s). Healcerion is certified and registered government contractor and fully prepared to engage in new and emerging research and development (R&D) opportunities with USMA.

Healcerion desires to advance the R&D efforts of the following technologies:

"Portable Ultrasound Sonon-300C and Sonon-300L"

USMA and the Parties acknowledge they have a mutual interest and announce the intention to further enhance their relationship and cooperation in the near future to create synergies among the organizations and support knowledge development in the field of scientific research capabilities as appropriate to mutual aims and intentions.

Center for the Study of Civil-Military Operations

Washington Hall, Room 5332
United States Military Academy
West Point, New York 10996

October 15, 2019

Fields of Cooperation

USMA and the Parties have come to the following understanding regarding how each organization will cooperate in the areas of expertise as listed below:

1. Research Opportunities Discussions and Planning Sessions. USMA will host visitors on an agreed basis between interested organizations. Recognizing the limited time frames available in the academic calendar, the event shall in principle be planned not to disrupt ordinary education events or activities at West Point. USMA and the Parties will cooperatively develop the content of the discussions.
2. USMA recognizes the honorable offer to support the academic year with Subject Matter Expertise (SME) in selected events. Within its capabilities, USMA will seek to offer lecture support opportunities upon request.
3. Within capabilities, USMA will provide academic SME support to conferences upon request.
4. USMA will offer a working environment for visiting research members, including available workspace accommodation and the use of the infrastructure as authorized under the visitor's status.
5. The Parties and USMA will recognize and strengthen their partnership by mutual invitation and participation in conferences and other important events.
6. The Parties and USMA agree that Cooperative Research and Development Agreement maybe assigned to and executed by a different US Department of Defense agency.

Enhanced Dialogue

The intentions laid down in this Letter of Engagement form the basis for further dialogue and cooperation between USMA and the Parties. The purpose of this document is to express the intention of enhanced collaboration between the participants to guarantee progress, continuation, and sustainability in the relationship.

Signed in threefold in the English language.

United States Military
Academy, West Point

Healcerion Co., Ltd.
Georgia Corporation, USA

Healcerion Co., Ltd.
Republic of Korea Corporation.

Date: 10/15/2019
Mr. John Melkon
Director, CSCMO

Date: 10/15/2019
Dr. Rick I. Yi
President & CEO

Date: 10/15/2019
Dr. Jeongwon Ryu
President & CEO

Page 2 of 2



Appendix: International Primary Healthcare Enhancements

BILL & MELINDA
GATES foundation

Grand Challenges Programs

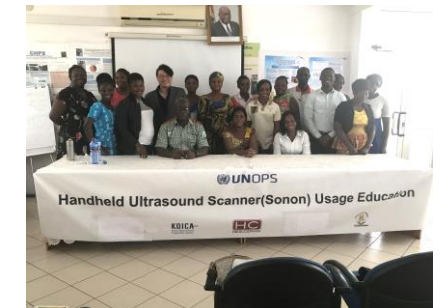
Promotion of Primary Health Outcomes in Vietnam Using Compact Ultrasound Device
Jeongwon Ryu, Healcerion Co., Ltd (Seoul, South Korea)

Dec 1, 2015

Training doctors of Vietnam healthcare center with Sonon



UNOPS procurement
(Ghana midwives training and supply)



