KIRIA KOREA INSTITUTE FOR ROBOT INDUSTRY ADVANCEMENT

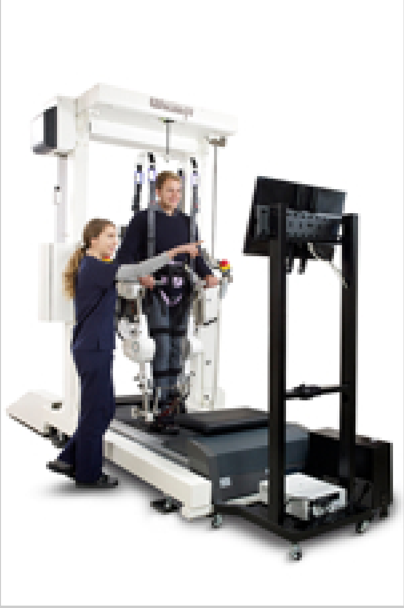
Previous
2016 vol. 5

K-ROBOT NEWSLETTER

KOREA INSTITUTE FOR ROBOT INDUSTRY ADVANCEMENT

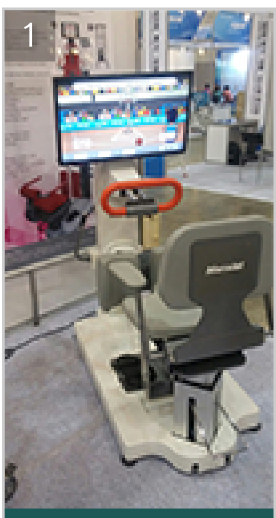
P&S Mechanice Co. Ltd


Walkbot S (For adults)
Walkbot K (For children)

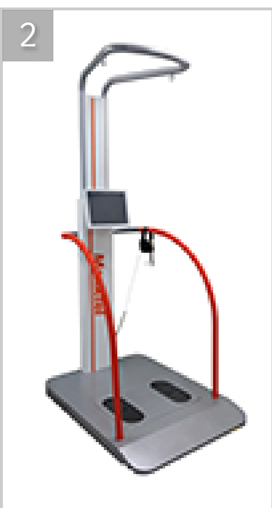

Walkbot G
(adults and children)

P&S Mechanice Co. Ltd
www.walkbot2015.com

Manntel Co., ltd.



Trunk Stability Rehabilitation Robot Balance Trainer



3D Balance Trainer

Rehabilitation robot of upper limbs

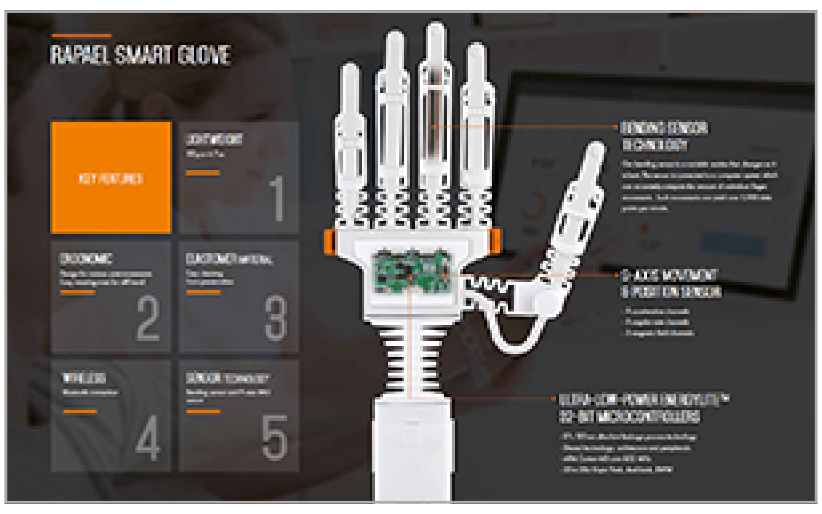
Manntel Co., ltd.

Rehabilitation Robot Business Support Project

The Ministry of Health and Welfare and the National Rehabilitation Center

'Rehabilitation Robot Business Support Project', that The Ministry of Health and Welfare and the National Rehabilitation Center have promoted, has gained its necessity as Korea entered the aged society and the demand was increased in the health right of disabled and the access right for the medical treatment.

