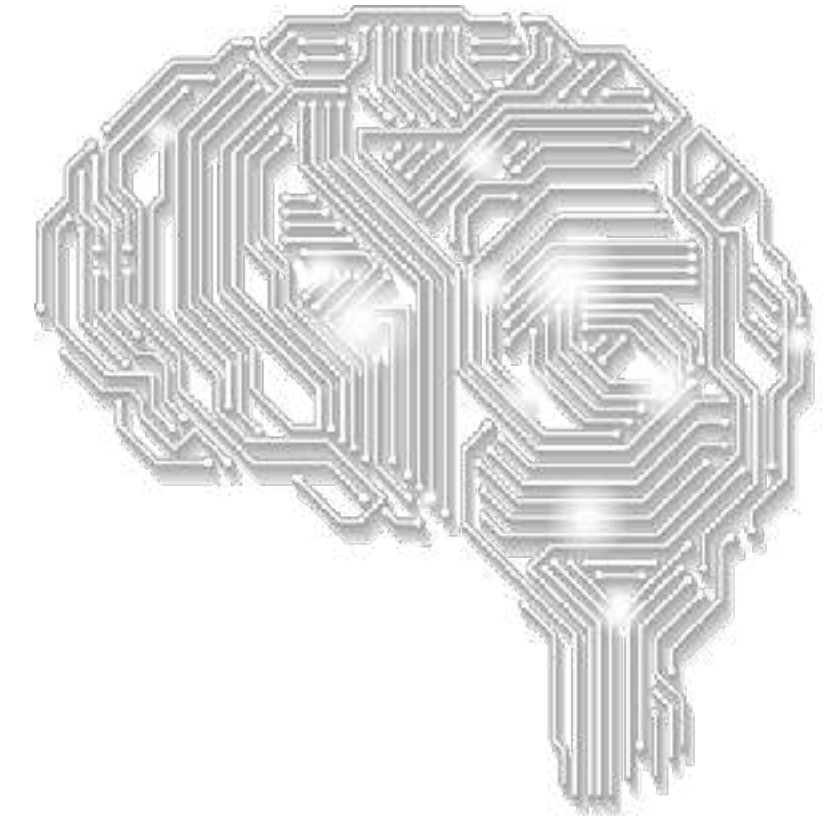




**CYBERDYNE**



# Consolidated Financial Result Briefing for Fiscal Year ended March 31, 2023

CYBERDYNE, Inc.  
May 15, 2023

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【Medical】Cybernetics Treatment

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# Consolidated financial statements

# Consolidated financial results (IFRS)

## Year-on-year comparison for the fiscal year ended March 31, 2023

**Revenue: 3,289M (+53% YoY)**  
**Operating profit: ¥-1,145M (decreased 299M YoY)**  
**Final profit: ¥-268M (Improved by 194M YoY)**

(Unit: Millions of yen)

	FY2021 Q1-Q4	FY2022 Q1-Q4	+/-	+/-%
Revenue (Gross profit)	2,150 (1,462)	3,289 (1,791)	+1,138 <sup>*1</sup> (+329)	+52.9% (+22.5%)
Operating profit	-868	-1,145	-277 <sup>*2</sup>	—
Profit before tax	-379	53 <sup>*3 *4</sup>	+433	—
Profit attributable to owner of the parent	-492	-298 <sup>*5</sup>	+194	—

**\*1 Increase in revenue (1,138M) (YoY)**

Rental +209M (HAL outside Japan)  
 Service +897M (Treatment service by RISE Group in USA)

**\*2 Increase in SG&A (619M) (YoY)**

SG&A expenses of consolidated subsidiary acquired  
 through M&A +636M

**\*3 Investment securities 1,283M (Net)**

Finance income (gain on valuation) +1,248M  
 Finance expense -165  
 Gains related to CEJ +199M

**\*4 Other -209M (Net)**

Exchange loss -15M  
 Investment accounted for using equity method -195M

**\*5 Corporate tax 446M (YoY)**

Tax effect on valuation gains 437M

# Consolidated financial results (IFRS)

## Performance trends

**【Q4 results】 10% increase from Q3**

(Unit : Millions of yen)

Consolidated statement of profit or loss	FY2021	FY2022					Year on Year	
	Q1-Q4	Q1	Q2	Q3	Q4	Q1-Q4	+/-	+/- %
<b>Revenue</b>	<b>2,150</b>	<b>751</b>	<b>791</b>	<b>831</b>	<b>915</b>	<b>3,289</b>	<b>+1,138</b>	<b>+52.9%</b>
Cost of sales *	688	294	323	440	440	1,498	+809	+117.6%
<b>Gross profit</b>	<b>1,462</b>	<b>457</b>	<b>467</b>	<b>391</b>	<b>475</b>	<b>1,791</b>	<b>+329</b>	<b>+22.5%</b>
R&D expenses	713	151	182	161	241	735	+22	+3.1%
Other SG&A *	1,787	535	562	551	** 757	2,406	+619	+34.6%
Other income/ expenses	169	51	12	13	127	204	+34	+20.4%
<b>Operating profit</b>	<b>-868</b>	<b>-178</b>	<b>-264</b>	<b>-307</b>	<b>-396</b>	<b>-1,145</b>	<b>-277</b>	<b>-</b>
Finance income/ expense	393	541	134	10	434	1,119	+726	+184.6%
Other	95	9	132	36	-97	79	-16	-17.0%
<b>Profit before tax</b>	<b>-379</b>	<b>372</b>	<b>1</b>	<b>-261</b>	<b>-59</b>	<b>53</b>	<b>+433</b>	<b>-</b>
<b>Profit attributable to owner of the parent</b>	<b>-492</b>	<b>241</b>	<b>27</b>	<b>-200</b>	<b>-366</b>	<b>-298</b>	<b>+194</b>	<b>-</b>

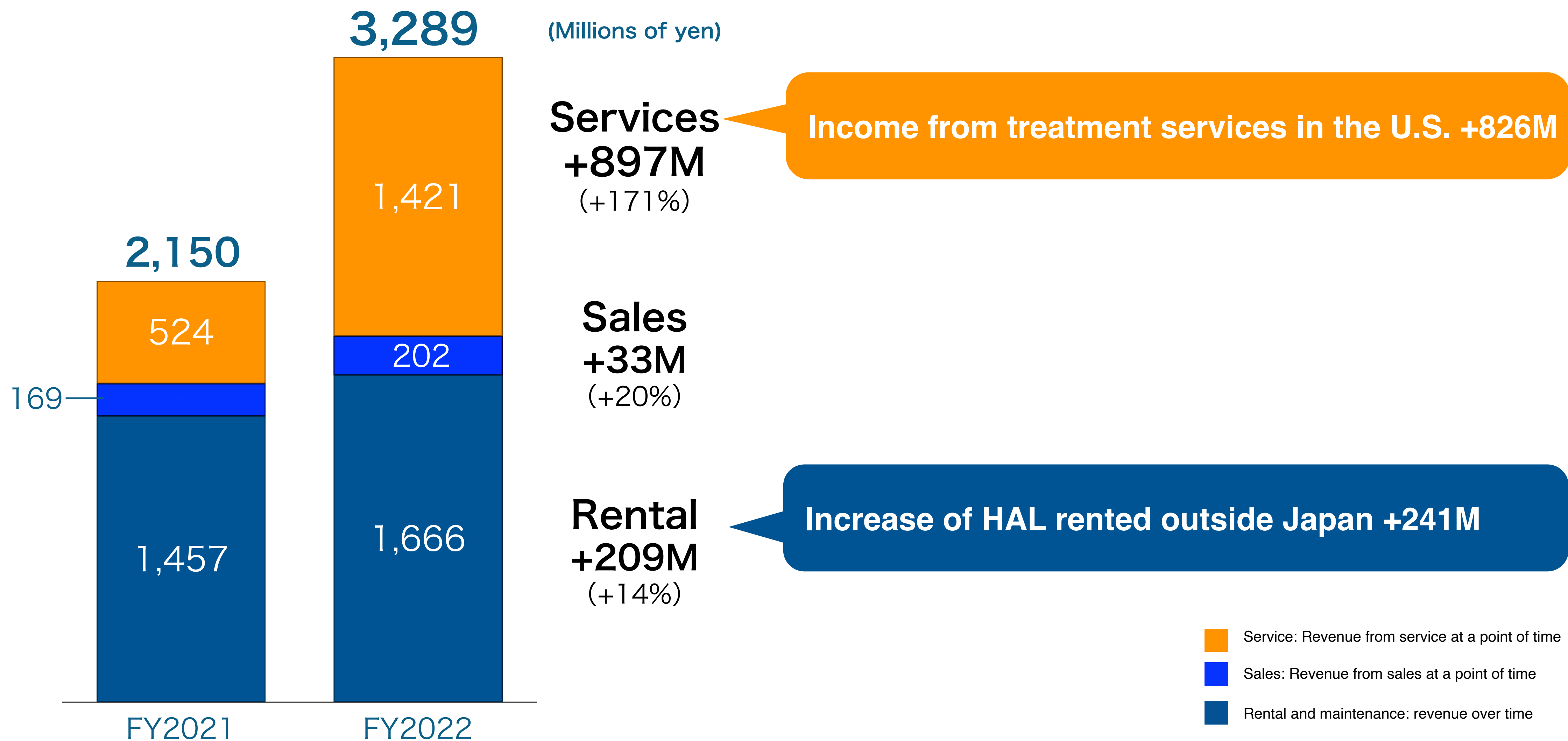
\* Transferred a portion of Other SG&A from FY2022Q1-Q3 to cost of sales due to a review of cost of services

\*\* Property tax 95M

# Consolidated financial results (IFRS) by types of transaction



**Increase service sales by acquiring treatment service locations in the U.S.**



# Changes of rental revenue by each products

## Growth of Medical Lower Limb Type (overseas) and Single Joint Type (domestic) rentals

(Unit: Millions of yen)

Product classification		FY2021 Q1-Q4	FY2022 Q1-Q4	(Ratio)
For Hospitals (improving function)	HAL Lower Limb Type (Medical)	584	692 *1	42%
	HAL Lower Limb Type (Non-medical)	188	173	10%
	HAL Single Joint Type	132	180 *2	11%
Care support and well-being	HAL Lumbar Type	251	238	14%
Labor Support	HAL Lumbar Type	98	65	4%
Cleaning/disinfection/transportation robot		51	53	3%
Other		174	265	16%
<b>Total</b>		<b>1,457</b>	<b>1,666</b>	<b>100%</b>

**\* 1 HAL Lower Limb Type (Medical)**

The main factors of the increase in sales were from APAC and Europe

**\* 2 HAL Single Joint Type**

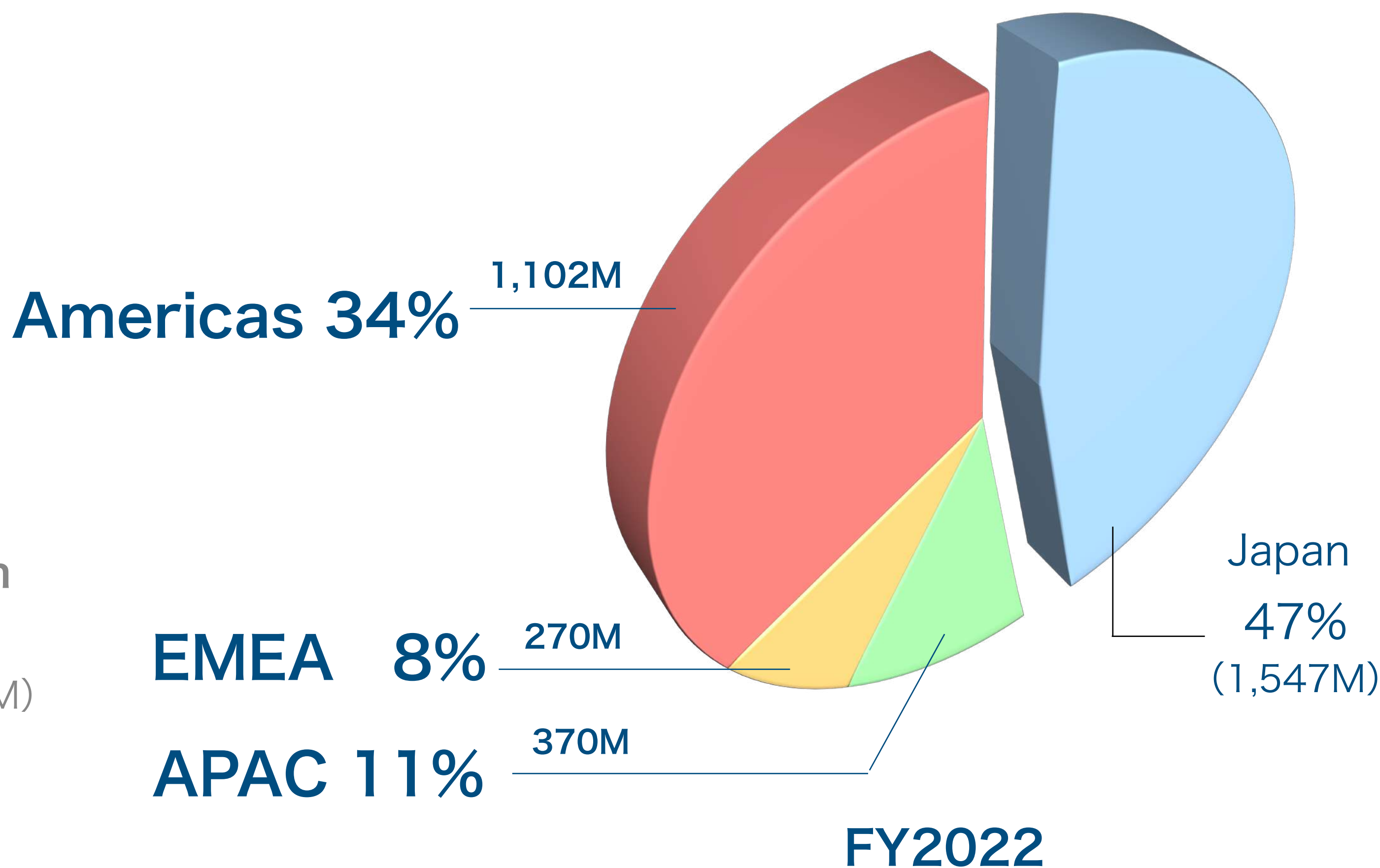
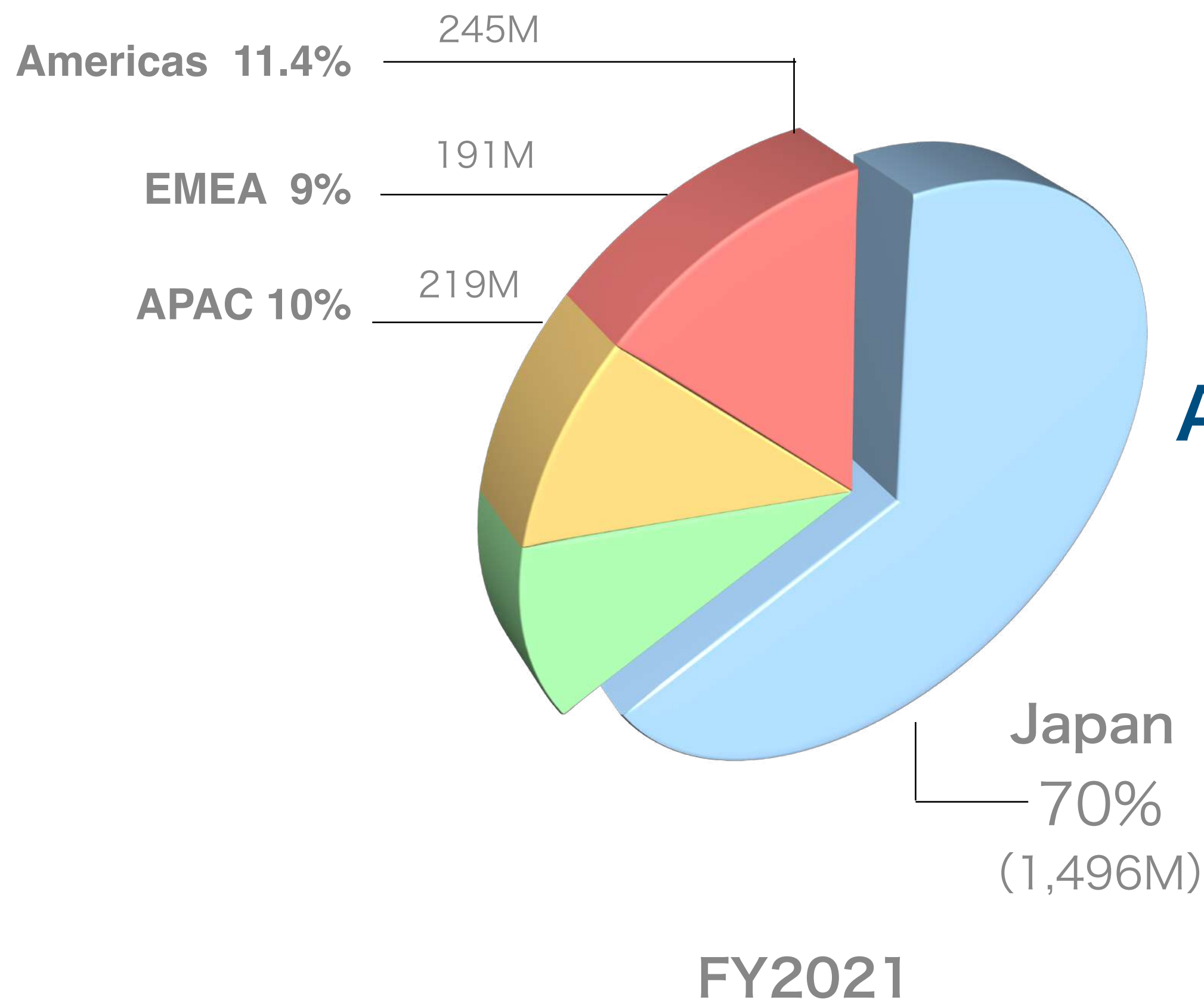
The main factors of the increase in sales were Japanese hospitals

# Consolidated financial results (IFRS) by geographical region



**Significant increase of overseas sale +1,087M (30% to 53% of total revenue)**

- Significant increase in revenue due to the acquisition of treatment sites in the U.S.
- Increased sales in APAC 69% and EMEA 41%



Americas: North, Central and South America  
 EMEA : Europe, the Middle East and Africa  
 APAC : Asia-Pacific \* Revenue from Japan is stated separately



# Ref) by geographical regions and type of transaction

**Significant revenue growth in U.S. services and rentals in EMEA and APAC**

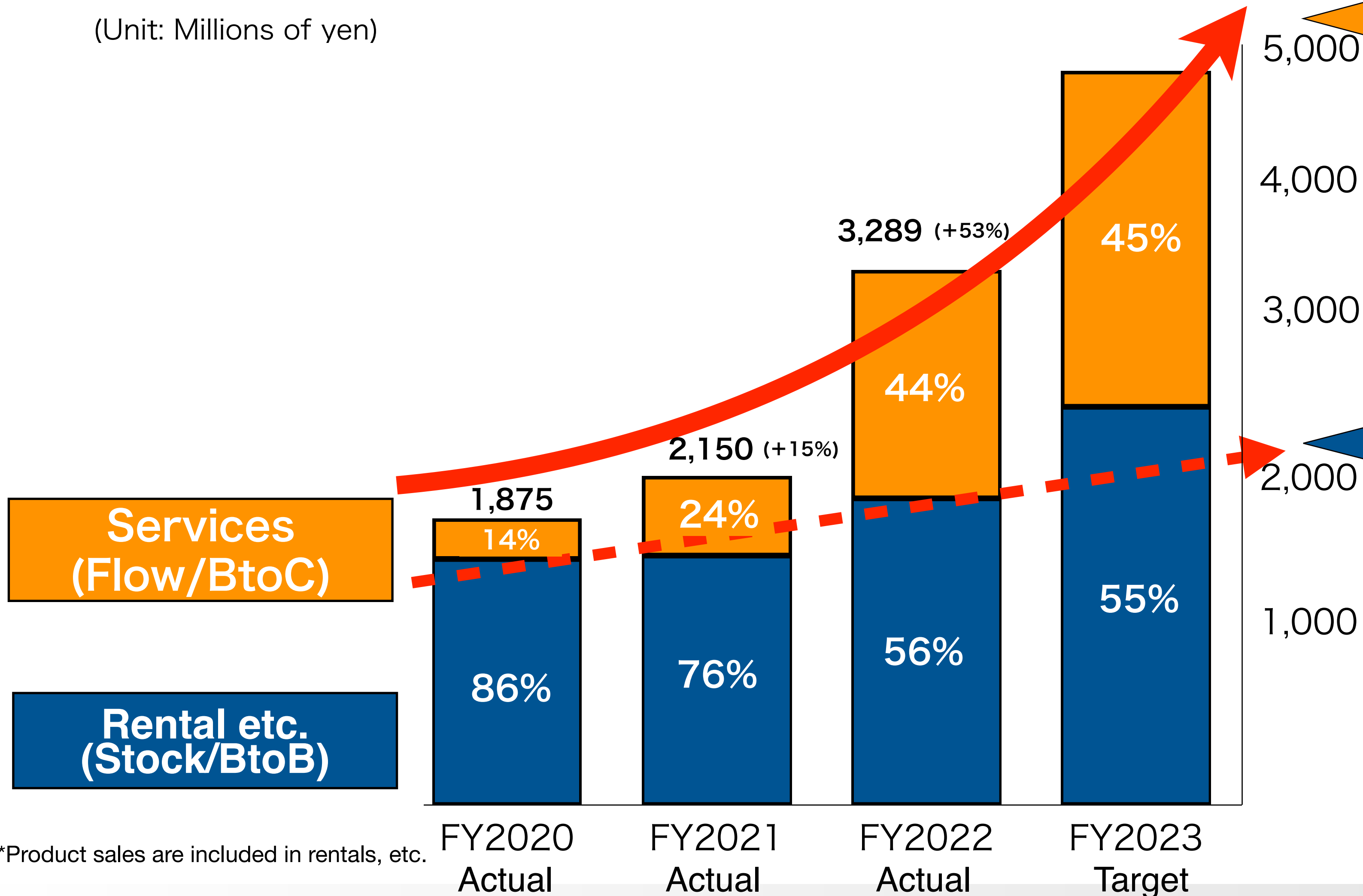
(Unit : Millions of yen)

FY2022 - Q1-Q4 (FY2021 - Q1-Q4)	Rental	Sales	Service	Total
Japan	<b>1,092</b> (1,124)	<b>158</b> (145)	<b>297</b> (227)	<b>1,547</b> (1,496)
Americas	31 (20)	<b>17</b> (0)	<b>1,054</b> (225)	1,102 (245)
EMEA	<b>204</b> (111)	0 (9)	67 (71)	270 (191)
APAC	<b>340</b> (203)	26 (15)	4 (1)	370 (219)
Total	1,666 (1,457)	202 (169)	1,421 (524)	3,289 (2,150)

# Profit Structure: Strategies by Business Composition for Sustainable Growth

**Aim for CAGR (compound annual growth rate) of 30-40%**

(Unit: Millions of yen)



## Expanding areas (Sales)

- Medical service for individuals (US)
- Healthcare service for individuals (JP)
- \*Utilize M&A

## Reinforcing business (Profit)

- Rental to medical facilities (APAC · EU)
- Rental to medical facilities in Japan

\*Product sales are included in rentals, etc.