Appendix: International Procurements



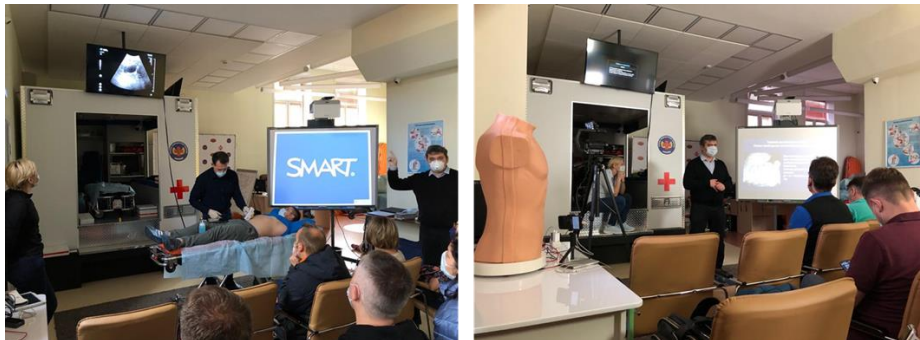
Supply to Moscow ambulance stations

- Sonon300Cx200units, Sonon300Lx100units, total 300 units supplied
- The first case we supplied to global market to respond to covid-19
- Expect early diagnosis of covid-19 and decrease the death rate by real-time screening of severity of covid patients using Sonon handheld ultrasound device



IN 2020:
60 SUBSTATIONS, 107 AMBULANCE POSTS, OVER 11000 EMPLOYEES

공식 웹사이트: <https://mos03.ru/eng/>



THE WORLD BANK
IBRD • IDA

The World Bank COVID-19 response projects

- Since the start of the COVID-19 crisis, the Bank Group has committed over \$157 billion to fight the impacts of the pandemic
- The Bank Group's support is helping over 100 developing countries save lives and detect, prevent, and respond to COVID-19
- Registered as a vender of ultrasound device to respond to covid-19 safely and effectively for diagnosis of pneumonia



Appendix: Healcerion in Press

"Healcerion & Israel technical cooperation, AI ultrasound device joint development" Expand funding and strengthen joint program

한국 공생 R&D 이동을 높이고 협력 프로그램 강화



한국과 이스라엘이 인공지능(AI) 기반의 초음파 자가 진단기인 '소노'를 새로운 형태의 유전자-세포 융합치료제를 공동으로 개발한다.

산업통상자원부는 5일 이스라엘 경제산업부 장관이 한국-이스라엘 산업연구개발협력 이사회를 열어 소노, 그리고 이사회 내용을 공동 연구개발(R&D) 과제 2건을 승인했다.

한-이스라엘 산업연구개발재단은 1999년 한-이스라엘 산업기술협력 협정 체결에 따라 공동연구개발기금을 관리하고 양국 기술협력 활동을 지원하기 위해 2001년 설립됐다.

이사회를 통해 기금으로 지원할 공동 R&D 과제를 심의·승인하고 양국 기술협력 촉진을 위한 주요 사안을 논의해 결정한다.

이날 이사회에는 한국 측에서 김상모 산업부 산업기술융합정책관을, 이스라엘 측에서 아미 아펠바움 경제산업부 수석과학관을 수석대표로 해 양국 이사진이 참석했다.

이사회 승인에 따라 한국 의료기기 기업 ㈜힐세리온과 이스라엘 AI 시스템 기업 온사이트메디칼(Onsight Medical)은 미래 원격의료 시장에서 현장 진단을 위한 AI 가이드 기반의 초음파 자가 진단기를 공동으로 개발한다.

"Healcerion, a gold miner in medical AI training data biz"



<류정원 힐세리온 대표가 휴대용 초음파 진단기 소노를 소개하고 있다. (사진=힐세리온)>

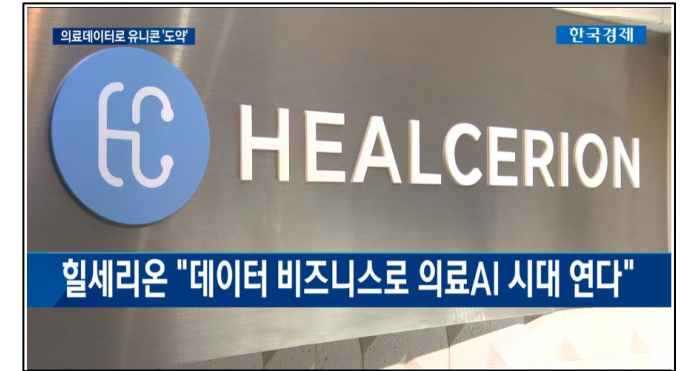
"의료 인공지능(AI)이 임상에서 유용하게 쓰려면 알고리즘만 잘 짜서는 안 되고 맞춤형 데이터로 성능을 향상시키는 것이 중요합니다. 선진국에서는 까다로운 규제와 높은 비용 때문에 의료 데이터 확보가 쉽지 않았죠. 개발도상국으로 눈을 돌려 합법적 방법으로 가명화된 데이터를 수집하려고 합니다. 21세기 석유는 데이터라면 힐세리온은 석유를 캐는 기업입니다."