Excellent Cases of Distribution Business for Medical Rehabilitation Robots



As the medical institutions which utilize rehabilitation robots have been increased, results of excellent cases have come out one after another. The National Health Insurance Service Ilsan Hospital and Neofect Co., Ltd have actively promoted the business for rehabilitation robots and received an evaluation of accomplishment beyond the expectation.

Status of Korea Exhibition [GITEX 2016]

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K-Robot Newsletter 2016 vol. 5

P&S Mechanice Co. Ltd | Manntel Co., ltd.

Rehabilitation Robot Business Support Project
(The Ministry of Health and Welfare and the National Rehabilitation Center) | Excellent Cases of Distribution Business
for Medical Rehabilitation Robots

P&S Mechanice Co. Ltd

A walking rehabilitation robot, 'Walkbot'

P&S Mechanics Co. Ltd is a representative company in Korea specialized in a robot for rehabilitation training. The company has developed and supplied a robot that can encourage patients with difficulty in walking due to a stroke for their rehabilitation will and strengthen their muscles.

The 'Walkbot' series, a walking rehabilitation robot supplied by the company, supports a good walking for patients with difficulty in normal walking due to stroke, spinal cord injury, external brain injury, multiple sclerosis and cerebral palsy.

The Walkbot consists of a robot mounted on lower limbs, a treadmill, and a weight support. It raises the rehabilitation ability of patients with central nerves by training their walking patterns. When a patient with difficulty in walking wears the Walkbot and walks on the treadmill, it not only strengthens muscle, but also it shall be possible for more precise rehabilitation as patient's data is monitored in real time.

The rehabilitation robot supplied by the company can be largely classified into a walking rehabilitation robot for adult, 'Walkbot-S', a walking rehabilitation robot for children only, 'Walkbot-K', and a 'Walkbot-G' that provides a compatible module of Walkbot-S and Walkbot-K. The Walkbot has been mounted with an automatic control function for the length between joints for the first time in the world, which can create customized unlimited walking patterns by adjusting to the similar physical condition of patient. Therefore, it is possible to provide patients with the optimum walking training. The Walkbot has been evaluated for the result of representative creative economy that has helped the growth of P&S Mechanics as the company of a walking rehabilitation robot mounting on lower limb with international competitiveness.

A walking rehabilitation robot Walkbot

COMMON FEATURES

1. Developed to move hip/knee/ankle joints of lower limbs kinematically without patient's fatigueness and implement a precise and repetitive walking training in a supplementary condition of muscular strength to recover muscular strength or function of damaged lower limbs
2. Realize the movement of ankle joint of robot part for the first time in the world to supplement more precise and natural movement of hip/knee/ankle joints, and prevent a foot dragging that may occur from the patient during training
3. Mount an automatic length control function between joints for the first time in the world, that enables more convenient and effective rehabilitation treatment than the products of competitors. A training is possible with optimized walking patterns for patients by creating unlimited customized walking patterns according to the physical conditions of patients
4. In order to give an interest to the patient and improve neuroplasticity during training, an augmented reality function has been applied, and makes it possible for a pleasant walking training by stimulating hearing (Metronome), sight (Front Camera), and sense (Game/Sport)
5. Device that has been clinically verified without any report of side effects installed in many domestic and overseas hospitals
6. Makes it possible to utilize it for diagnosis and prescription of patients by providing various Assessment Tools(ROM, Stiffness, Force)

Walkbot S (For adults)

Picture	Dimensions
 	390(L) x 168(W) x 257(H) (cm) 1,000kg

Walkbot K (For children)

Picture	Dimensions
 	390(L) x 168(W) x 240(H) (cm) 1,000kg
FEATURES	
The world first robot rehabilitation training system exclusive for children with the application of walking algorithm optimized for children. Walkbot-K equipped with elegant design and various entertaining elements, and optimum training environment for children, helps children enjoy training pleasantly and comfortably to recuperate faster.	