# Outlook for achieving operating profitability

## Factors Contributing to the Increase in Operating Loss

- ✓ Upfront investment in new businesses through acquired subsidiaries (Upfront investment will continue in FY2023)
- ✓ Temporary delay in introduction of HAL at Japanese hospitals due to COVID-19

## Key points to achieve operating profitability

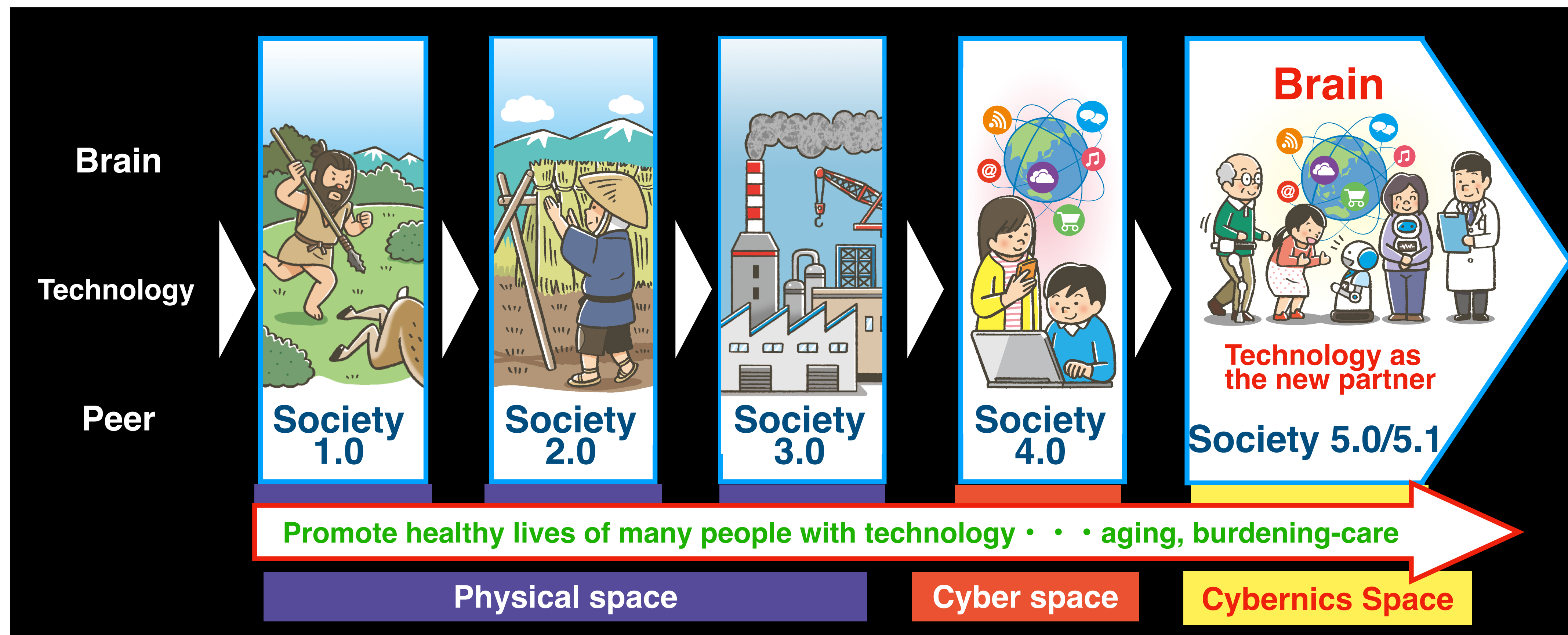
- ✓ Progress in the U.S. for medical, healthcare, and welfare services business
- ✓ Continued expansion of HAL rentals to Europe and Asia
- ✓ Medical device approval and insurance listing of stroke and spinal cord injury in Japan
- ✓ Other (expansion of cleaning/disinfection robot CL02, Vital Sensor “Cyvis” and commercialization of photoacoustic imaging device “Acoustic X”)

## **Outline of the business**

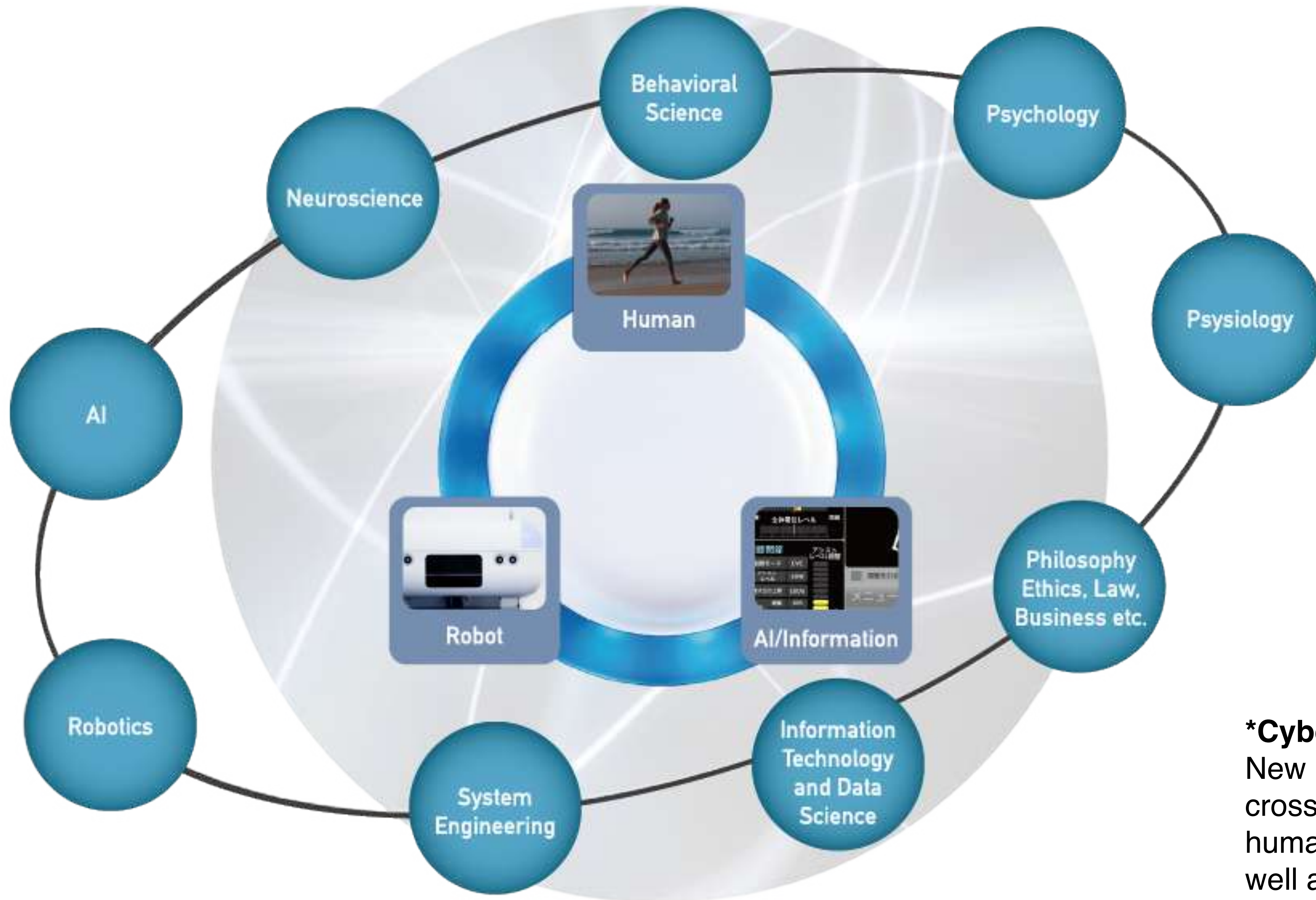
# Realization of Techno-peer Support Society, Where human and technology lives together and supports each other

## Promote innovation that “leaves no one behind”

Maintain and manage their health even in old age and exercise their long-cultivated abilities to the fullest even if they have a disability due to a decline in physical functions caused by disease, accident, or aging, they can live with a higher degree of independence.



→ Create “Cybernetics Industry”, a new industry that follows Robot and IT Industry

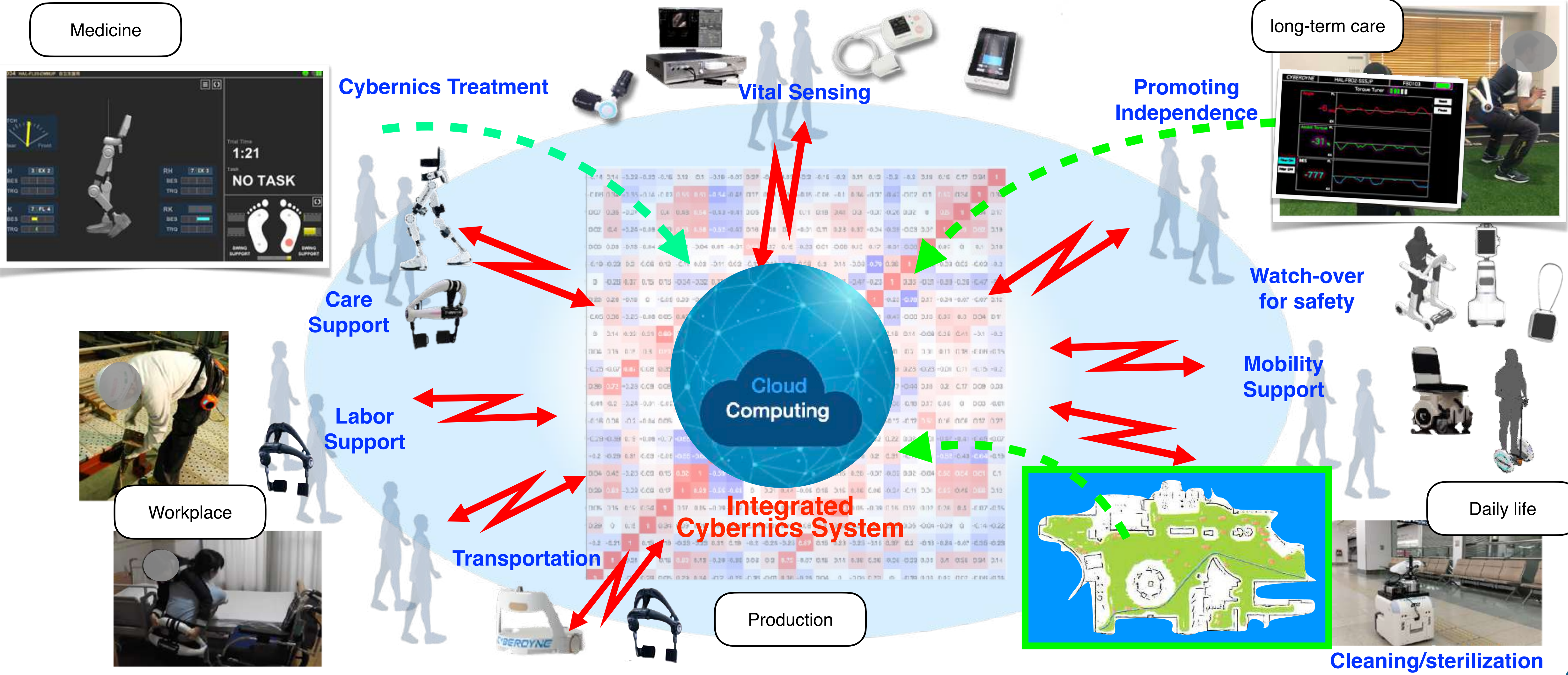


**\*Cybernetics:**

New academic field that fuses and combines cross-disciplinary fields. It is centered around humans, robots, and information systems, as well as other fields.

# Integrated Cybernics System : Fusion of "Human" + "Cyber/Physical Space"

Realization of physical and informational interaction with 'people' to solve various issues in a super-aging society  
 Create a "Cybernics Industry" for people and society, focusing on medical care, welfare, daily life, workplace, and production



# Innovation in the integrated space of “Human” + “Cyber/Physical Space”

## Care

**Medical HAL Lower Limb Type**  
Induce improvement of ability to walk, through Cybernics Treatment

**Medical HAL Single Joint Type**  
Flexible product that can be used for intensive rehabilitation of elbow, knee and ankle joints

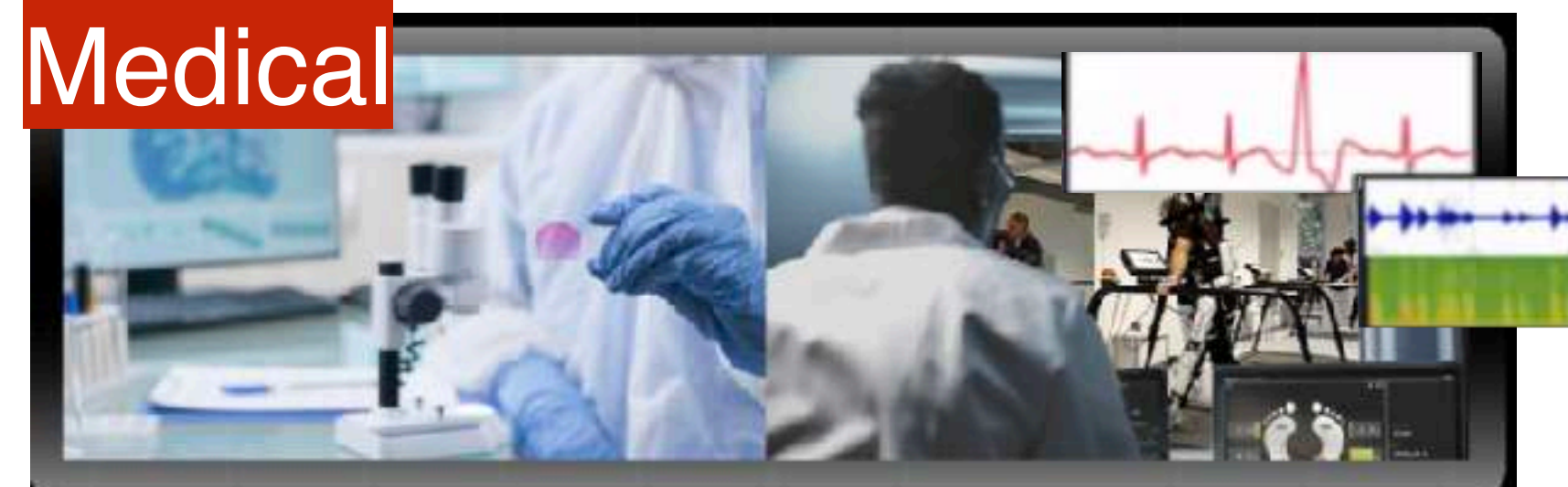
**Cleaning Robot**  
Autonomous robot that takes cleaning and disinfection to the next level

**HAL Lumbar Type for Well-being**  
A product that supports both caregivers and care-receivers.

**Transportation Robot**  
Autonomous robot that can carry heavy loads on its own

**Cyln for Living Support**  
Helps communication of patients in severe condition where they cannot speak or move

## Medical



## Care



## Daily life



## Workplace



## Hospital

**Medical HAL Lower Limb Type**  
Induce improvement of ability to walk, through Cybernics Treatment

**Medical HAL Single Joint Type**  
Flexible product that can be used for intensive rehabilitation of elbow, knee and ankle joints

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## Workplace

**Medical HAL Lower Limb Type**  
Induce improvement of ability to walk, through Cybernics Treatment

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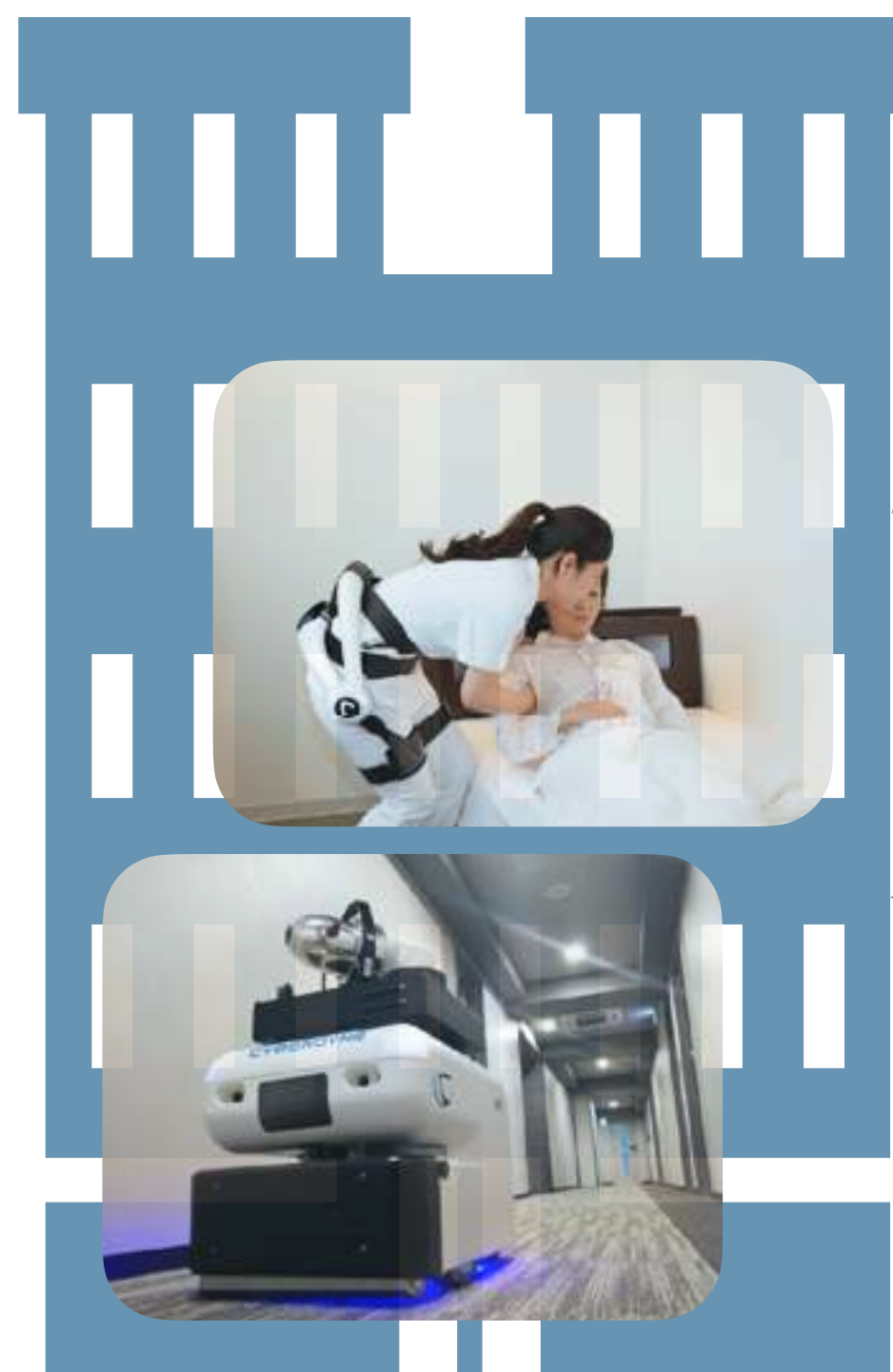
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Autonomous robot that can carry heavy loads on its own