류정원 힐세리온 대표는 의료 AI 개발에 있어 정제된 데이터 중요성을 이같이 말했다. 힐세리온은 '디지털 헬스케어 플랫폼(DHP)'을 구축하고 인도 등 개발도상국 병원과 협력해 의료 데이터 확보에 나섰다. 이를 통해 의료 AI 학습용 데이터 라벨링 사업을 본격화한다.

전자신문

2020.11.23

"Healcerion, opens a new era of medical AI by data biz"



매일경제 2021.07.05

"The first handheld ultrasound developer Healcerion, now evolving into AI-cloud based Healthcare Platform company"

류정원 힐세리온 대표

휴대용 초음파 진단기 '소노' 2014년 개발

출 하반기에 업그레이드 제품 출시

GE, 필립스 등 경쟁제품과 차별화

의료진 통한 초음파 이미지 플랫폼 구축 추진

AI-클라우드 통해 헬스케어 서비스기업으로 변신 추진

BIO Insight 2020.02.03



류정원 힐세리온 대표가 서울 구로디지털단지 본사에서 휴대용 초음파 진단기를 설명하고 있다. 힐세리온 제공

"Healcerion, win a contract to supply handheld ultrasound for covid-19"

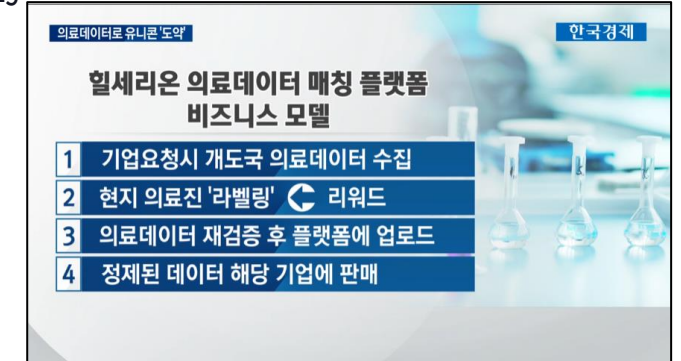
힐세리온은 러시아 정부가 진행한 신종 코로나바이러스 감염증(코로나19) 긴급 대응용 휴대용 초음파 진단기 입찰에서 최종 낙찰받았다고 23일 밝혔다.

이번 공급계약 물량은 ▲ SONON 300C 200대 ▲ SONON 300L 100대 총 300대 물량이다. 이달부터 7월까지 진행하며 규모는 총 100만달러(12억달러)다.

앞서 회사는 지난해3월 러시아 정부로부터 의료기기 인증을 받았다. 이외 국내, 유럽, 미국, 일본, 중국(인증 진행중), 사우디아라비아, 호주 등에서도 인증을 획득한 바 있다.

힐세리온은 러시아 정부 공급을 시작으로 지난 4월 UN기구 중 4번째로 규모가 큰 유엔프로젝트 조달기구인 UNOPS(The United Nations Office for Projects Services)에서 발주한 COVID-19 휴대용 초음파 입찰에 참여했다. 또 World Bank (세계은행), ADB (아시아개발은행) 등 다수의 국제기구 긴급 입찰과 터키, 브라질, 이집트 폴란드 등의 정부조달과 국립병원 등에서도 성과를 기대하고 있다.

매일경제 2020.Jun.23



한국경제TV 2020.Jan.07

Appendix: Sonon in Media



K-drama, D-day (JTBC)



K-drama, Cardiothoracic surgery(SBS)



TECH TUESDAY(Fox TV)



Prof. Lee Kuk Jong & KT 5G (KT YouTube)



HEALCERION

www.healcerion.com

Contact: info@healcerion.com