Walkbot G (For both adults and children)

Picture	Dimensions
 	80(L) x 200(W) x 257(H) (cm) 1,000kg
FEATURES	
A robot rehabilitation training system of modul exchange type, which is possible for both adults and children patients to use through the exchange of robot module (separate purchase needed for additional adults or children module)	

P&S Mechanics Co., Ltd has been acknowledged in the global rehabilitation robot market, and especially evaluated for the high competitive price. The Walkbot is competitive in its function compared to 'Locomat' of Hocoma in Switzerland, which is the leading product, yet the price of the Walkbot is only half level. It is the reason that domestic and international professionals of walking rehabilitation training have favored our product.

The walking rehabilitation robot that the company has developed has been distributed to robot utilizing institutions such as National Rehabilitation Center, Seoul National University Hospital, Severance Hospital, Wonju Severance Hospital, and Pusan National University Yangsan Hospital. This walking rehabilitation robot is preparing to advance to not only domestic market but also international market based on the successful commercialization and verification.

The business for rehabilitation robot by P&S Mechanics Co., Ltd is one of successful cases of robot distribution business by the Korea Institute for Robot Industry Advancement. Back in 2011, the company participated for the first time in the distribution business of rehabilitation robot supervised by the National Rehabilitation Center and prepared a footstep for the advancement to the business market for rehabilitation robot. Until the company was selected for the distribution business of rehabilitation robot, the sales performance by the company had been poor regardless of multilateral effort for the development and sales of product.

However, through the robot distribution business, the company has implemented the operation of test bed targeting four nationwide hospitals including Seoul National University Hospital. The company also has accomplished 4.5 billion won sales in the area of rehabilitation robot until now by reflecting demands by hospitals and patients on the activity of product improvement and realizing customer satisfaction.

The next goal by P&S Mechanics Co., Ltd is targeting the overseas market. For this goal, the company has formed a partnership with famous rehabilitation hospitals in the U.S. The company has applied and been selected for the overseas robot distribution business by the Korea Institute for Robot Industry Advancement in 2016. After one year of local clinical test, the company is pressing on the way to target the rehabilitation robot markets in the entire world. Last year, the company participated in the customized export support business by the Korea Institute for Robot Industry Advancement and grabbed an opportunity to advance to the markets of China, Russia and Turkey.

Click on the image

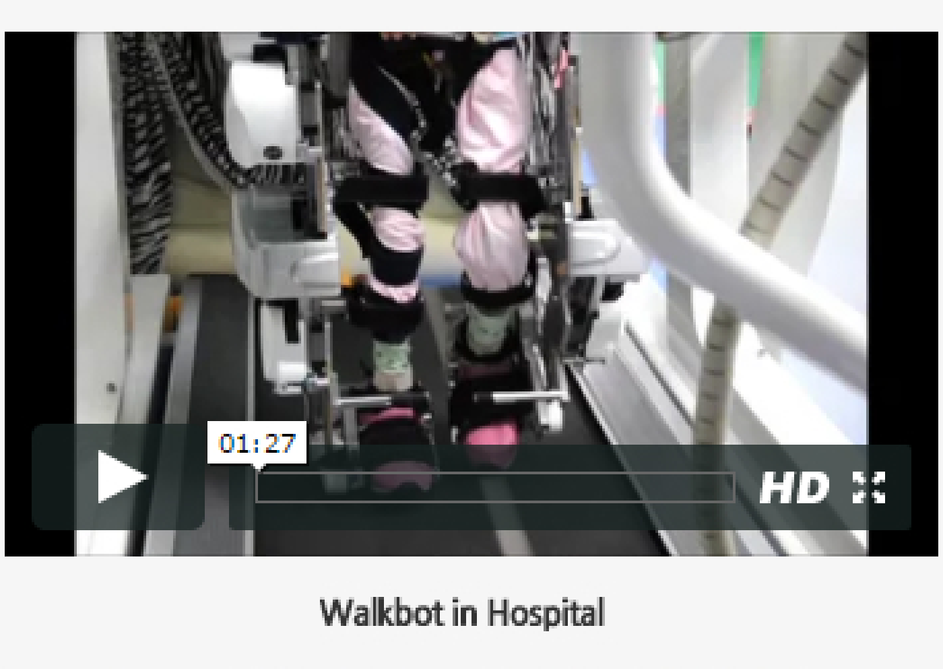
▲Walkbot used in R&D KOREA 2015, KIMES 2011 and Peking University Care Rehabilitation Hospital 2015