**Cyln for Living Support**  
Helps communication of patients in severe condition where they cannot speak or move

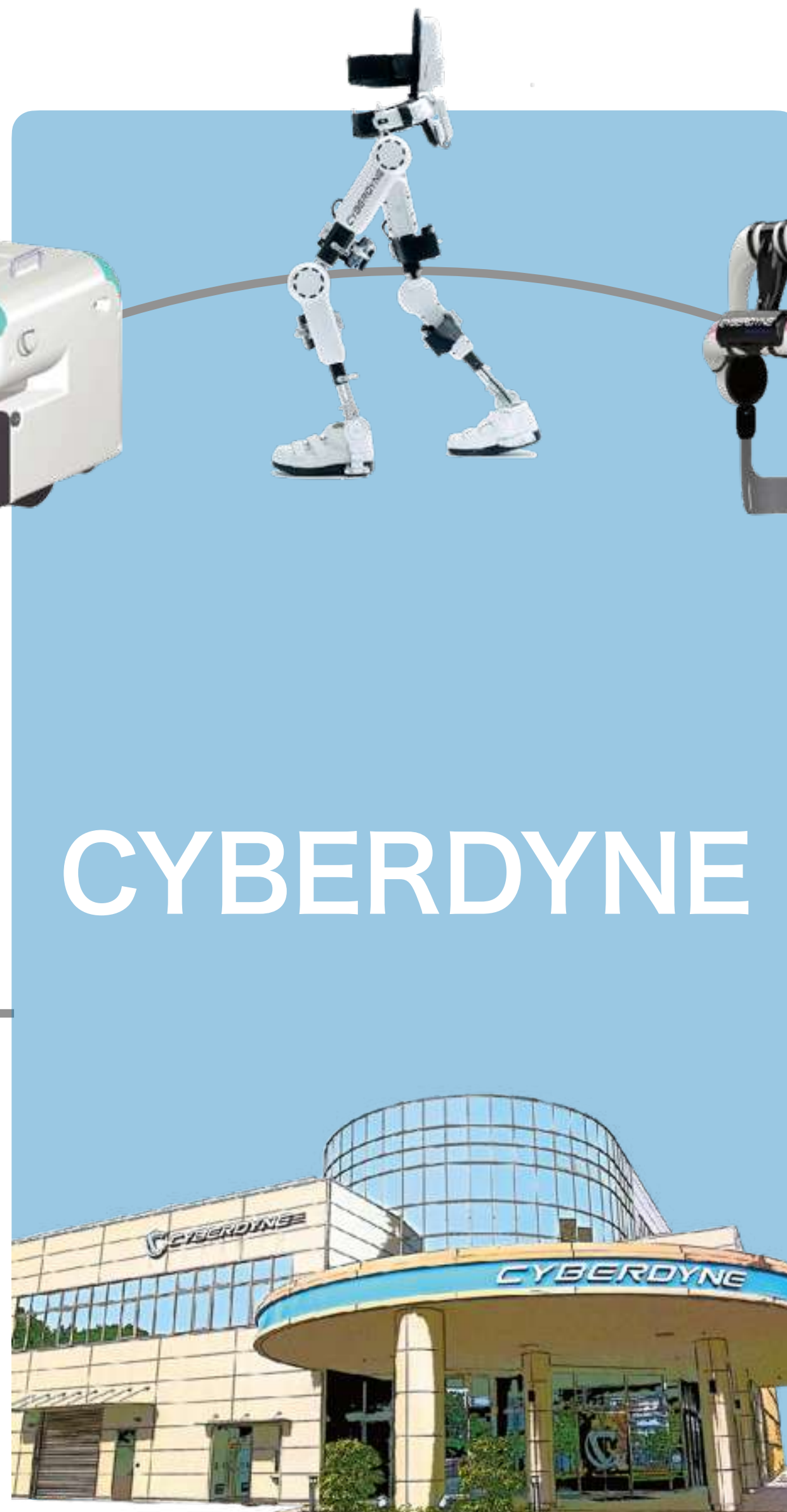


# Main business model and revenue structure

## For professional (B to B)



Rental \*1



## For individuals (B to C)



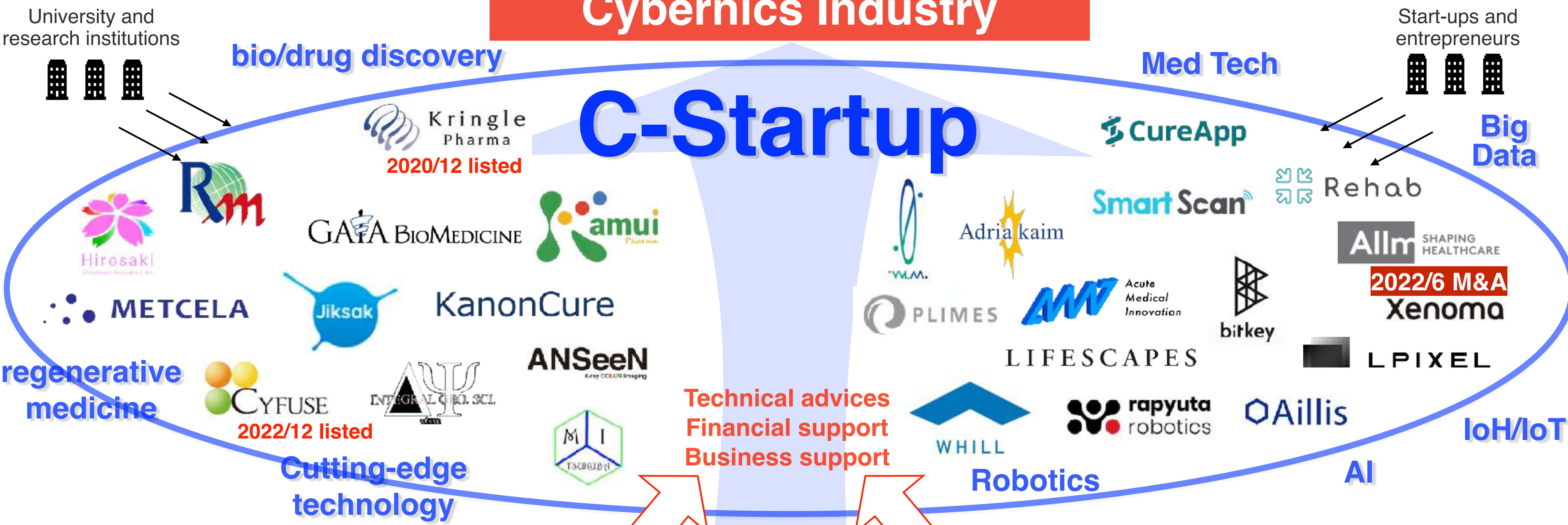
Service \*2

\*1 Includes revenue from sales and maintenances

\*2 Includes revenue from rental

# C-Startup : Innovation ecosystem to create Cybernics Industry

## Cybernics Industry



**CYBERDYNE**

Medical institutions, care facilities, companies, allied partners

University, research institute, government  
WEF Centre for 4th Industrial Revolution,  
Consortium of cutting-edge medicine in the  
21st century  
Smart city council etc.,

**CEJ Fund (scale of 10 billion)**

大和ハウス工業株式会社

損保ジャパン 大同生命

みずほ銀行

筑波銀行

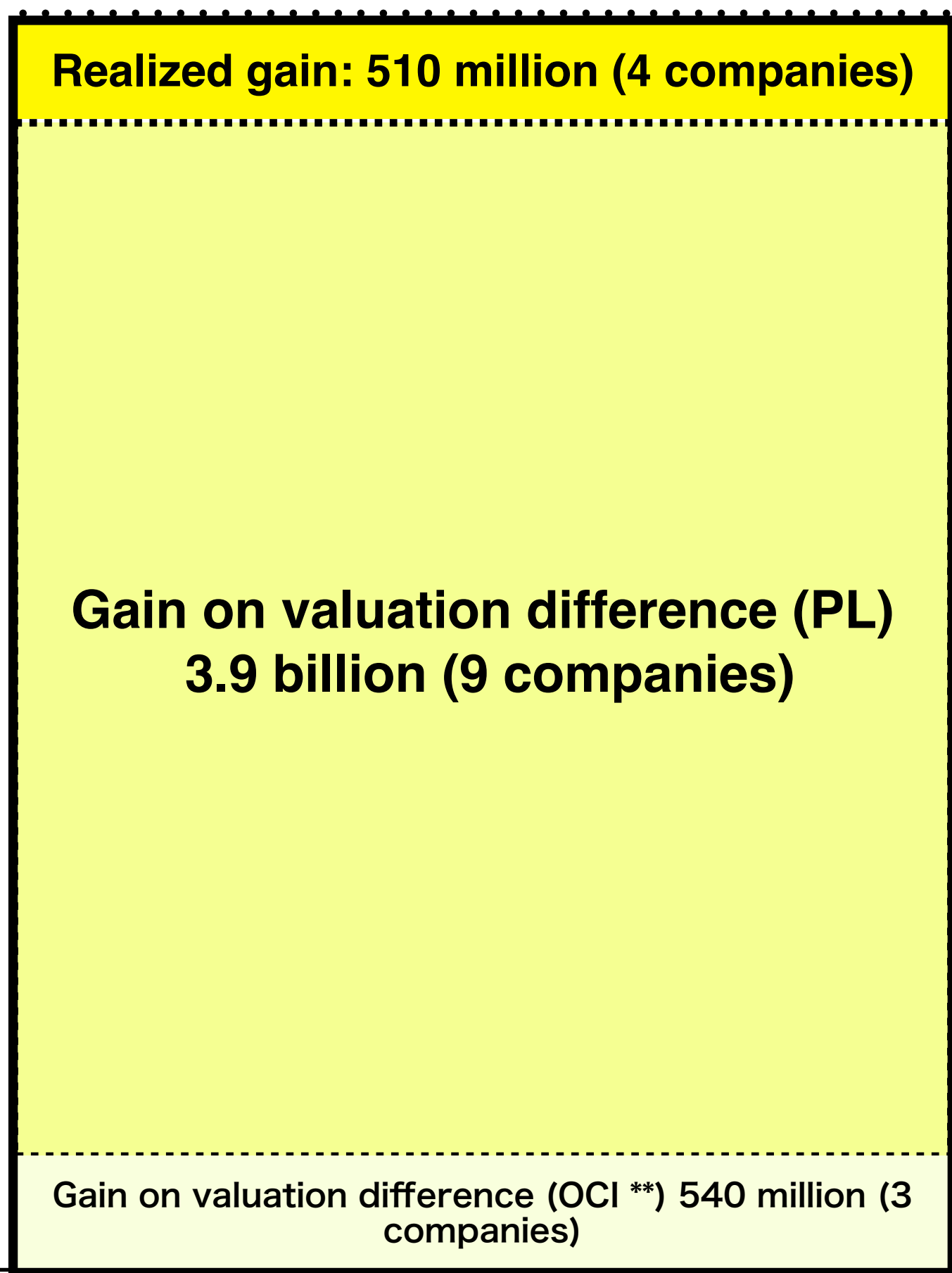
global brain

みずほキャピタル

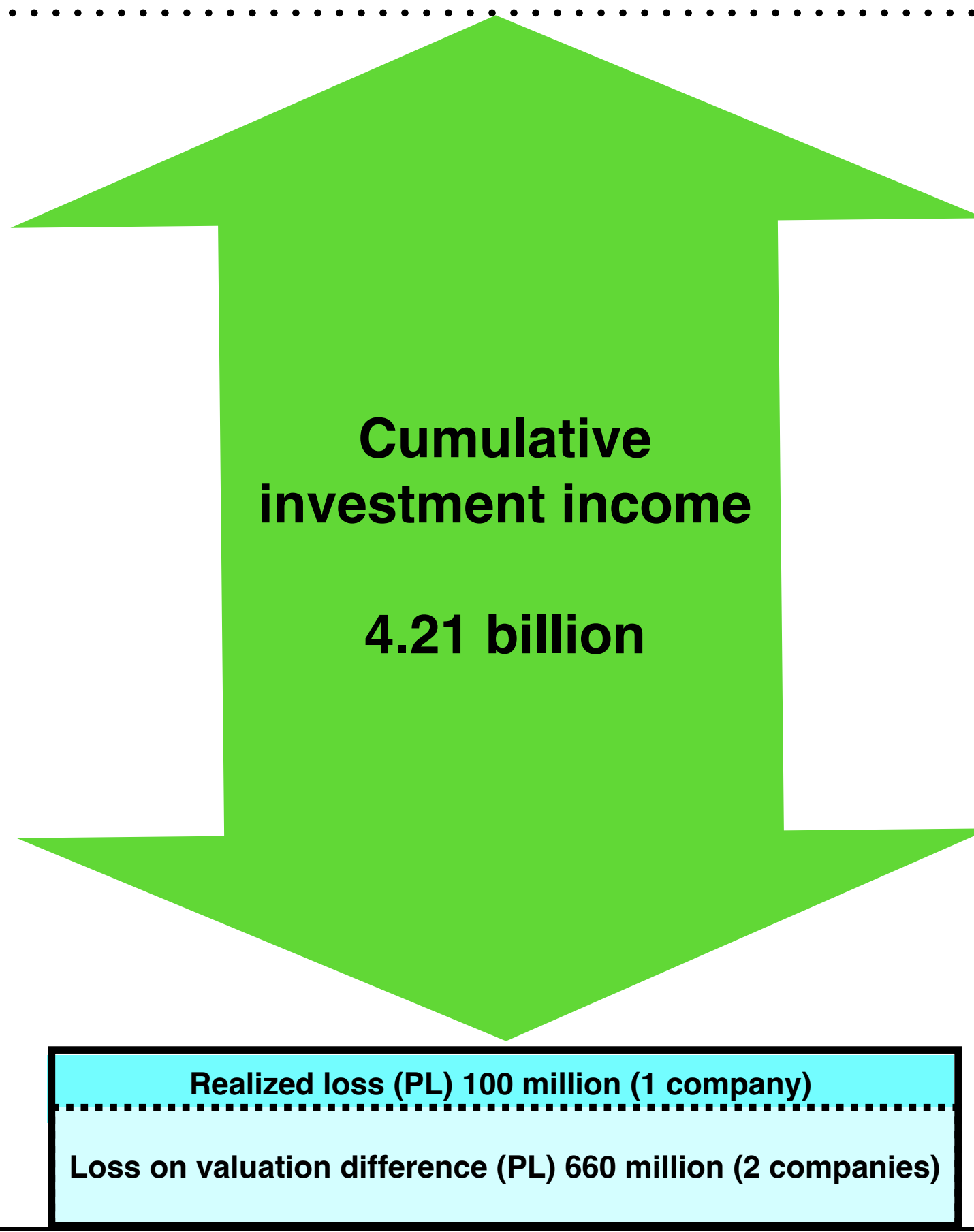
2023.3.31 updated

# (Ref) Fair value assessment of strategic investment through “C-Startup”

**Cumulative investment income 4.2 billion yen vs cumulative investment amount 11 billion yen**



**Increase of fair value (16 companies +4.96 billion)**



**Decrease of fair value (3 companies -760 million)**

**Cumulative investment amount 10.95 billion (31 companies)**

\*Unlisted equity securities are fair valued in accordance with IFRS 9 "Financial Instruments"

\*\*OCI (Other Comprehensive Income): Income not recognized in net profit or loss (PL)

(Reference) Investments in which no valuation differences are currently recognized: 12 companies

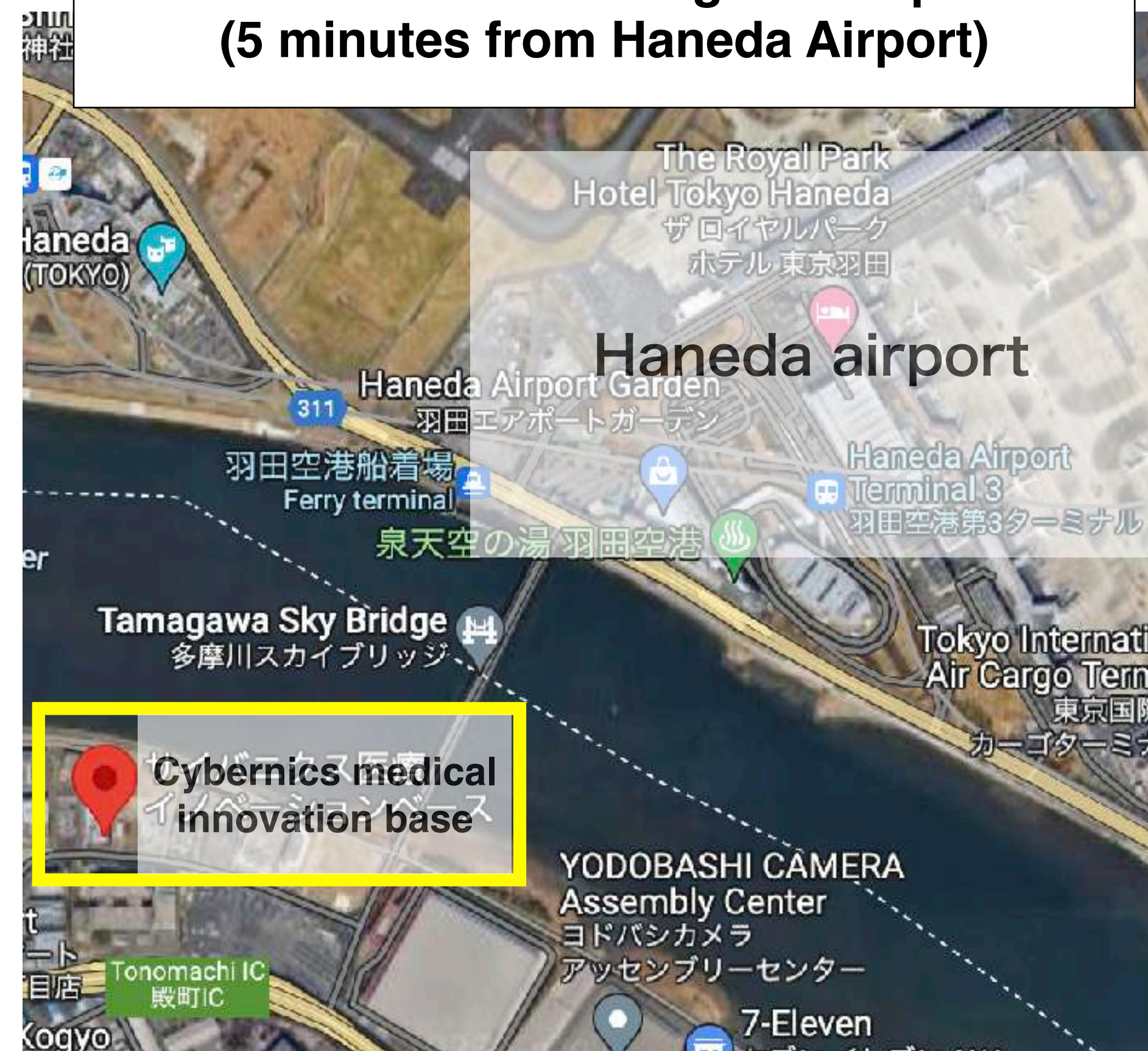
**(As of the end of March 2023)**

# Cybernetics Medical Innovation Base

Creation of new treatment with Cybernetics Treatment combined with regenerative medicine and drug discovery



**Kingsky Front Tonomachi, Kawasaki**  
New base with a view to global expansion  
(5 minutes from Haneda Airport)



2023/1- C-Startup partners began moving in

## 1) Combined Cybernetics Treatment with Regenerative Medicine and HAL

While "Cybernetics Treatment" using the world's first Wearable Cyborg HAL is becoming a standard treatment for functional improvement and regeneration of human brain nerves and muscles (HAL is already available in 20 countries in Europe, the U.S., Asia, etc.), **further therapeutic effects are expected for severe patients by introducing technology at the cellular level and cell-produced substances.** The Group will promote the systemization of Cybernetics Treatment at this research facility.

## 2) Integration of medical and bio-based technologies with AI, robotics, and information systems

In addition to deploying the Group's **new-generation robotic bioreactor technologies and technologies that integrate medical/biotechnologies with AI, robotics, and information technologies,** the company will provide research facilities to partner companies (**medical/biotechnological companies and start-ups** that can collaborate with the Company) and others to develop new medical technologies and expand the Company's business.