Recently, positive news has continued in overseas. In January of this year, the company has been selected for the final supplier at the bid for purchasing the equipment of walking rehabilitation robot by 'Mytishchi regional clinic' in Russia and began exporting in February. Prior to this, the company has participated in CMEF (China Medical Equipment Fair) and successfully achieved the supplier's right from the PKU Care Rehabilitation Hospital. Products installed at PKU Care Rehabilitation Hospital were introduced to CCTV, the national broadcasting company in China, which has prepared a momentum to advertise Korea's rehabilitation robot to the entire area of China. Currently, the company has formed a partnership with the PKU Care Rehabilitation Hospital and established a Walkbot research & education center in PKU to promote rehabilitation robot treatment and user education.

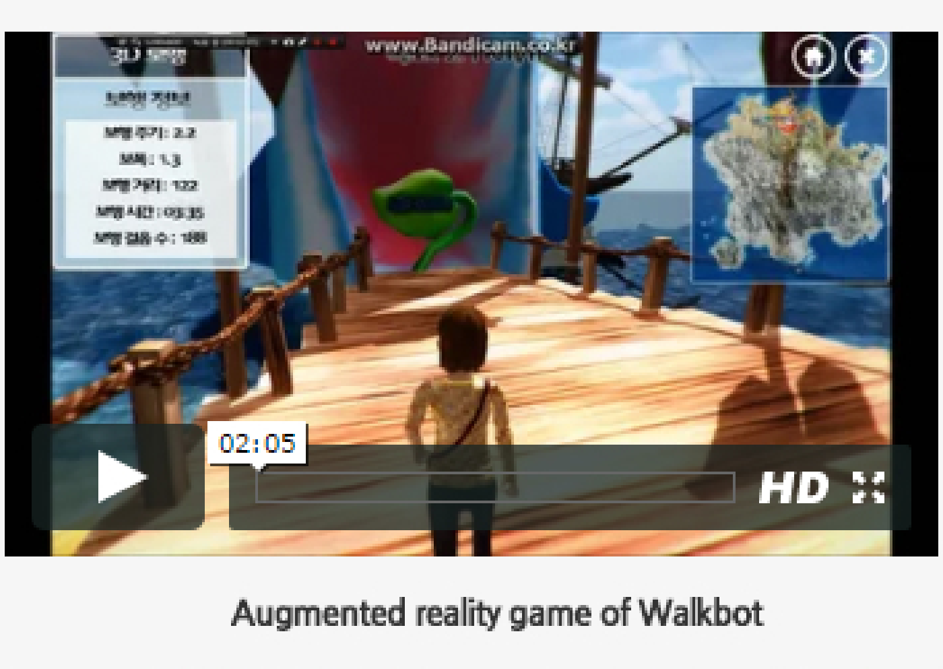
P&S Mechanics has been diligent in trials to graft a new IT technology to the area of rehabilitation robot. Representative one is a plan to graft VR technology to the rehabilitation robot. For this purpose, the company has been developing a technology to operate a robot supportive excercise device with VR jointly with FX, the VR content company. When such device is commercialized, it is expected for the patient of paralyzed lower body to take a rehabilitation training more easily with fun.

The rehabilitation robot of P&S Mechanics Co., Ltd is a hope in domestic rehabilitation robot industry in a sense that the purpose of rehabilitation pursues a complete restoration to daily life not just maintaining or improving current condition. Especially P&S Mechanics Co., Ltd has been pressing on the technological development of customized rehabilitation robot, predicting that the customized rehabilitation shall be the huge flow in the area of rehabilitation in the future.

P&S Mechanics has been one of exemplary cases in the area of domestic rehabilitation robot that has pioneered the difficult area of rehabilitation. Recently, the company has received attention by expanding beyond domestic market and spreading a new challenge toward overseas markets.

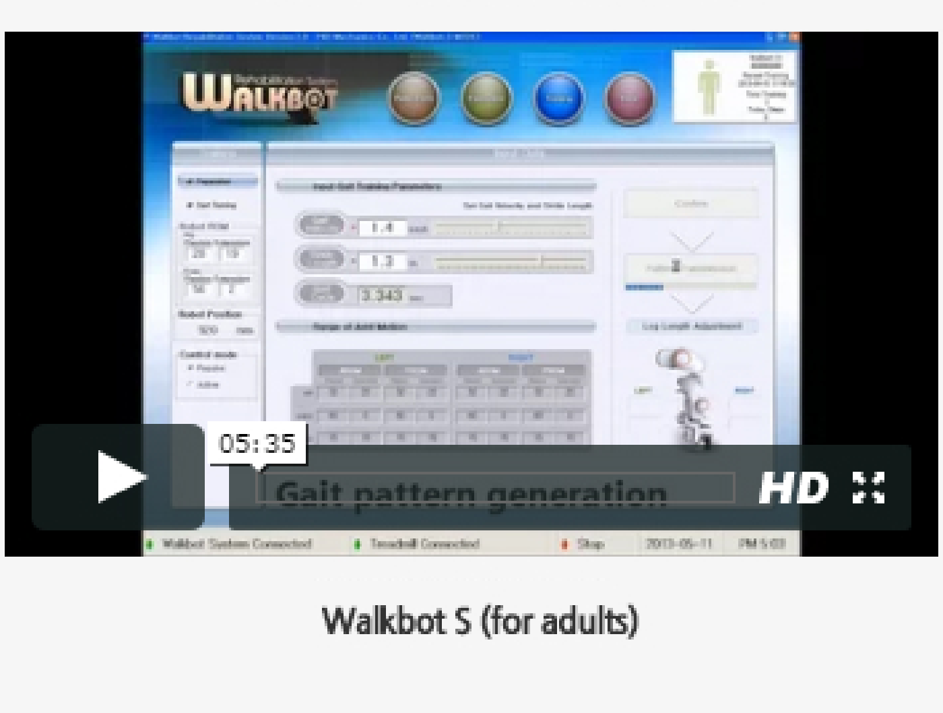


Walkbot in Hospital



Augmented reality game of Walkbot

Walkbot K (for children)



Walkbot S (for adults)

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ICROS Institute of Control, Robotics and Systems

Manntel Co., ltd.

Trunk Stability Rehabilitation Robot Balance Trainer / 3D Balance Trainer / Rehabilitation robot of upper limbs

Manntel, a company specialized in rehabilitation robot, has developed rehabilitation robots such as a trunk stability rehabilitation robot balance trainer, 3D balance trainer, and a rehabilitation robot of upper limbs; and has been acknowledged for its technical skill in domestic and overseas. Mainly, the company has supplied a rehabilitation robot that increases muscle and balance sense of stroke patient, aged, and athletics and been emerged as a new power in the area of rehabilitation robot. Especially, the world has entered the aged society around advanced countries, people have shown their interest in this company's rehabilitation robots and rehabilitation medical equipments everyday.