## **【Medical】 Cybernetics Treatment**

# Innovative Cybernics Treatment Technology

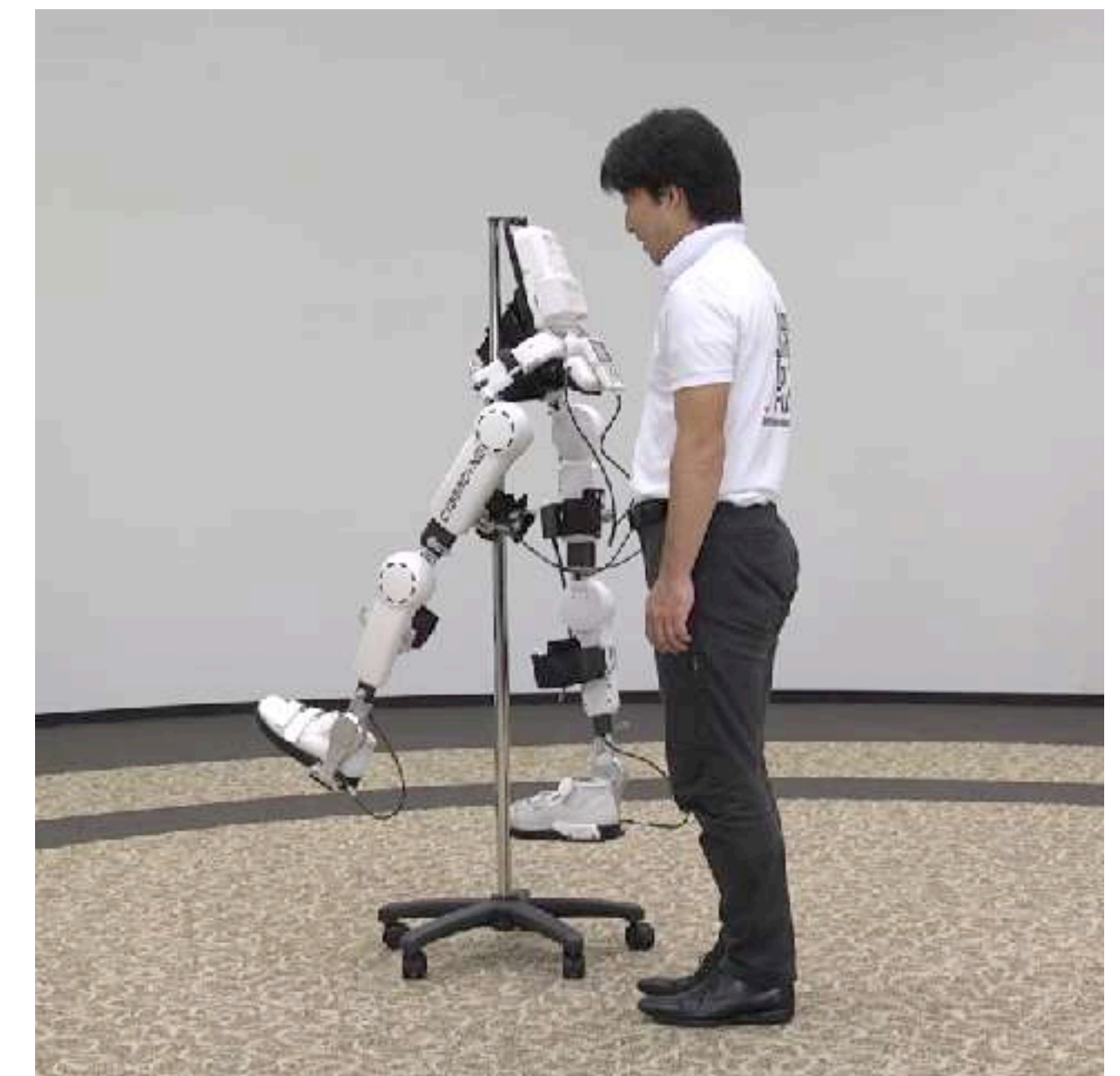
## Wearable Cyborg HAL : Cybernics Treatment that induces functional regeneration

Signals from a person's brain nerve system are processed by signal processing and artificial intelligence in real-time, HAL moves as if it were a part of the person's own body according to the person's intention

### Medical HAL

#### hybrid assistive limb

Technology is worth nothing  
unless it is used in real life



- 1) HAL obtains information related to the brain nerve and muscles from the peripheral part of the body
- 2) HAL synchronizes with the wearer's intentions and functions according to the intention
- 3) Forms an interactive bio-feedback loop to induce improvement in the body-nerve and muscles systems, achieving the goal of the Cybernics Treatment

# 【Medical】 Cybernics Treatment (functional improvement/rehabilitation treatment)

Cybernics Treatment: Innovative method utilizing HAL for treating brain-nerve-musculoskeletal disorders



HAL Lumbar Type



HAL Single Joint Type



HAL Lower Limb Type

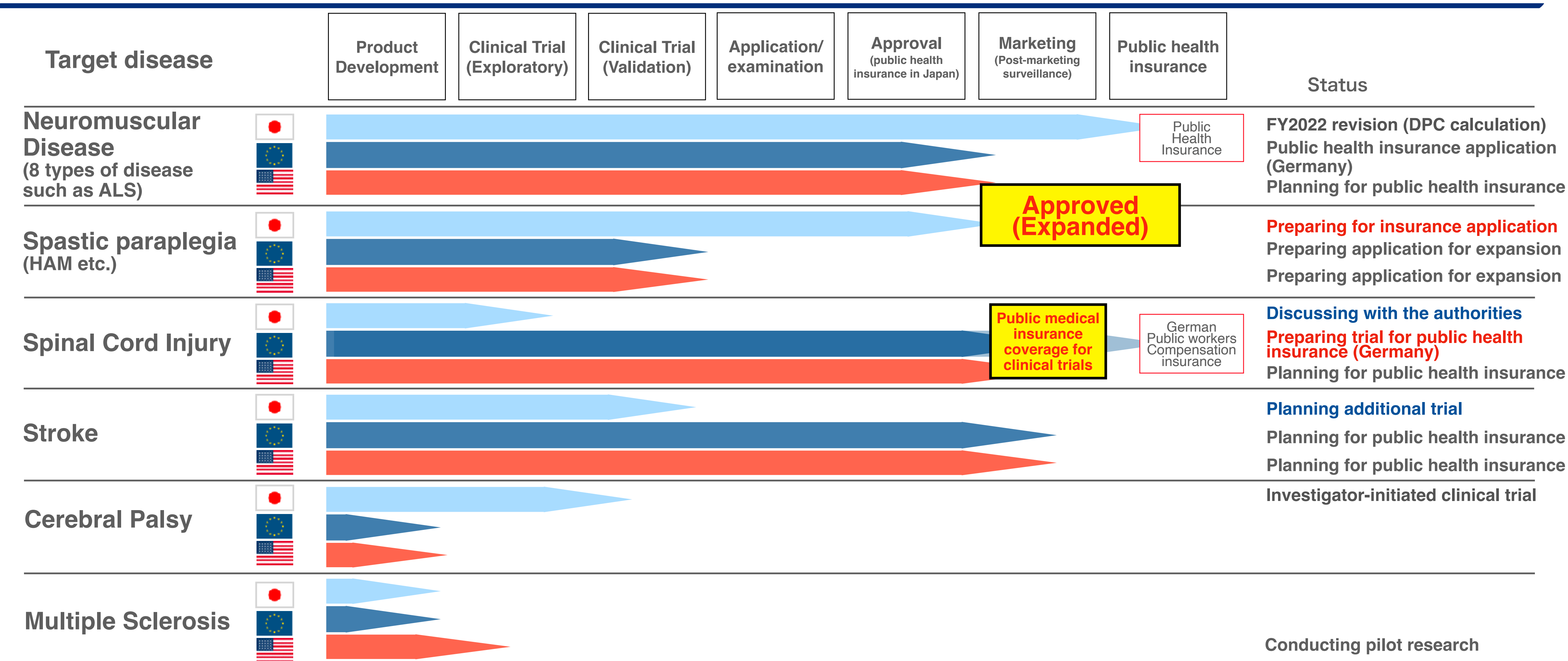




# Development pipeline (1)

## 1) Medical HAL (Lower Limb Type)

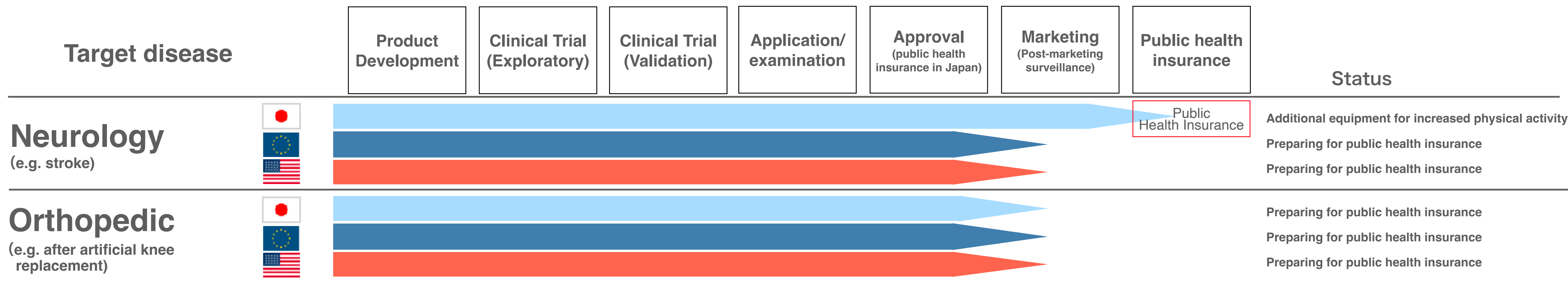
As of March 31, 2023



# Development pipeline (2)

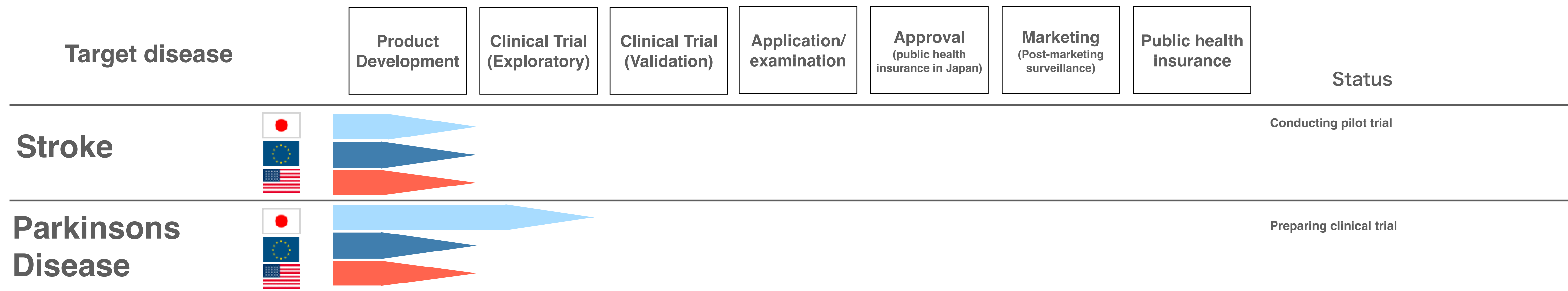
## 2) Medical HAL (Single Joint Type)

As of March 31, 2023



## 3) Medical HAL (Lumbar Type)

As of March 31, 2023



# Status of approvals by diseases and countries (1)

## Significant progress of legislation process in all regions

### 2) Medical HAL (Lower Limb Type)

As of March 31, 2023

		Stroke	Spinal Cord Injury	Neuromuscular disease*
Japan		(Following the discussion with the authorities, considering additional trials)	(Discussing application method with the authorities) *Approved for viral (HAM) and hereditary (spastic paraplegia) spinal cord disease.	<b>Approved</b>
USA		<b>Approved</b>	<b>Approved</b>	<b>Approved</b>
EMEA	EU	<b>Approved</b>	<b>Approved</b>	<b>Approved</b>
	Saudi Arabia	<b>Approved</b>	<b>Approved</b>	<b>Approved</b>
	Turkey	<b>Approved</b>	<b>Approved</b>	<b>Approved</b>
APAC	Malaysia	<b>Approved</b>	<b>Approved</b>	<b>Approved</b>
	Indonesia	<b>Approved</b>	<b>Approved</b>	<b>Approved</b>
	Thailand	<b>Approved</b>	<b>Approved</b>	<b>Approved</b>
	Taiwan	(application in progress)	<b>Approved</b>	(application in progress)
	Singapore	<b>Approved</b>	<b>Approved</b>	<b>Approved</b>
	Australia	<b>Approved</b>	<b>Approved</b>	<b>Approved</b>

\*Spinal muscular atrophy, spinal and bulbar muscular atrophy, amyotrophic lateral sclerosis, Charcot-Marie-Tooth disease, distal muscular dystrophy, inclusion body myositis, congenital myopathy, muscular dystrophy

## Steady progress in medical devices legislation of Single Joint Type

### 2) Medical HAL (Single Joint Type)

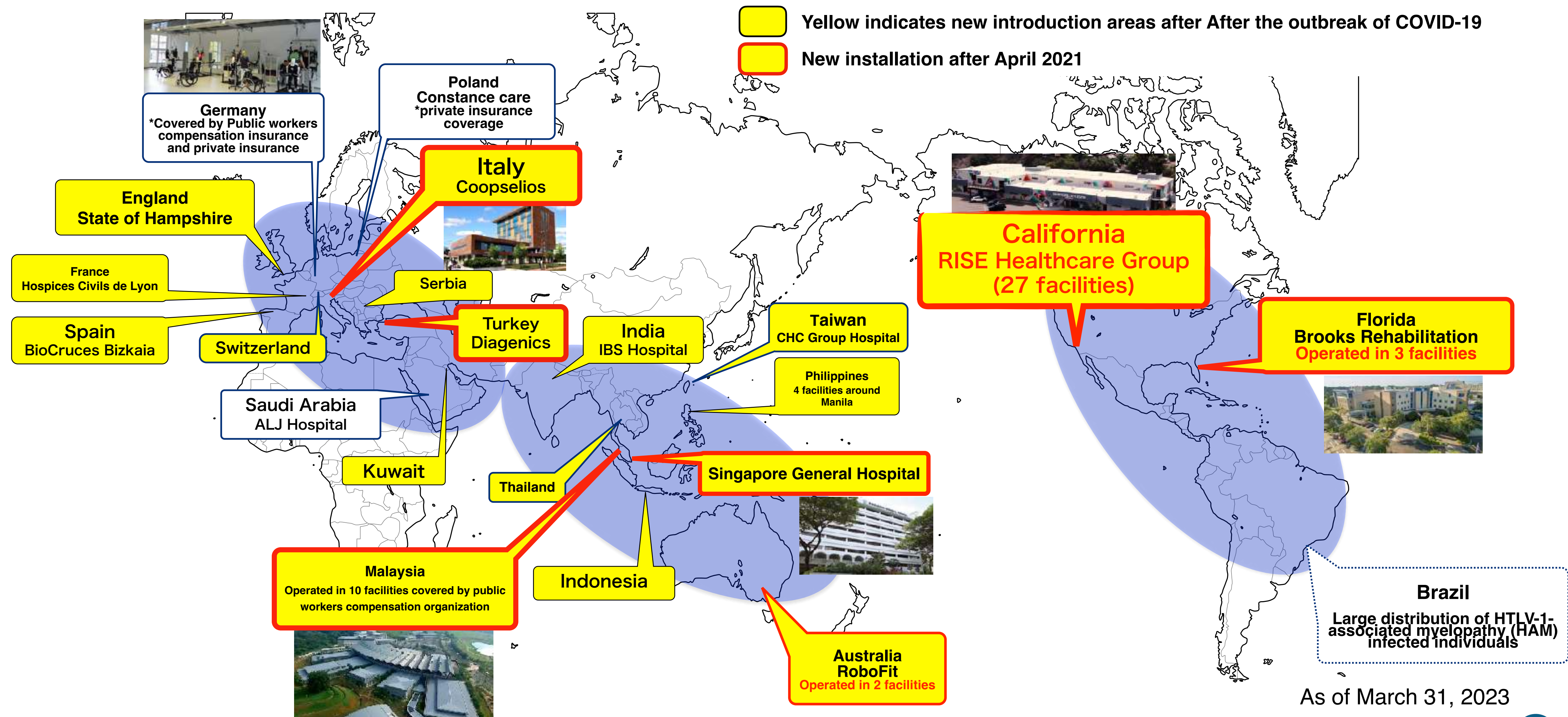
As of March 31, 2023

		Neurology (e.g. stroke)	Orthopedic (e.g. after artificial knee replacement)
Japan		Certification*	Certification*
USA		Approved	Approved
EMEA	EU	Approved	Approved
	Turkey	Approved	Approved
	Saudi Arabia	Approved	Approved
APAC	Malaysia	Approved	Approved
	Indonesia	Approved	Approved
	Thailand	Approved	Approved
	Taiwan	Approved	Approved
	Singapore	Approved	Approved
	Australia	Approved	Approved

\*As Japanese approval system separates “approvals” and “certifications”, certification was used for accurate description

# Overseas expansion of HAL

## Steady progress in US, EU and APAC after COVID



As of March 31, 2023

# Malaysia (1)

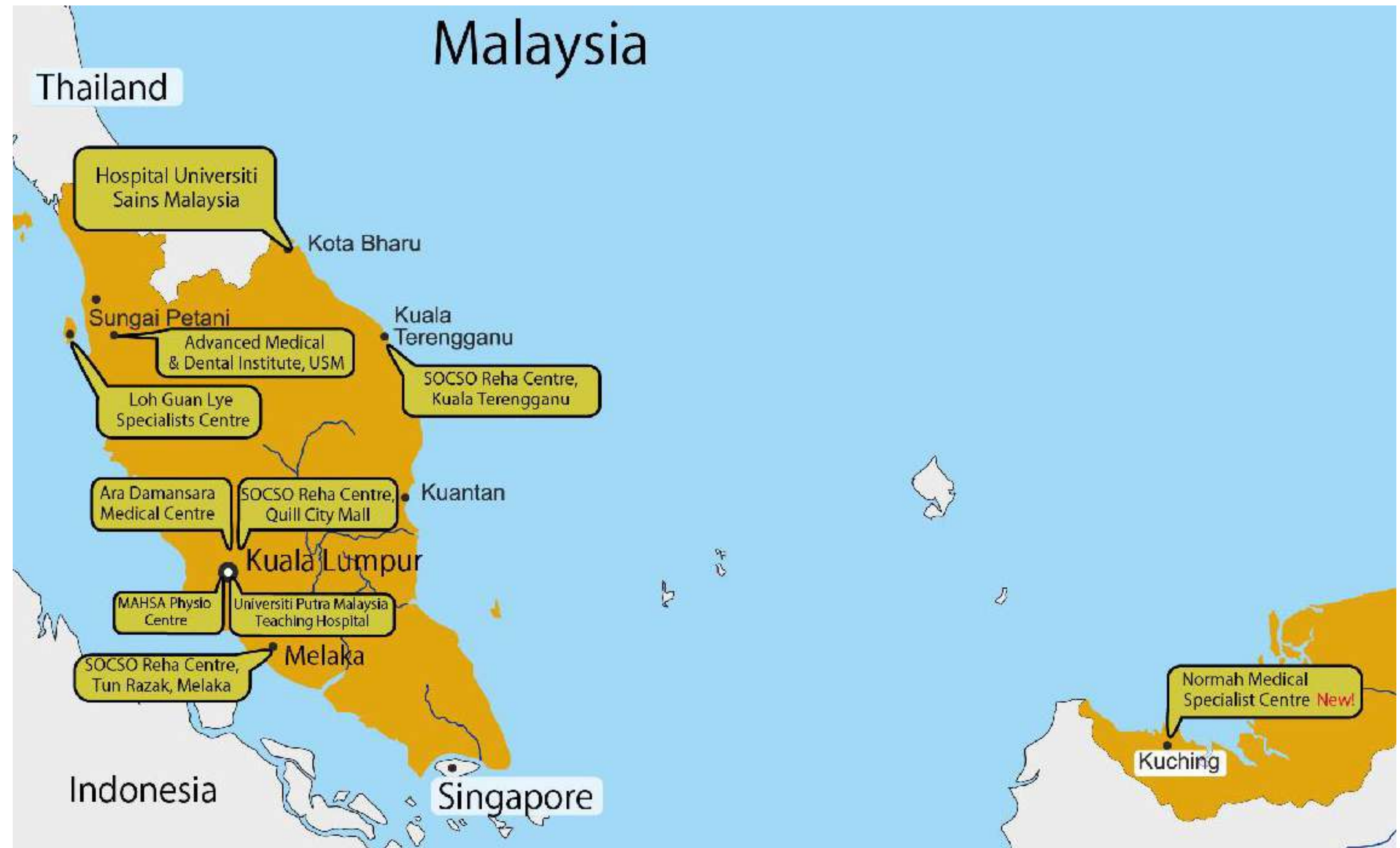
## Public Social Security System accelerates Cybernics Treatment dissemination in Malaysia

**104 HALs rented for a fee at 10 facilities in Malaysia**

**More locations to be added in the future**

### **SOCSSO (Malaysian Public Social Security Organization)**

SOCSSO has four functions: disability pension, survivor's pension, medical coverage and occupational injury coverage, and is compulsory for Malaysian and foreign workers in Malaysia to join the program. It provides medical compensation, disability compensation, funeral benefits, child support and nursing care benefits for illness or injury that occurs while commuting to and from work.



As of March 31 2023

**Largest medical complex in Southeast Asia “National Centre for Neuro-Robotics and Cybernics”**

## **SOCSO constructs “National Neuro-Robotic and Cybernics Centre” in the northern region of Malaysia**



### **National Centre for Neuro-Robotics and Cybernics**

It is being built in Bandar Meru Raya, a new area being developed in Ipoh, Perak, northern Malaysia. It is expected to cover an area of 37 hectares, and will be the largest medical complex in Southeast Asia operated by SOCSO, with the capacity to provide comprehensive treatment to about 700 patients at the same time for a certain period of time.

- ✓ **Cybernics Treatment are highly evaluated outside Japan**
- ✓ **Reinforce Cybernics Industry from this site**

**Planned to be completed at the end of 2024**

**Installed to the largest medical institute in Singapore (Singapore General Hospital)**

- 1) Obtained medical approval for HAL Lower Limb (December 2020)**
- 2) Ships out HAL to Singapore General Hospital (July 2022)**



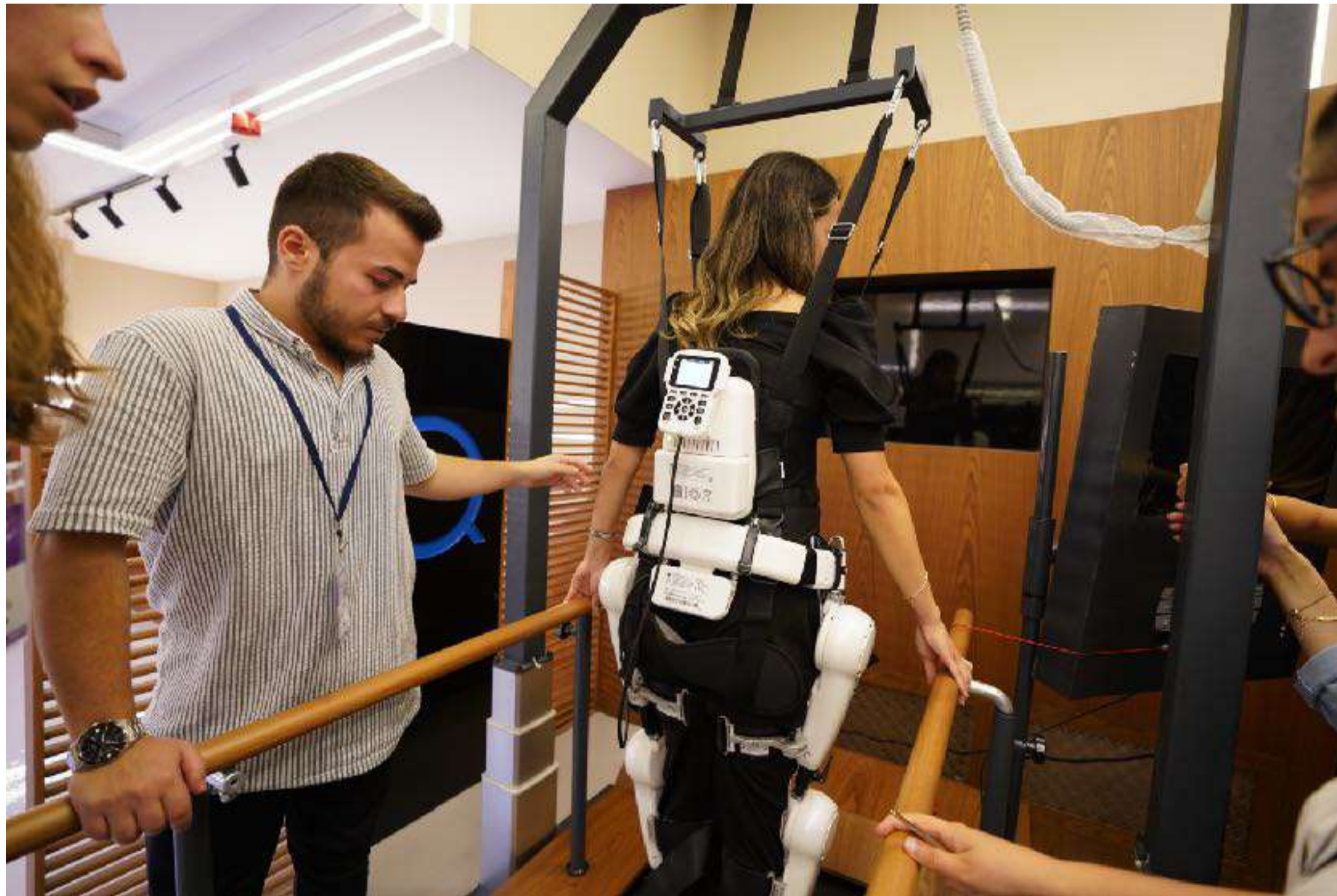
## **Singapore General Hospital**

The hospital is the first and largest hospital in Singapore. It provides affordable specialist care for patients, training for doctors and other healthcare professionals, and research to bring better care to its patients. Every year, the SGH Campus caters to over 1 million patients. With a 10,000-strong workforce, SGH accounts for about a quarter of the total acute hospital beds in the public sector and about one-fifth of acute beds nationwide.



## Gradually installs 36 units of HAL to private medical center (Diagenics)

19 units of HAL shipped out at the end of March 2023



### Diagenics

The Diagenics Group was established to provide Precision Medicine through the comprehensive use of innovative medical technologies, including Cybernics Treatment utilizing HAL, Stem-cell therapy, and epidural stimulation therapy.

## Signed contract with social cooperative Coopselios

**Shipping out 25 units of HAL \*Revenue will be reflected on the 1Q of FY2023**



Coopselios Headquarter in Reggio Emilia - Italy



Coopselios is a social service organization that has been active in Italy for over 30 years including nursing homes, rehabilitation centers, and children's homes. Coopselios has been providing services to families, municipalities, and public health institutions in Italy. Coopselios has been serving families, municipalities, and public health care institutions in Italy.

- 3,550 professionals
- In 8 regions of Italy
- Providing services to 7,800 people everyday

# Neuromuscular Diseases

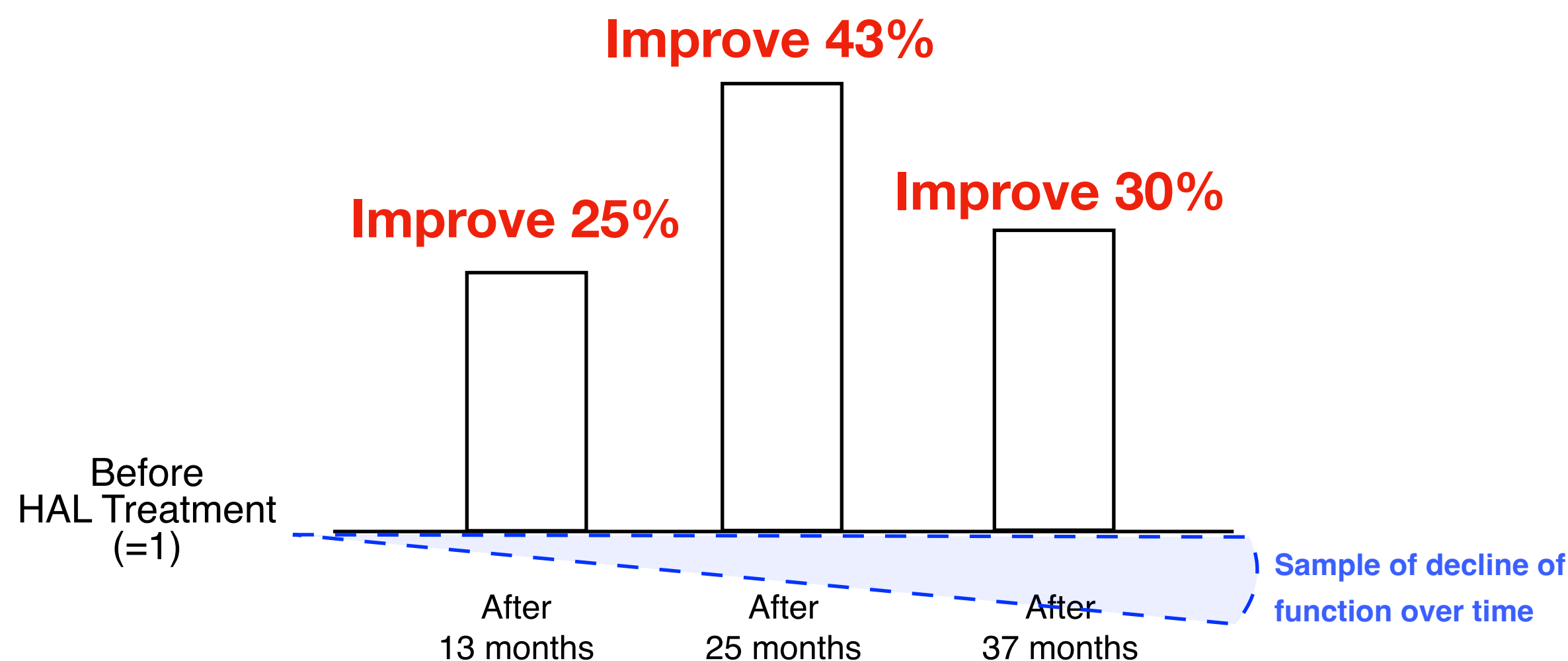
# 進行性神経筋難病：市販後使用成績調査の結果

## Performance test suggests high efficacy and safety

### Efficacy

- Ambulatory function remained above level at the beginning of the treatment over long duration

Distance covered in 2 min walk  
(Rate of change from the level before HAL Treatment)

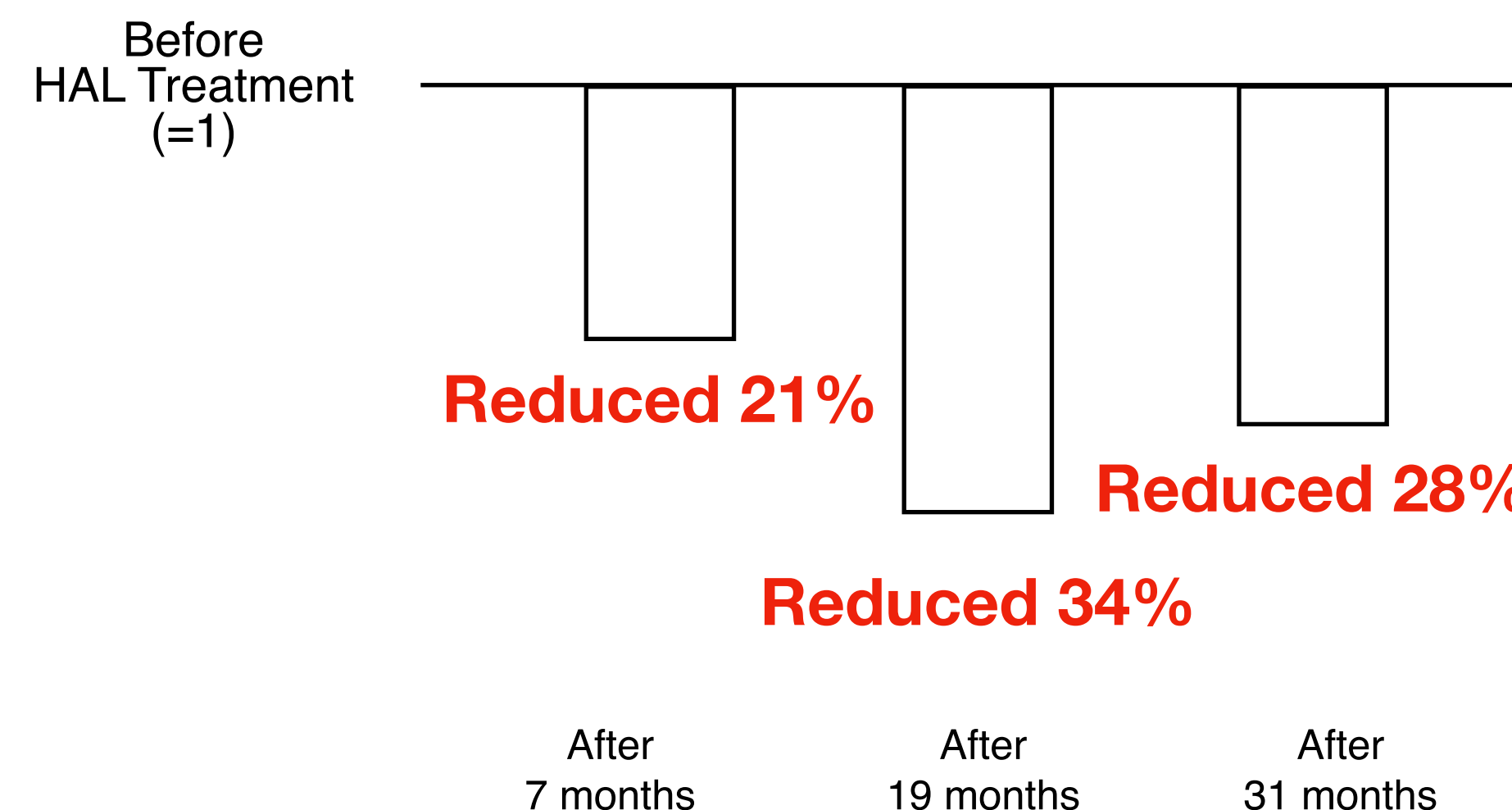


\*Due to its progressive nature, typically ambulatory function will decline over time

### Safety

- Reduced damage to the muscle tissue

CK Blood Level\* \*Test to identify damage to the muscle  
(Rate of change from the level before HAL Treatment)



- \*Conventional exercise therapy will accelerate the damage on the muscle tissue

Target disease: Spinal muscular atrophy, spinal and bulbar muscular atrophy, amyotrophic lateral sclerosis, Charcot-Marie-Tooth disease, distal muscular dystrophy, inclusion body myositis, congenital myopathy, muscular dystrophy

# Information magazine for patients with intractable diseases

Published a magazine to support patients with progressive neuromuscular diseases and their families

## 神経・筋難病(8疾患)の患者様とご家族の皆さまへ

本紙は、HAL<sup>®</sup>によるサイバニクス治療を受けている方のための応援情報誌です。

本誌でご紹介している患者さんの体験談は、個人のご経験・ご感想です。すべての患者さんに同じように当てはまるものではありません。

## HALで行う治療

### HAL<sup>®</sup>医療用下肢タイプとは

HAL<sup>®</sup>医療用下肢タイプ(以下HAL)は、疾患により障害された歩行機能を改善するための医療機器です。HALは装着者の生体電位信号に基づいて、歩行をサポートし、装着者は感覚フィードバックを得ながら歩行運動を繰り返すことで治療効果が得られます。HALは、世界で初めて医療保険の適用が認められたロボット治療機器であり、日本では緩徐進行性の神経・筋8疾患において有効性と安全性が検証され、2015年に医療機器として承認されています。米国など多くの国では、脊髄損傷や脳卒中などの治療(日本では未承認)にも承認されています。

疾患、個人により症状や進行速度は様々ですが、これまで、症状を改善させる方法はなく、次第に歩行機能などは衰える他ありませんでした。下の比較図を見てみましょう。

サイバニクス治療あり	HAL治療期	日常生活期	HAL治療期	日常生活期	HAL治療期	日常生活期	HAL治療期	日常生活期
1クール 平均28日	HAL不使用期間 平均84日	2クール 平均28日	HAL不使用期間 平均84日	3クール 平均28日	HAL不使用期間 平均84日	4クール 平均28日	HAL不使用期間 平均84日	5クール 平均28日

治療開始時の歩行能力

治療なし

下肢機能以外にも、嚥下、発話、呼吸などに症状が起きることがありますが、疾患によって特徴が異なります。

1. Nakajima T, Sankai Y, et al. Orphanet J Rare Dis 16:304(2021)  
 2. 中島孝 Monthly Book Medical Rehabilitation. 256:19-31,2020  
 3. 中島孝,宇都宮宏太. 脳神経内科 2019;90(2) : 154-160

### HALって何だろう

HALは、取得した生体電位信号と重心や関節角度などの運動情報を瞬時に処理し、自然なタイミングでパワーユニットを駆動させアシストします。

脳から始まりHALのアシストを介して脳へと戻るインタラクティブなバイオフィードバック(iBF)ループ(※)を構築し、低い運動負荷で繰り返し運動することで、適切な脳神経系の繋がりが強化・調整されていきます。

体を動かそうとすると脳で指令信号が発生し、その信号は生体電位信号となり体の各部位へと伝達される

※iBFループ

例えば、姿勢していない状態で、人とHALとを生体電位ケーブルで繋げて、右足を上げてみると...

同じタイミング、同じ角度でHALの脚も動きます。

分身の術!

サイバニクス治療によって、関連する神経系や筋肉系の機能が改善されていく

人とHALとが機能的に融合・一体化

### 進行性の歩行機能低下を維持するってどういうこと?

HALを用いた治療を行うことで歩行機能は改善し、定期的に繰り返し実施することで、歩行機能の悪化進行を遅らせることができると考えています<sup>3,4</sup>。

病気の進行が緩やかになると、生活が快適に続けられるね。

これまで、有効な治療法がないとされてきた難病の患者さまに、希望を持っていただける治療法となりました。

4. 使用成績調査とは、医薬品医療機器法の定めにより新規に承認された医療機器または医薬品に対して、円滑化のために実際の診察において副作用や品質など、有効性と安全性に関する確認を行う審査です。HAL医療用下肢タイプに対して、2015年11月から65年間実施使用成績評価申請を行いました。その報告から長期的安全性と有効性が確認されています。

Medical Supervisor: Takashi Nakajima, Neurologist

<https://my.ebook5.net/cyberdyne/4i66VI/>

# Support website for patients

Launched a website to provide information to patients with neuromuscular diseases



Medical Supervisor: Takashi Nakajima, Neurologist

<https://www.hal-treatment.jp>

## Spinal Cord Injury

# Spinal Cord Injury: Clinical Trials by German Insurance Authorities

Clinical trials to be conducted on the premise of German public medical insurance coverage

**G-BA (German Federal Joint Committee) decides to conduct clinical trials under the premise of insurance coverage**

G-BA approves Cybernetics Treatment as the standard of care to be considered for spinal cord injury patients (in accordance with §137eSGB V of the Study Regulations)

G-BA itself decides to conduct a clinical trial (the clinical trial will be covered by **public health insurance for Cybernetics Treatment in advance**).

The results of the clinical trial are expected to be included in the German public medical insurance system.

## G-BA Preparing Protocol Framework for Clinical Trials

2023/01 Protocol outline presented

2023/03 Expert hearing held

**G-BA** (Federal Joint Committee): Organization at the federal level that determines basic benefits, prices, standards, etc. for German insurance treatment.

**§137e SGB V** (Trial Regulation): A system under which the G-BA conducts its own initiated clinical trials and makes final evaluations of promising treatments that could become the standard of care.



# Progressive spinal cord disease: expansion of indications

**Additional indications: HTLV-1-associated myelopathy (HAM) and hereditary spastic paraplegia (approved)**

## Existing indication

### Progressive neuromuscular diseases (8 diseases)

1. Spinal and bulbar muscular atrophy
2. Amyotrophic lateral sclerosis,
3. Spinal muscular atrophy
4. Charcot-Marie-Tooth disease
5. Inclusion body myositis
6. Distal muscular dystrophy
7. Congenital myopathy
8. Muscular dystrophy



## Expanded indication (2022/10)

### Progressive spinal diseases (2 diseases)

1. HTLV-1-related myelopathy
2. hereditary spastic paraplegia

**Cybernetics Treatment promotes the regeneration of neurological function in many diseases. It improves gait instability and functional disability caused by progressive intractable diseases for which no effective treatment has been established**

**Stroke**

# Stroke: Initiatives towards obtaining approval

**Additional trials for Medical HAL Lower Limb Type for stroke are under consideration in parallel with discussions with the authorities**

As of March 31, 2023

**Compared to 2014-2015, when investigator-initiated clinical trial for stroke (HIT2016 trial) was conducted, conditions surrounding acute stroke treatment and recovery rehabilitation changed significantly. Additional trials (clinical trials) to capture the latest patient profile and clinical needs are under consideration.**

**Based on discussions with the authorities regarding the clinical significance of the HIT2016 study and the statistical significance of the primary endpoints, additional studies may have to be considered so it can be submitted in combination with the results of HIT2016 study**

# **【Healthcare】 Neuro HALFIT**

## Program to improve brain-nerve-musculoskeletal function at Robocare Center



HAL Lumbar Type



HAL Single Joint Type

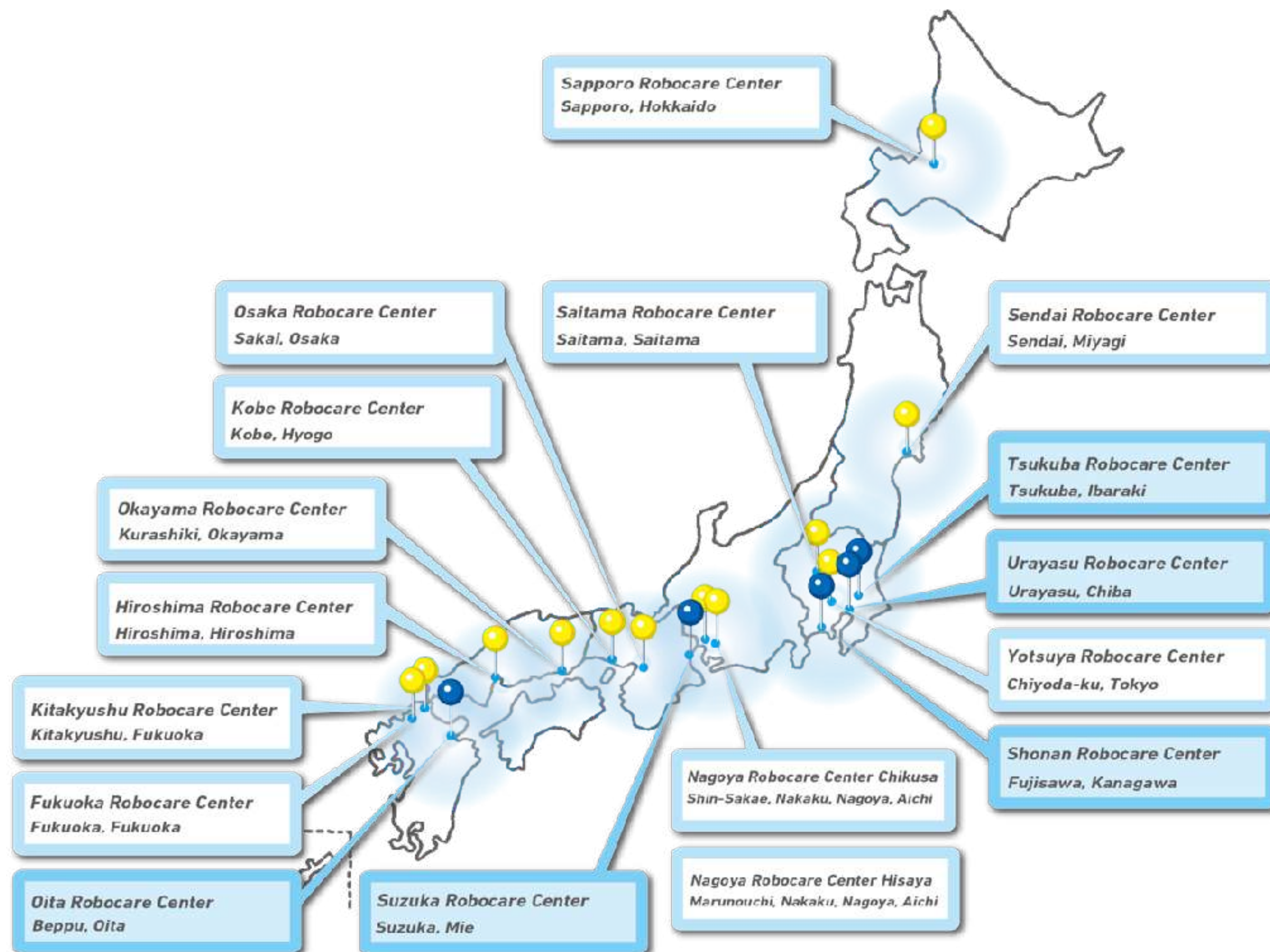


HAL Lower Limb Type



# Robocare Center: Nationwide expansion of *Neuro HALFIT*

Expansion of hubs in the medical healthcare service business for individuals



**Available in 17 locations nationwide**

# HAL care prevention program

Significant improvement in mobility functions (daily activities such as standing, walking, running, sitting) of the elderly

## Care prevention program (Kanagawa Mirai MIBYO Cohort Study)

Interim evaluation results of short-term intervention twice a week for a total of 10 sessions