Trunk Stability Rehabilitation Robot Balance Trainer

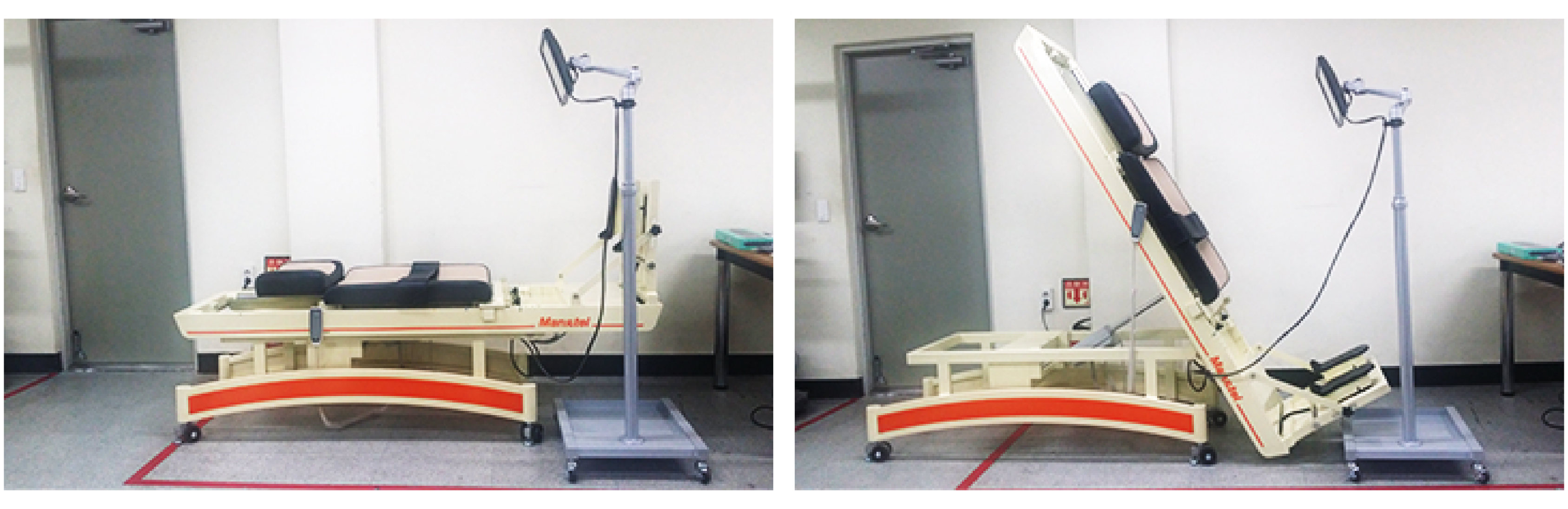
3D Balance Trainer

Rehabilitation robot of upper limbs

▲ Rehabilitation robot of upper limbs

Manntel Co., Ltd, which was established in 2000, is the company that has originally focused on the high-tech education system. The company has developed various IT based educational practice equipments such as RFID, Home Network, and LTE; and has been acknowledged for technological skill in this area. The company has delivered relevant practice equipments to educational institutions and research centers in 51 countries for the last 15 years. However, the company started a business for rehabilitation medical devices back in 2009 as the company believed that the demand for rehabilitation medical devices had been increased while the number of degenerative disease by aged had been increased and the will of rehabilitation by disabled had been increased. Manntel Co., Ltd challenged the development of various rehabilitation robots while entering the business for rehabilitation medical devices. This area has not attracted interest in domestic, but the company has devoted to the development of new product with a sense of mission.

Out of such devotion, a representative rehabilitation robot of Manntel Co., Ltd, 'BalPro' was born. With BalPro, aged and patients of minor illness can achieve the effect of muscle strengthening on upper and lower limbs, balance training, improvement in recognition function, and stress relief while they do exercise with fun through games. The product has been settled as both medical device and exercise equipment that grafted ICT with medical treatment technology; and has become the one that can be used easily not only by aged or disabled but also by office workers, housewives and common people. Manntel Co., Ltd has supplied rehabilitation robots to National Rehabilitation Center, Bundang Rehabilitation Hospital, and Seoul National University Bundang Hospital; and has increased its recognition in domestic market.



▲ A representative rehabilitation robot of 'BalPro'

www.manntel.com

Manntel Co., Ltd has also supplied three dimensional balance training machine. It is a rehabilitation device that can help stoke patient or industrial disaster patient, injured soldiers or athletics to recover muscle strength of lower limb and balance ability through weight movement training and knee bending training.

Besides this, the company has developed an electric powered patient lift that can easily move a patient of uncomfortable body, which attracts people's attention. It is possible to set disabled patient or aged on the lift at home and move them while they lie down.