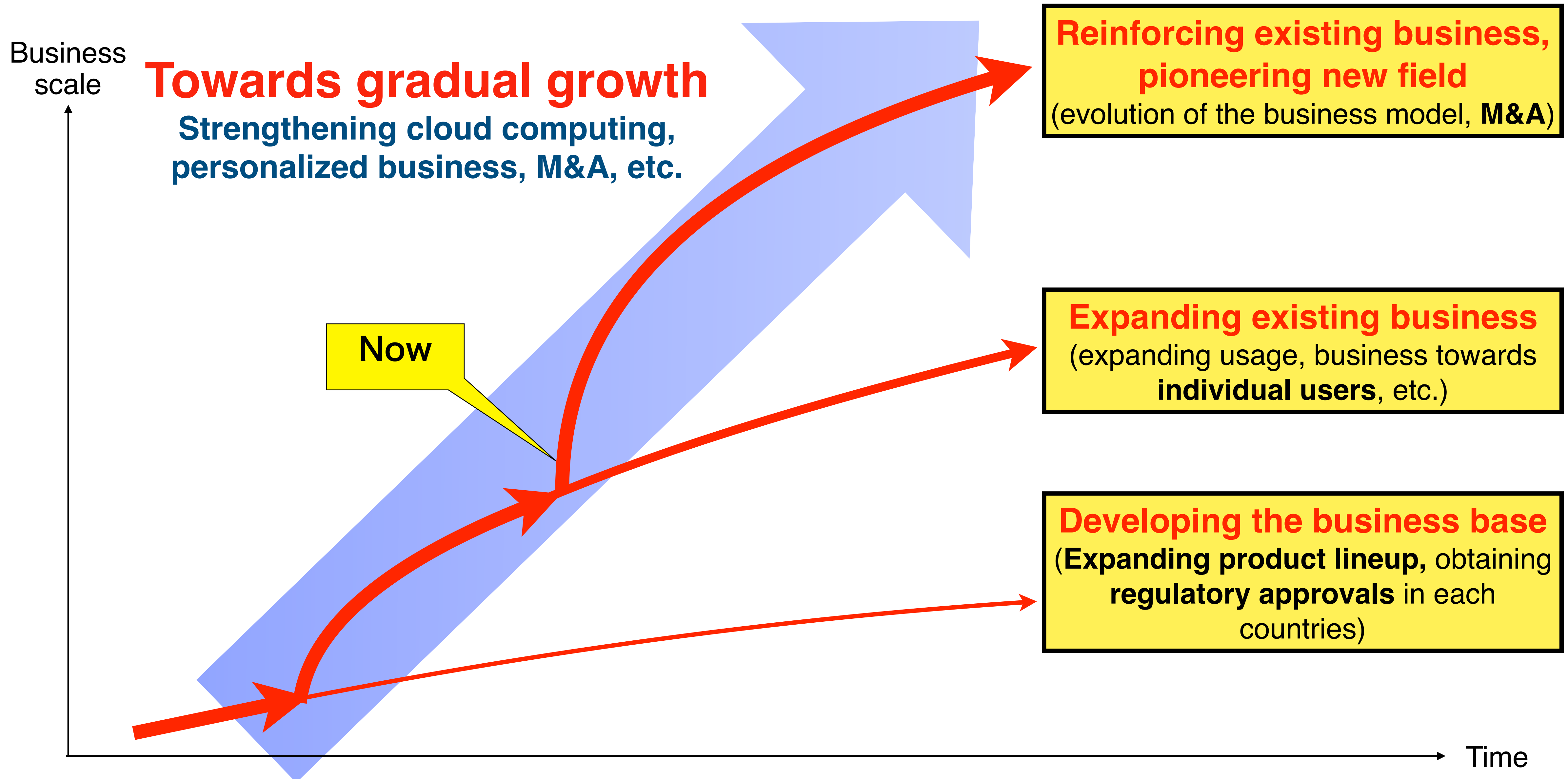
Evaluation item	Before HAL (Mean±SD)	After HAL (Mean±SD)	Improvement rate	P-value
10m walk (walking speed m/sec)	1.04±0.22	1.45±0.25	39%	<0.001***
Locomotiv 5 check <small>*Signs of motor unit deterioration</small>	8.15±2.48	3.96±3.15	105%	<0.001***

Subject n=80 people (Average age : 74.8 ± 4.3 years old)

## Strategy for growth



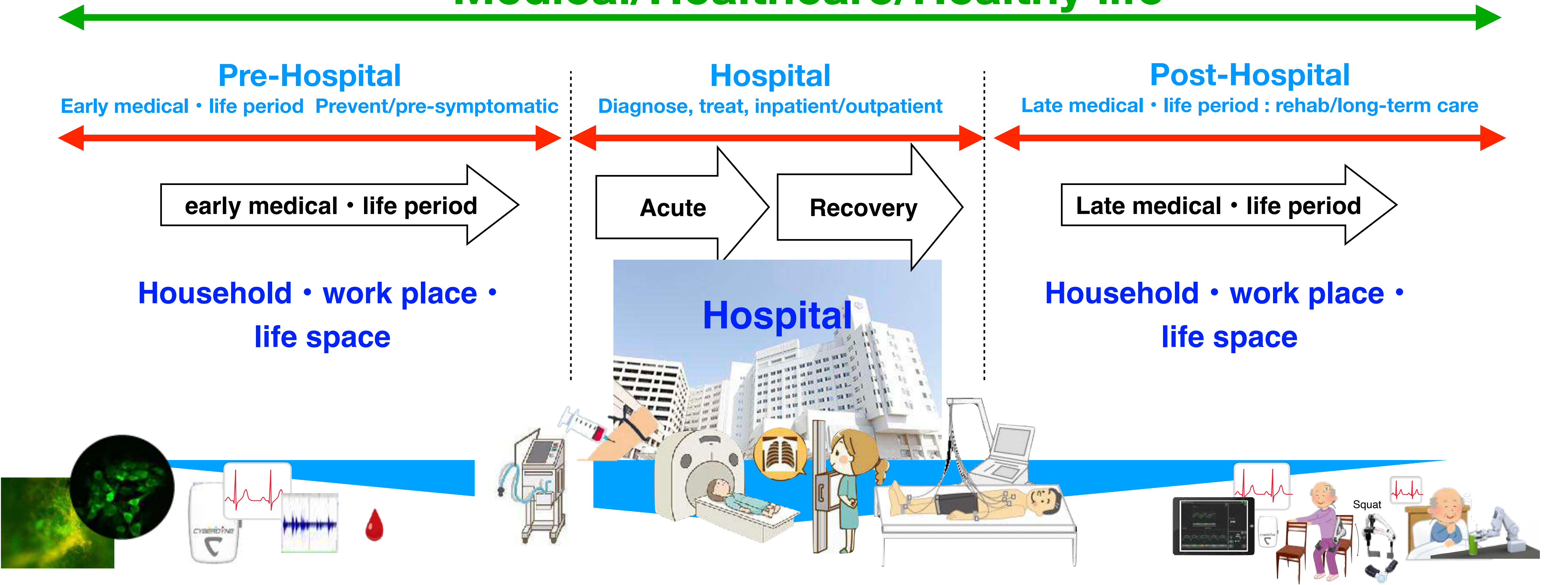
# Image of growth scenario



# Future of medical healthcare and healthy life

## Prevention/pre-symptomatic, medicine, rehabilitation/long-term care

### Medical/Healthcare/Healthy life



Close coordination, fusion between medical and non-medical field to evolve into comprehensive initiatives

# Cybernics Medical Healthcare System

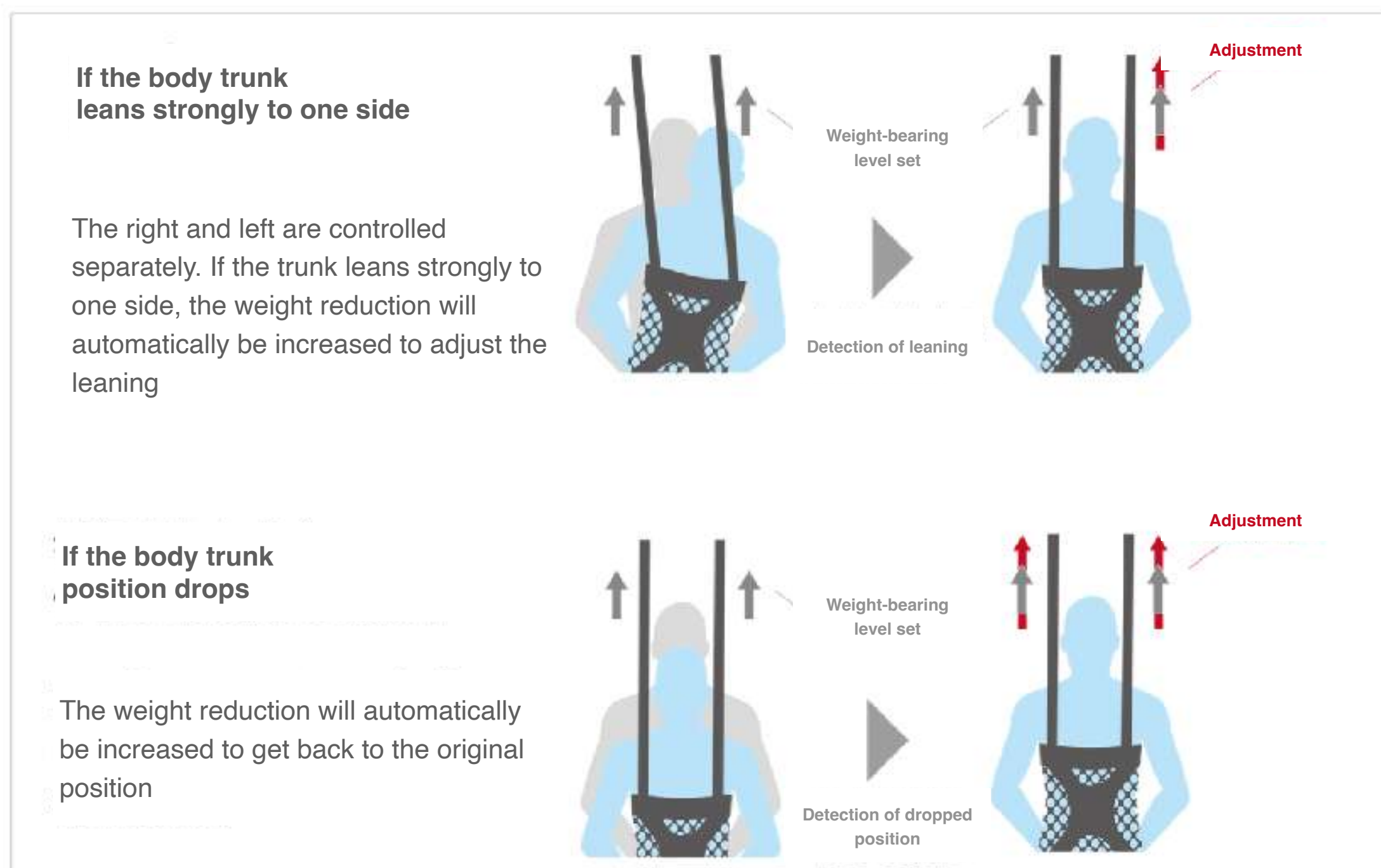
Prevent, early detect and improve on daily basis (data linkage with Cyberdyne Cloud)



Seamless data linkage between hospitals, facilities, homes, and workplaces with IoH/IoT

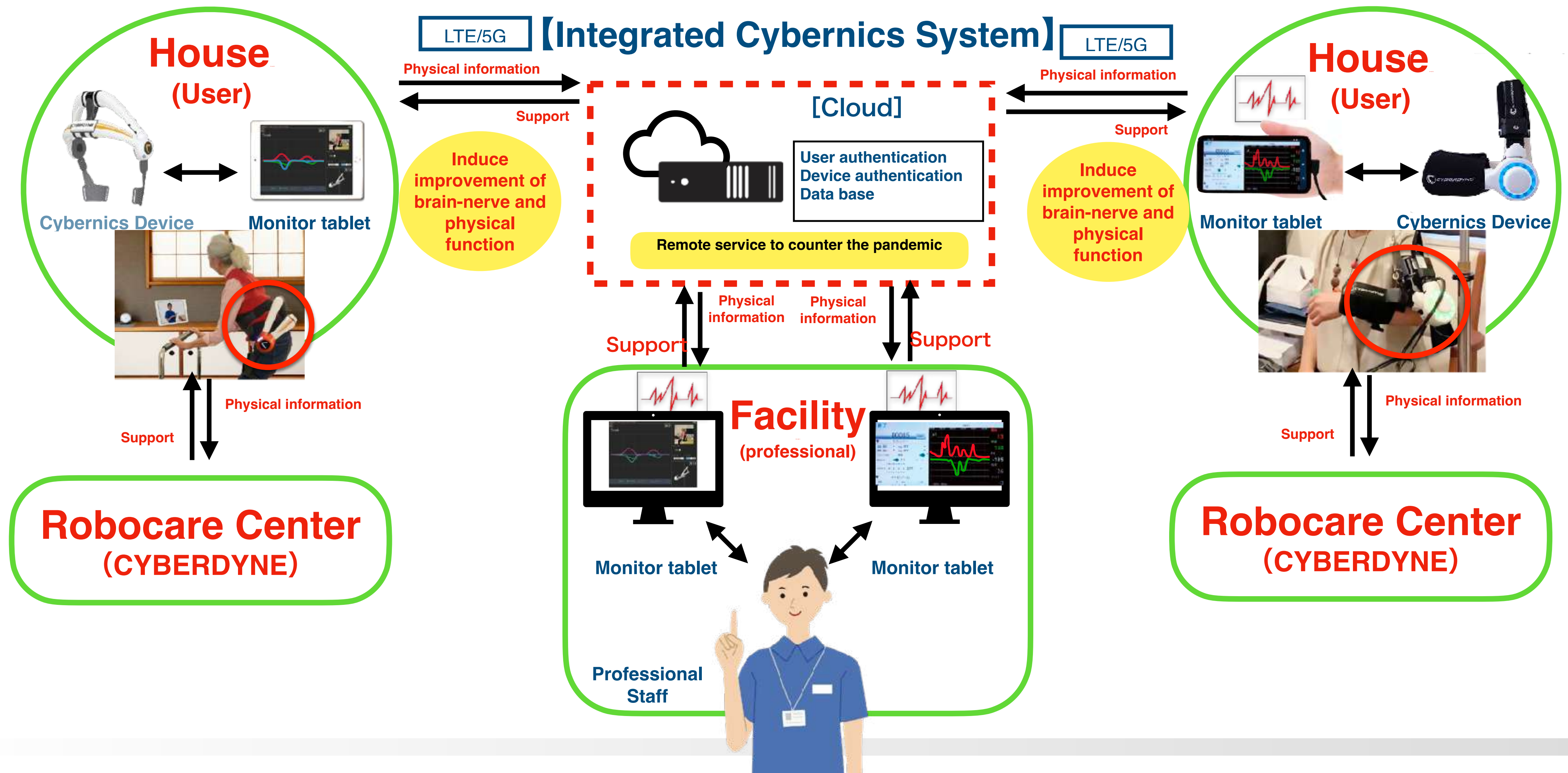
## Efficient Cybernics Treatment with reduced therapist burden

### Roboticized left-right independent unloading control



# Medical Healthcare Service for Individuals Neuro HALFIT at Home

Expansion of remote services connecting home and hospitals/facilities through cloud computing



# Medical service business for individuals: US Business (1)

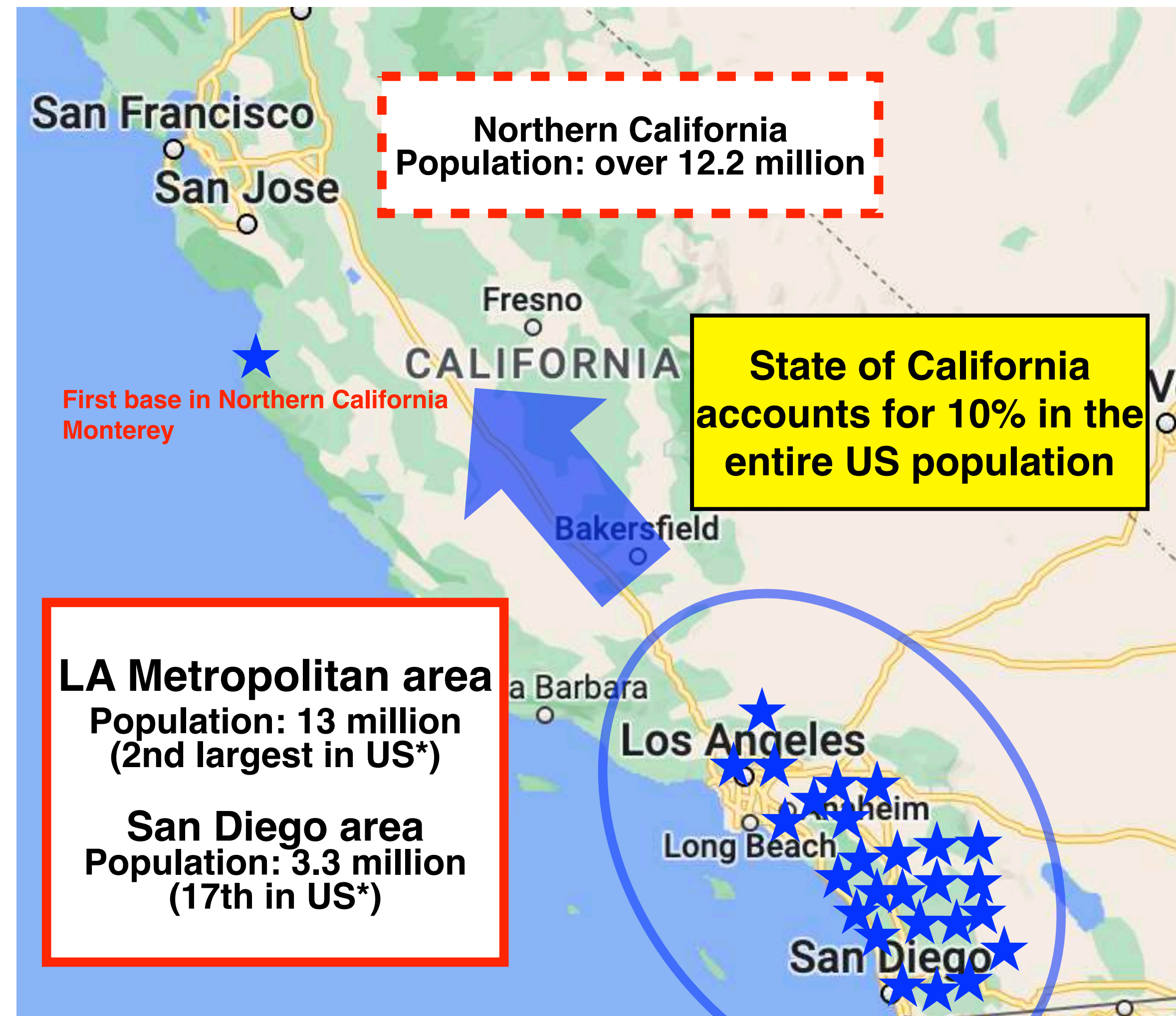
## Promotion of in-house platform development of medical services for individuals

### RHG (RISE Healthcare Group Inc.)

(Company in charge of the Group's medical service business)

- ✓ Gradual expansion in Southern California
- ✓ Expansion to Northern California (February 2023)
- ✓ Currently 27 locations (up 11 locations since the beginning of the year)

**A milestone in developing personalized services, such as home functional improvement and daily health care monitoring**

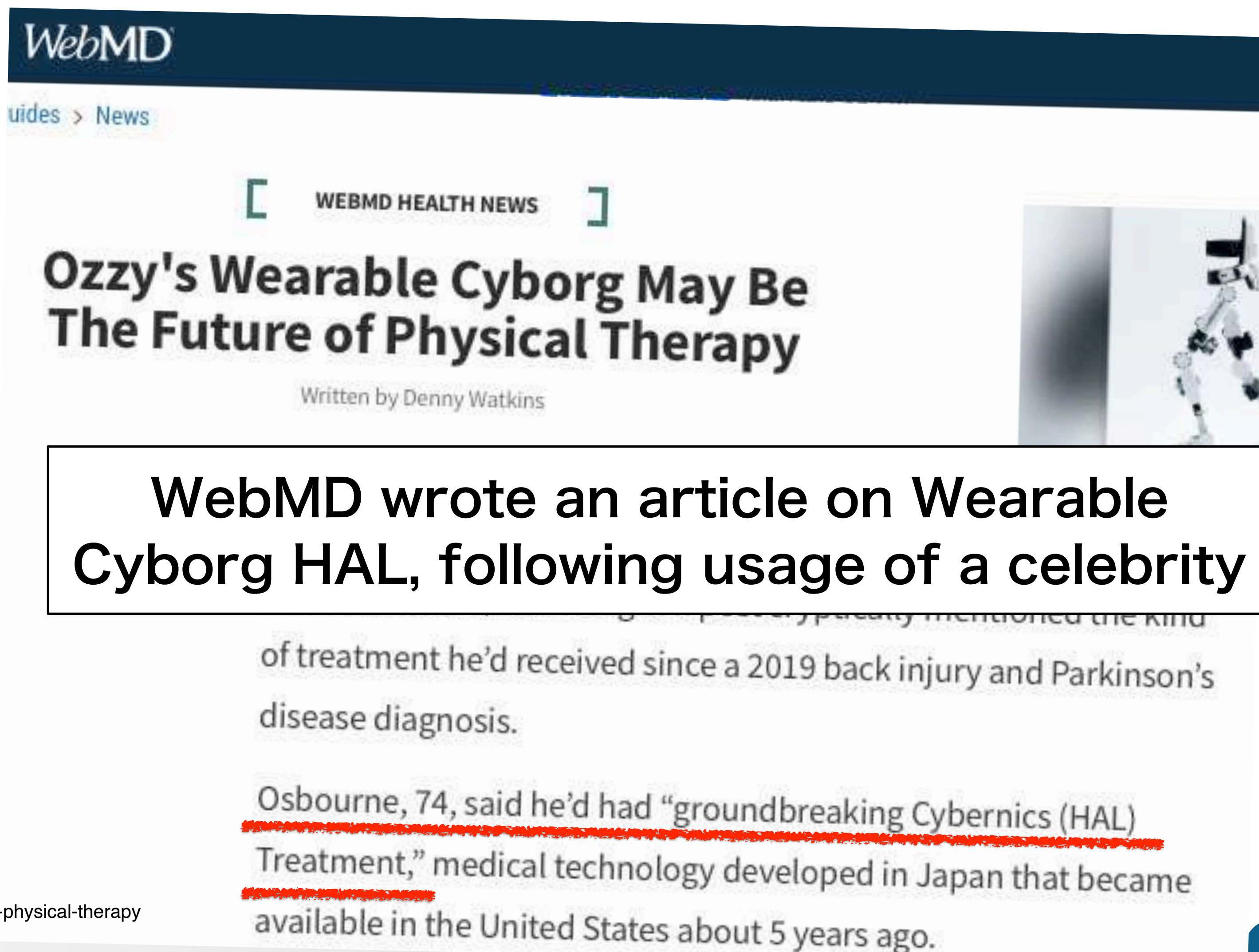


\* [https://en.wikipedia.org/wiki/List\\_of\\_core-based\\_statistical\\_areas](https://en.wikipedia.org/wiki/List_of_core-based_statistical_areas)

# Medical service business for individuals: US Business (2)

Cybernetics Treatment is gradually going to become an official service of the center

- ✓ 4 facilities from Sep. 2022
- ✓ No. of treatment sessions from Apr. 2022  
Treatment sessions: 1400+
- ✓ High satisfaction
- ✓ Combination of insurance and self-payment



The screenshot shows a WebMD article titled "Ozzy's Wearable Cyborg May Be The Future of Physical Therapy" written by Denny Watkins. The article is categorized under "WEBMD HEALTH NEWS". The text in the image includes: "of treatment he'd received since a 2019 back injury and Parkinson's disease diagnosis." and "Osbourne, 74, said he'd had 'groundbreaking Cybernetics (HAL) Treatment,' medical technology developed in Japan that became available in the United States about 5 years ago."

**WebMD wrote an article on Wearable Cyborg HAL, following usage of a celebrity**

## Healthcare monitoring on daily basis with Cyvis

Daily accumulation, analysis, and AI processing of various vital data

- Cardiac activity
- brain activity
- body temperature
- SpO2
- Body movements
- Breathing (optional)



Check for **arrhythmia** and **atrial fibrillation**

to prevent **myocardial infarction** and **cerebral infarction**

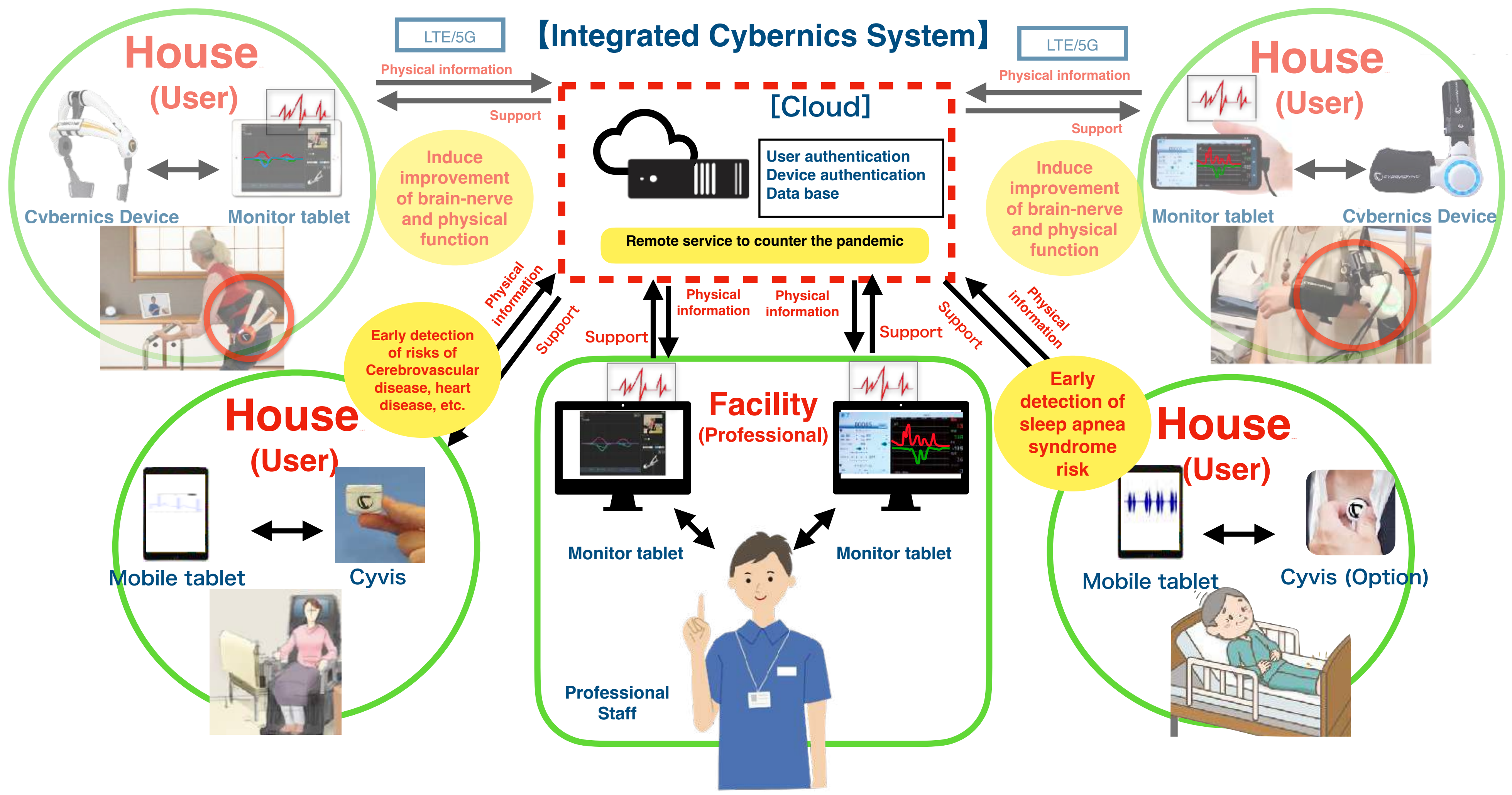
Option to check **breathing conditions** during sleep for early detection of **sleep apnea risk**

- ✓ “Cyvis-1” applied for medical device legislation (Apr. 2022), Available on a trial basis for users
- ✓ “Cyvis-2” applying for medical device legislation (Apr. 2023)



# 【Prevention and early detection】 Ultra small vital sensor Cyvis

**Expands remote service that connects households to hospitals and facilities**

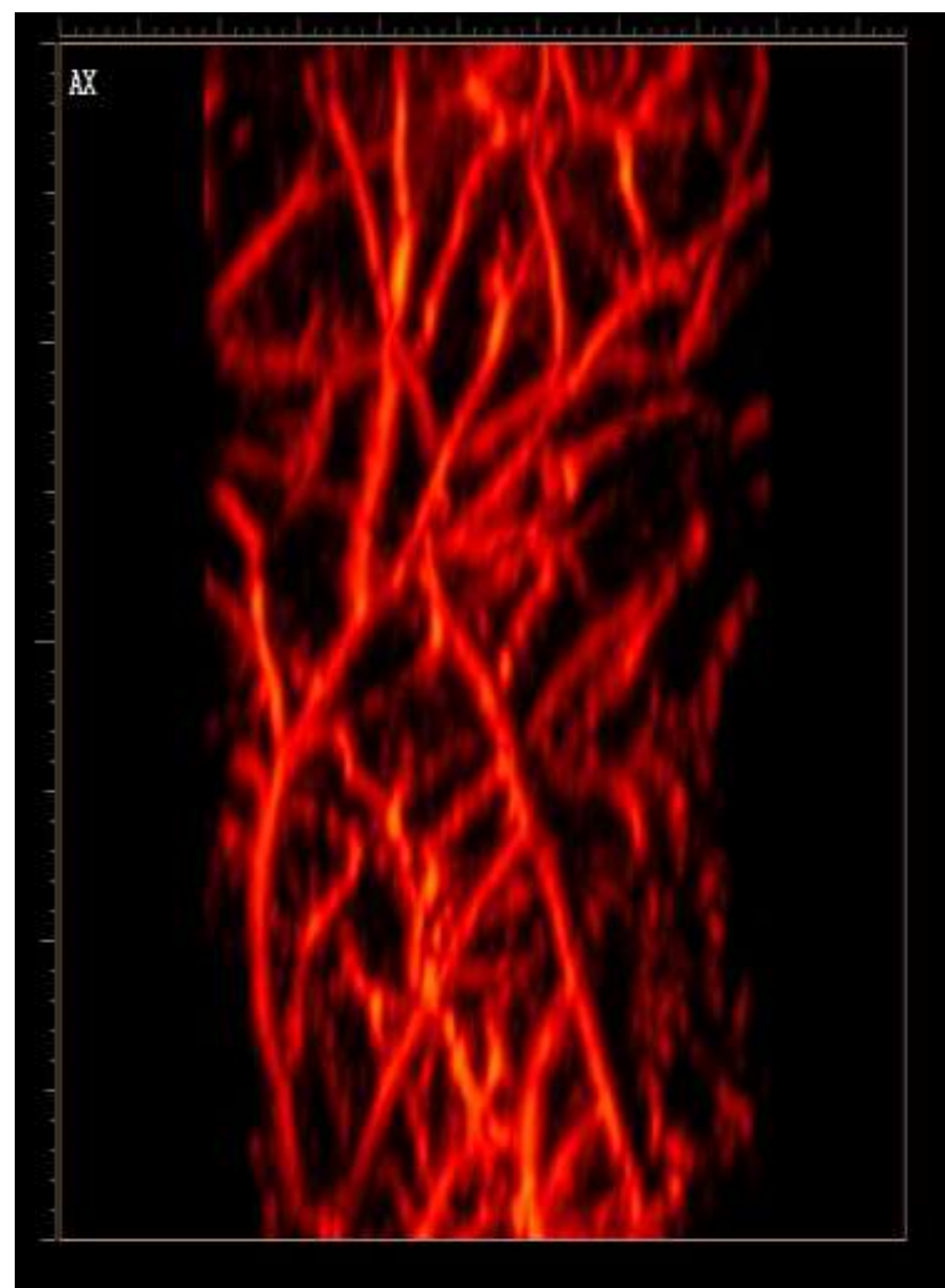


# Contrast-free, non-invasive, real-time, high-resolution 3D imaging

LED array method (patent held by the company)



Adopted as the cover of Biophotonics, a U.S. industry journal dealing with biophotonics



Peripheral vascular and blood conditions, etc.

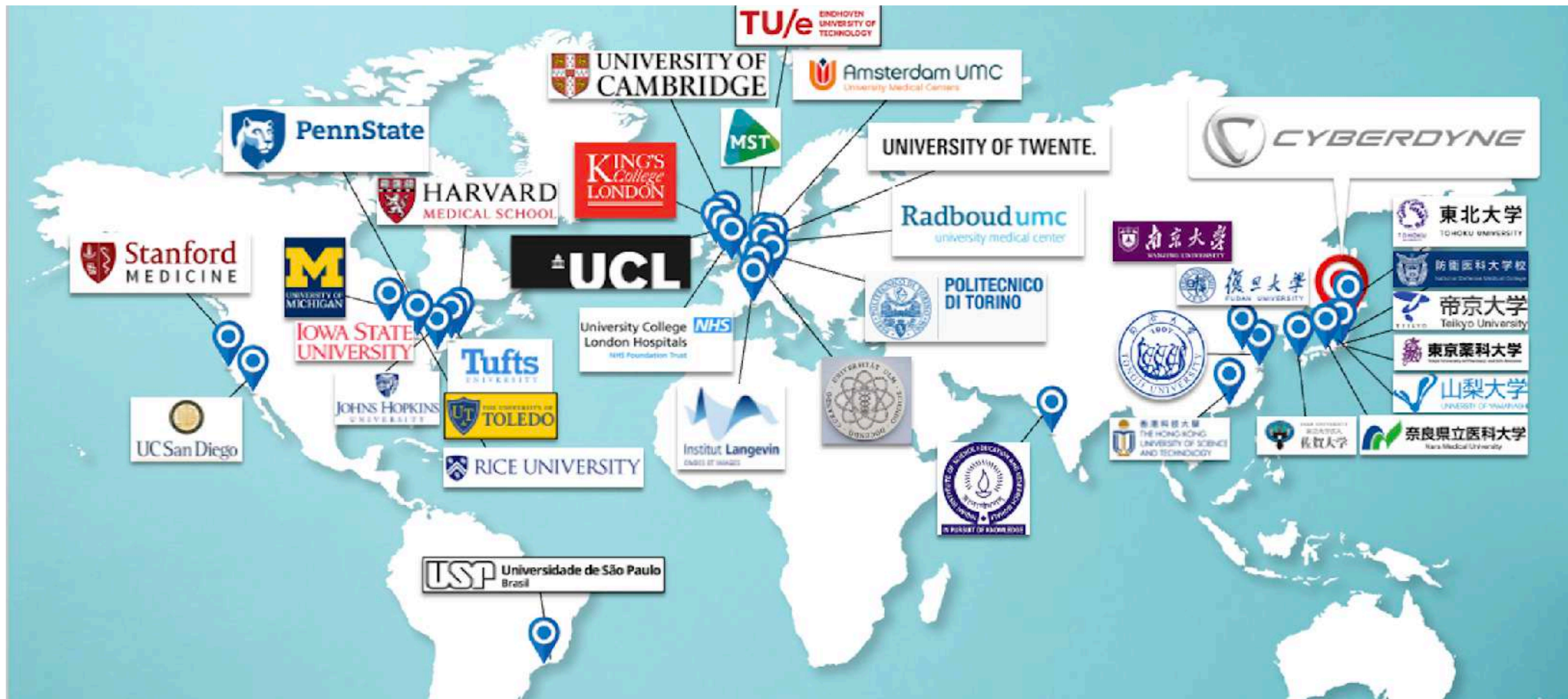
**Peripheral level examination, which could not be done with conventional imaging equipment, is now possible!**

## Example of application

- Routine examination and diagnosis of diabetic foot lesions
- Examination of vascular regeneration status by regenerative medicine
- Examination and diagnosis of cancer
- Examination of aging skin, etc.

Currently promoting medical device commercialization as a next-generation medical diagnostic imaging device

# 【Prevention and early detection】 Photoacoustic Imaging Device using LED light array



**Introduced by prominent universities and research facilities around the world (e.g., Cambridge University, Stanford University, Johns Hopkins University, etc.)**

# 【Workplace】 HAL Lumbar Type (Labor Support)

## Visualization of workers' workload and physical condition (labor management and work efficiency)

**Active type and light weight**

- Can be worn for long hours

**Compact design (back won't be covered)**

- Can be used with safety belts (full-body type) and air conditioning suits!

**Assist walking**

- Can be moved smoothly on site

**Able to move in mid-back position.**

- Respond with assistance in a variety of practical tasks!

**IoH/IoT device**

- Visualize workload analysis and operation status!  
Integrated production management

**Wearable Cyborg**

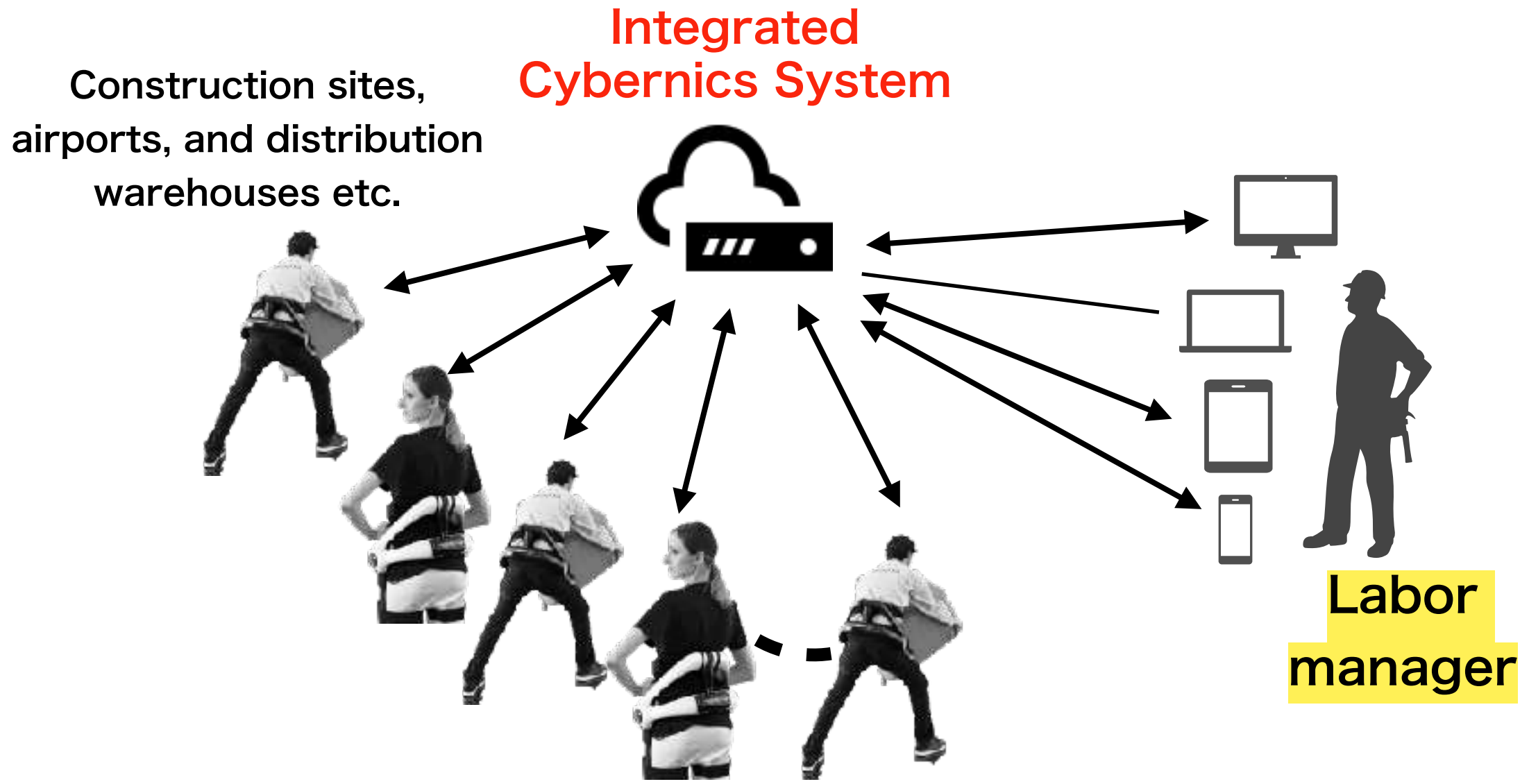
- It moves according to the wearer's intention

**Can be worn in 10 sec**

- Easy to put on and take off, share with multiple people!

**Waterproof/dustproof (IEC reg, IP54)**

- Can be worn outdoors, even in the rain!



### Topics

- Preparing a prototype of a new model
- 1) Slimming down even further
- 2) Further power and smooth assistance
- 3) Visualization of vital and work environment

# 【Workplace】 Disinfection/Cleaning Robot CL02

## Operationalizing next-generation technologies in a post-coronary society

### Extensive Cleaning ability

- **High speed autonomous navigation** (Can safely clean at 4km/h to cover massive space in short time)
- **Massive cleaning area** (Detects wall that is 30m away and cover max 3,000m<sup>2</sup> with full charge battery)
- **High vacuum performance** (one of the best in the industry)

### Can be used for multiple tasks such as disinfection

- **Disinfection agent sprayer** (Disinfects handrails and benches)
- **UV Ray Disinfector** (set on the bottom of the robot to disinfect floors)

### Visualizes its work

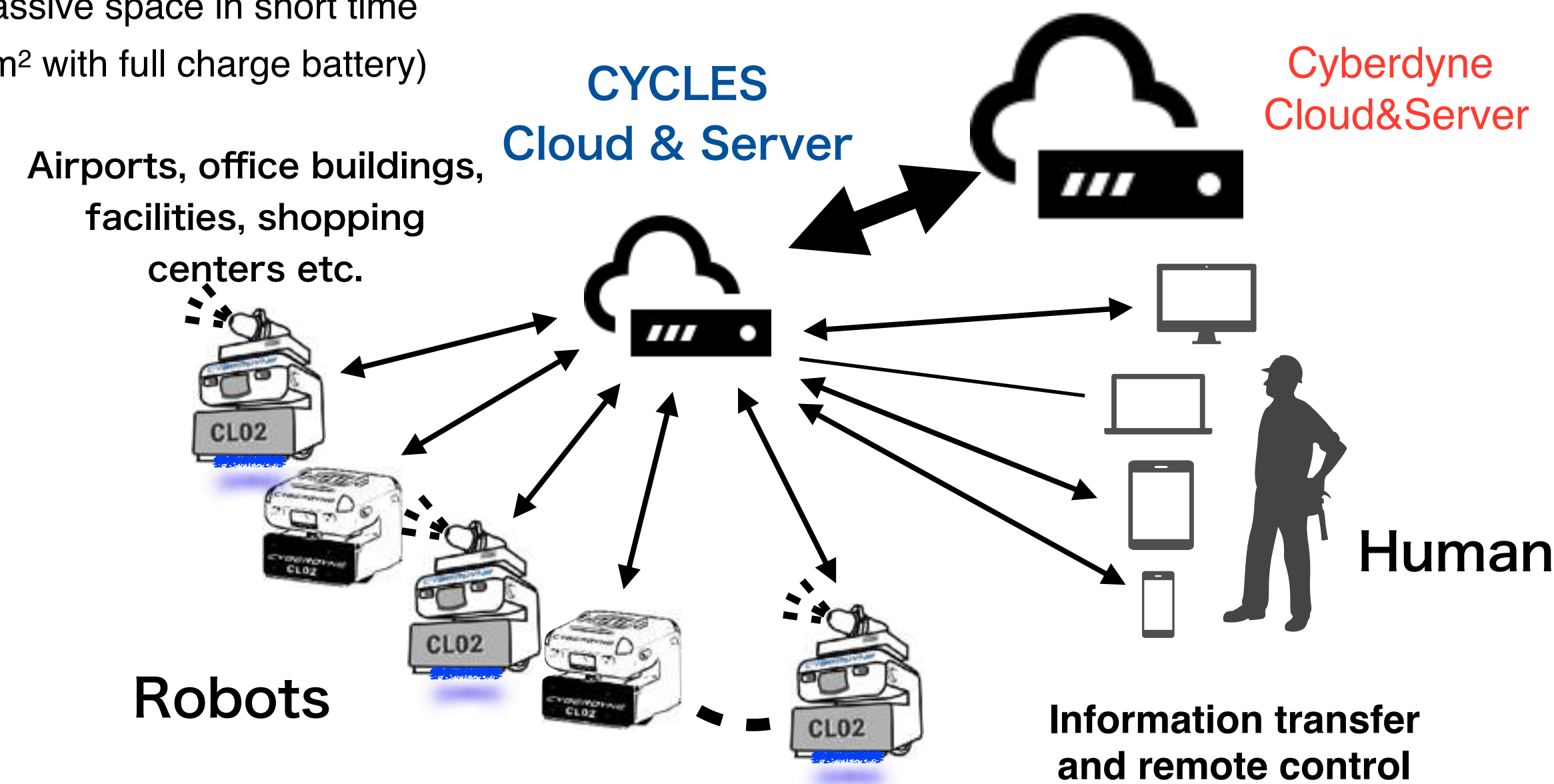
- **Dust distribution map** (visualizes result of the task)
- **Navigated route** (to create efficient and effective cleaning plan)

### Automatically rides on the elevator

- **Elevator interface unit developed inhouse** (Can connect to elevators developed by multiple vendors)
- **Can work on multiple floors** (Expands the space that can be cleaned)

### Cloud linkage

- **“CYCLES” designed for the Robot** (realizes high usability and management)
- **Integration with the base system**



### Topics

- 1) Can now work in office buildings (Interlocking with building systems)
- 2) Expansion of mobility applications (Transport robots in factories, etc.)

## SDGs for Society 5.0/5.1

# Four projects that contributes to achieving SDGs



**10** REDUCED INEQUALITIES



## Develop Cybernics Technology to support people with reduced physical function

### Main initiatives

- Disseminate Cybernics Treatment that promotes functional improvement and regeneration of the brain, nervous system, and muscular system using a Wearable Cyborg HAL, as a global standard treatment
- Disseminate Wearable Cyborg HAL to improve the level of care required by the elderly and prevent severe illness and prevent frailty and maintain independence as physical functions decline with age
- Develop Cyin for Living Support for people with severe disabilities who cannot speak or write as they wish due to the progression of intractable diseases to communicate and operate machines without speech or physical movement



**3** GOOD HEALTH AND WELL-BEING



## Health Risk Management with Cyberdyne Cloud

### Main initiatives

- Develop Cyberdyne Cloud to accumulate, analyze, and perform AI processing of big data on people and things (IoH/IoT big data) obtained through all Cybernics Technologies equipped with communication functions
- Realize personalized healthcare through Cyberdyne Cloud
- Develop sensing technology to monitor vital information daily
- Develop HAL at Home as a new service that can share user's information on their training sessions conducted at home using HAL with medical and care facilities



**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE



## Form social infrastructure to create the Cybernics Industry

### Main initiatives

- Establish a system to support companies and human resources that develop and deploy technologies and services that solve social problems
- Construct Cybernics Innovation Base to promote innovation in the medical and biotechnology fields
- Continue the projects at the Next-generation multi-purpose robotized production facility to induce innovation in the production field



**11** SUSTAINABLE CITIES AND COMMUNITIES



## Realize Society 5.0/5.1, a future society that accelerates innovation

### Main initiatives

- Develop mobility technologies that are safe, affordable, and ready for use by all people
- Develop a future city where all people, including the elderly and disabled, can easily access public spaces.
- Establish educational institutions that develop knowledge and skills to help people.
- Create shared spaces that promote innovation and scientific research and areas for field testing

# Develop Cybernic Technology to support people with reduced physical function

10 REDUCED INEQUALITIES



## Main target

**10.2** by 2030 empower and promote the social, economic and political inclusion of all irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

## Our contribution

By developing the Wearable Cyborg HAL for medical and welfare fields, and Cyin for Well-being to support severely disabled to communicate their intentions, we are supporting the elderly and disabled person by maintaining and improving their functions. We also help them express what they have in mind.

We also develop another type of HAL to support people engaged in heavy work.

This project promotes the empowerment of these people and their social, economic, and political inclusion.



Cybernic Treatment Center and Medical HAL



Cyin for Living Support to support severely disabled person on their communication



HAL Lumbar Type to support various heavy work

## Disseminating Medical HAL as a global standard treatment

As of the end of March 2023, HAL for Medical Use is available in 20 countries and regions, including Southeast Asia and South Asia, as a treatment technology for stroke, spinal cord injury, and intractable neuromuscular diseases.

In addition, to contribute to solving the needs of developing countries, we have been selected by the Japan International Cooperation Agency (JICA) to conduct a research project in Brazil.

We will continue to disseminate the technology.

## Post-discharge care at the Robocare Center

For those who want to keep improving their physical functions after they get discharged from the hospital, we offer Neuro HALFIT at self-funded rehabilitation facilities called RoboCare Center. As of the end of March 2023, they are 17 centers around Japan. A user can also access similar programs at self-funded rehabilitation facilities with which we have cooperative relationships.

In addition, we have formed alliances with private insurance companies such as Daido Life, AIG Insurance, and Sompo Japan to cover the cost of such programs for their policyholders.

We will continue our efforts to improve physical and economic access.

## Improving the working environment

Job turnover due to the onset of back pain and the deterioration of performance caused by frequent heavy lifting is becoming a significant issue in nursing care, construction, and logistics.

The Company develops HAL Lumbar Type to reduce the risk of developing back pain by reducing the load applied to the lower back. The technology empowers people engaged in heavy lifting and enables the worker to continue working longer and safer.

As of the end of March 2023, 1,557 units of HAL Lumbar Type were in operation.

This product is currently available in Japan and the UK. We will continue to disseminate the technology to more countries and regions.

## Supporting communication for the severely disabled

We develop Cyin for Living Support, which enables people with severe disabilities who cannot speak or move their bodies due to the progression of intractable diseases to communicate and operate devices.

The product is available on the market. Daido Life Insurance donated the product to several patient groups and patient support groups to promote this endeavor.

We will continue to work on additional functions and offer the product outside of Japan once it is ready.



# Health Risk Management with Cyberdyne Cloud



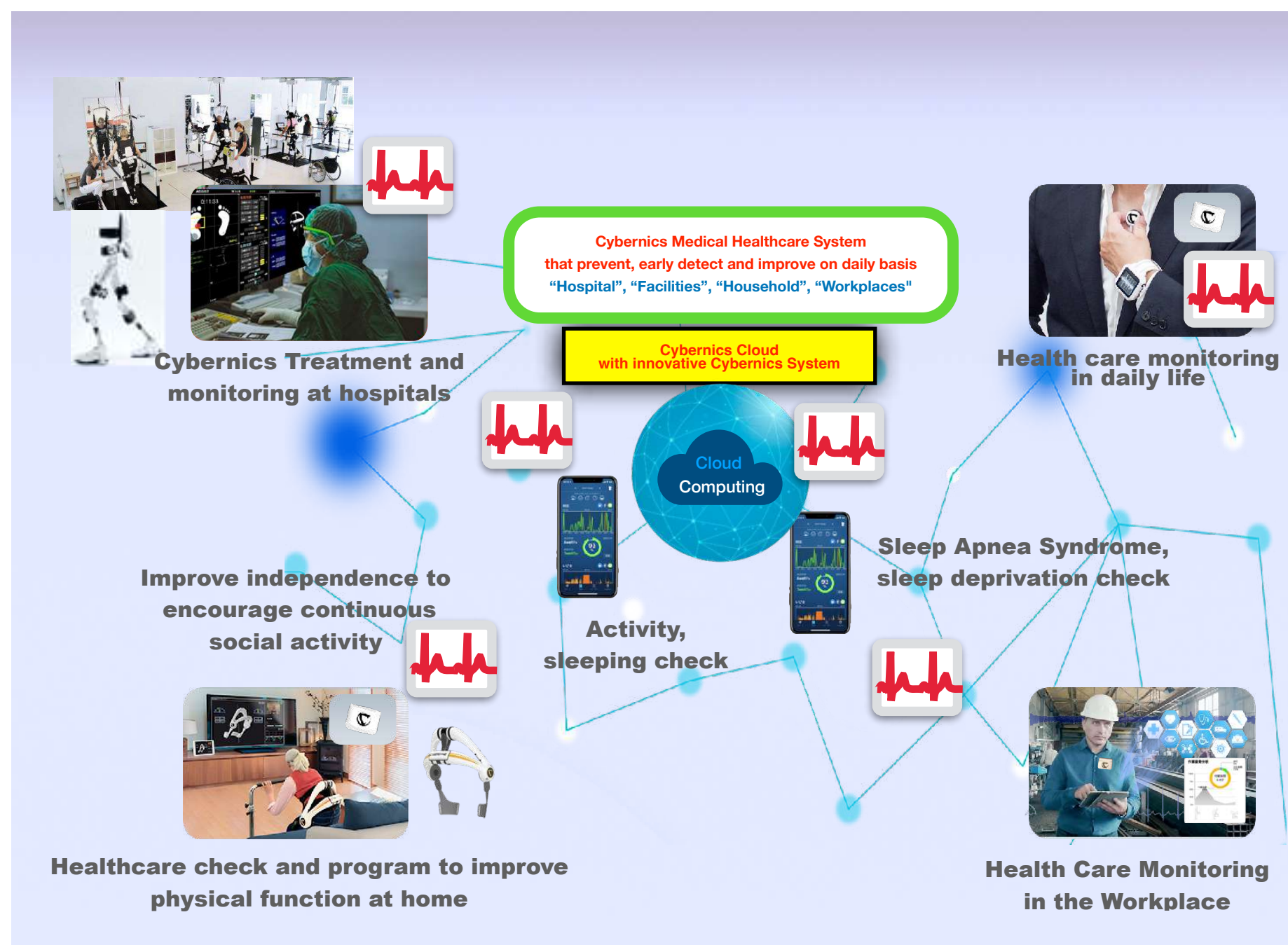
## Main target

**3.d** Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

## Our contribution

Cybernetics Technology deployed in various fields such as medicine, nursing-care, production, and other workplaces with households, integrally connects people's internal information (brain nerve information, physiological information, etc.), people's external information (behavioral information, lifestyle information, etc.), and environmental information with a supercomputer.

The Company works on the system that accumulates, analyzes, and AI processes all the loH/loT Big Data obtained through this process, contributing to personalized medicine, early warning of health risks, and enhancing risk mitigation and risk management capabilities.



## Release of Cyberdyne Cloud

The Company develops Cyberdyne Cloud to connect different fields and provide feedback on health risks based on loH/loT Big Data. In Japan, a system that allows users to send information on their training sessions from home to a facility and receive timely support from the facility is already in operation from November 2020.

We will continue to expand this system to other fields according to the development of products and services. We will also offer the system outside Japan to contribute to health management in all countries, including developing countries.

## Realizing personalized healthcare

By accumulating, analyzing, and AI-processing loH/loT Big Data related to a single user across different fields, we will realize personalized healthcare that will maximize the effect and safety of that user.

This initiative is being carried out simultaneously with the formation of loH/loT Big Data for all users. We will continue to expand this system to other fields according to the development of products and services. We will also offer the system outside Japan to contribute to health management in all countries, including developing countries.

## Developing vital sensing technology

In addition to developing the Wearable Cyborg HAL and autonomous navigation technology, we are developing sensing technology to prevent and detect diseases.

For example, commercialization of Cyvis, an ultra small-sized vital sensor to detect arteriosclerosis and arrhythmia at an early stage, and a photoacoustic imaging device to enable real-time analysis of capillary information.

By promoting these products, we will accumulate important vital information that will lead to the prevention and early detection of diseases, thereby contributing to the enhancement of capabilities for health risk management.

## New service: HAL at Home

HAL at Home is a new service that enables safe and effective training at home. HAL at Home also realized the visualization of exercise information and remote online support by professional staff through HAL's built-in communication functions.

The Company is also working to expand home visiting services so that seniors who have concerns about handling digital devices can also engage in the program.

# Form social infrastructure to create the Cybernic Industry



## Our contribution

We are working to create an inclusive and sustainable industry called Cybernics Industry by building an innovation ecosystem called C-Startup and facilities to accelerate innovation in medicine/biotechnology and production.

### Main target

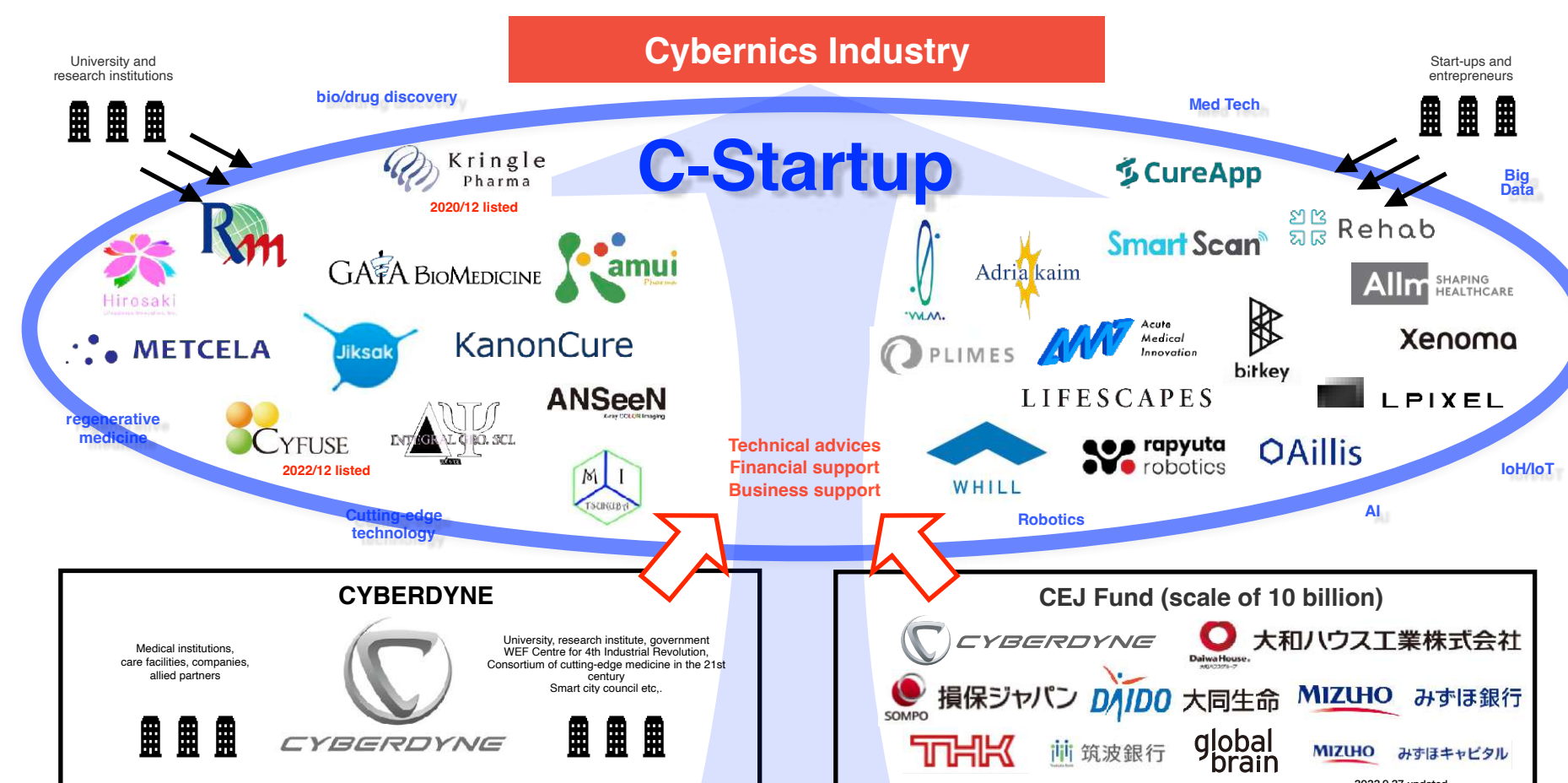
9.2 Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries

### C-Startup, the foundation for the creation of new industries

C-Startup is an innovation ecosystem to create a new industry for solving problems of people and society: Cybernics Industry. We work together with startups and entrepreneurs with similar visions, regardless of their nationalities.

We accelerate creating the Cybernics Industry by providing technical advice by Yoshiyuki Sankai (CEO of CYBERDYNE/Professor of Tsukuba University) and financial support by CYBERDYNE and its related Fund.

As part of this initiative, we have formed partnerships with a total of 31 startups and have invested over 10 billion yen in accumulation to support this endeavor.



### Promoting the vision of the Cybernics Industry

The Company promotes the vision of the Cybernics Industry, a new industry that fuses Human and Cyber/Physical Space, both domestically and internationally. With this initiative, we are leading the efforts to form Cybernics Industry together with industry, academia, and government.

For example, in 2023, we communicated this vision to various countries at the G7 Digital and Technology Ministerial Meeting held in Takasaki City, Gunma Prefecture.

We will continue to share our vision of the Cybernics Industry as a foundation for industrial and technological innovation.



G7 Digital and Technology Ministerial Meeting (2023)



Exterior image

### Construction of Cybernics Medical Innovation Base

We plan to construct the Cybernics Innovation Base in Kawasaki City, Kanagawa Prefecture, as a facility to accelerate innovation in the medical and biotechnology fields. The facility will house a cluster of medical and biotechnology ventures. The Company, universities, and resident companies can conduct a clinical trial in the facility independently and through collaboration.

The facility commenced operation in 2023.

### Activities at the Next-Generation Multipurpose Robotic Manufacturing Base

In Koriyama City, Fukushima Prefecture, we have constructed a next-generation production base to produce robots and devices with Cybernics Technology. In this facility, the Company embedded the skills of experienced workers into the robots so the robots and human workers can work in harmony.

The Company constructed the facility in 2016 and completed a registration to manufacture medical devices in 2020.



Exterior of the facility

# Realize Society 5.0/5.1, a future society that accelerates innovation



## Main target

**11.2** by 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

**11.7** by 2030, provide universal access to safe, inclusive and accessible, green and public spaces, particularly for women and children, older persons and persons with disabilities

## Our contribution

Using innovative Cybernics Technology, we promote the fusion of Human and Cyber/Physical Space to create Society 5.0/5.1. We envision this future society as a techno-peer-supported society where technology and human support each other as partners.

### Creation of Society 5.0/5.1

Society 5.0 is a concept first proposed in Japan's Fifth Science and Technology Basic Plan as the ideal future society. In this society, science and technology connect all people and things, sharing various knowledge and information to create new values never seen before.

We contribute to the creation of Society 5.0 by implementing Cybernics Technology in the various business fields to integrate internal information (brain nerve information, physiological information, etc.), people's external information (behavioral information, lifestyle information, etc.), and environmental information with a supercomputer. As one of the leaders in this challenge, we work to explore the society beyond Society 5.0/5.1.



perspective drawing of the future city

### Mobility Infrastructure

We are working on personal mobility and drones for transportation that is safe, inexpensive, and easy to use, taking into consideration the needs of the elderly and disabled living in the community.

We are also planning cities based on the premise of introducing mobility, which will shorten travel time and create new connections and added value between functions and facilities.

While developing mobility infrastructure in-house, we are also collaborating with startups that are developing related technologies.

### Shared Economy

We plan to shift from the conventional model of occupying information, people, goods, space, and time to a new form of a city where we can share and help each other.

We will work to achieve success with the allies formed in C-Startup. We will also continue to gather people and companies with seeds related to Cybernics and accelerate the creation of innovation through sharing and mutual aid of information, people, goods, space, and time.

### Futuristic housing

Through daily health management and lifestyle support infrastructure based on Cybernics Technology, we will develop housing where all people, including the elderly and disabled, can live in harmony with technology and mutually support each other to ensure peace of mind.

Specifically, various Cybernics Technologies, such as the Wearable Cyborg HAL, autonomous navigation robots, and vital sensors, will be introduced into every space, including residences. Personal health information will be accumulated, analyzed, and processed by AI to be linked to medical facilities to manage each person's health and safety better.

### An educational institution that nurtures the next generation of human resources

Through collaboration between industry, academia, and government, we are planning an educational institution to foster the next generation of innovators.

We will nurture the next generation of innovators with educational institutions ranging from graduate school to elementary school, taught by instructors from various companies.

**This presentation contains forward-looking statements concerning CYBERDYNE, Inc. and its Group's future plans, strategies and performance. Forward-looking statements contained in this presentation are based on information currently available and on certain assumption redeemed rational at the time of creation of this presentation. As such, due to various risks and uncertainties, the statements and assumption does not guarantee future performance, may be considered differently from alternative perspectives and may differ from the actual result.**

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