The technical skill of Manntel Co., Ltd can be well known by the number of procured patents. The company has currently procured 14 patent technologies in the area of rehabilitation medical device. The company also has acquired a permit of manufacturing items and manufacturer and a certification of KGMP (Korea Good Manufacturing Practice) by the Ministry of Food and Drug Safety.
A rehabilitation robot of trucus stabilization and a three dimensional balance training machine have received a certificate from the U.S FDA, which gives a green light for pioneering overseas market.

The company has the past record of product exportation to Russia, Philippines, India and China. Especially, the company supplied the rehabilitation robots to the military general hospital in India and opened a path to supply rehabilitation training robots to military hospitals in entire areas of India in the future.

The company has been actively participated in domestic and overseas exhibitions. Overseas buyers have continued to visit the company. Buyers from Russia, China and Denmark visited the booth during the 'The 9th Welfare & Rehabilitation Senior Exhibition' held in Pusan in January of this year. They showed a high interest in various rehabilitation medical devices, a smart medical treatment training machine exclusive for the aged, and an electric lift for patient.

Beginning of this year, the company has participated in CMEF in Shanghai and FIME in Florida, Miami of the U.S and focused on raising the recognition in a global market.

The company has expanded alliances with overseas medical treatment companies in full scale in order to advance to the overseas markets. The company has entered into an alliance with Neurotech, a professional company in brain rehabilitation in Russia, and grafted the bioassay and brain wave analysis of Neurotech with the muscular strength balance exercise machine to develop a new rehabilitation medical device. Through a buyer from Beijing in China, The company has also supplied a rehabilitation robot to Chinese hospital and proceeded a clinical test. The company expects to advance to Chinese market in full scale starting from the next year if the company can acquire license and permit from CFDA (Chinese Foods & Drug Administration) by the end of this year.

The rehabilitation medical device is not only an area which requires an integrated technology but also has a characteristic of high added value. Especially, entering the aged society, its necessity is increasing higher. Except, there exists a distinct characteristic to develop a product that should be directly related to the health problem of man. Accordingly, its process of product development is complicated and a high barrier of market entry acts as a burden even after the product development.

Even under such situation, the company has led product development and commercialization with the support of robot distribution project by the government. But also the company has participated in domestic and overseas exhibitions and put a great effort to enhance its brand. Manntel Co., Ltd will observe with keen interest whether the company shall accomplish the dream to be the best in the market for rehabilitation robot.

The following shows the detail information of relevant robot.

NAME OF PRODUCTS	DIMENSIONS	FEATURES OF PRODUCTS
Trunk Stability Rehabilitation Robot Balance Trainer	735(W) × 1,600(L) × 1,500(H)mm 165kg	1. Conduct training for standing up with the help from robot 2. Five types of truncus stabilitation through games and function of rehabilitation training and evaluation for lower limbs 3. Real time Bio-feedback training 4. Active training device centered at patient
Rehabilitation Robot of Upper Limbs	700(W) × 1,300(L) × 700(H)mm 74kg	1. Multi purpose (horizontal, slant and vertical movement) & multi function (resistance, supplementation, active and passive excercises) rehabilitation devices 2. Setting of work range through ROM analysis on patient 3. Training & evaluation function through games
3D Balance Trainer	866(W) × 1,190(L) × 2,183(H)mm 142kg	1. Strengthening of lower limb muscular through the knee bending training by utilizing tilt sensor 2. Active rehabilitation device through games 3. Training and evaluation of lower limb balance and muscular strength & data recording function
BalPro	1,370(W) × 2,710(L) × 2,000(H)mm 130kg	1. Training Upper & Lower limbs muscular strength of Senior 2. Training Balanced skill strength and Measuring 3. Exercis programs through a variety of games 4.Training equipment combines the medical technology ICT

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Rehabilitation Robot Business Support Project
(The Ministry of Health and Welfare and the National Rehabilitation Center)

Excellent Cases of Distribution Business
for Medical Rehabilitation Robots

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(The Ministry of Health and Welfare and the National Rehabilitation Center)

'Rehabilitation Robot Business Support Project', that The Ministry of Health and Welfare and the National Rehabilitation Center have promoted, has gained its necessity as Korea entered the aged society and the demand was increased in the health right of disabled and the access right for the medical treatment.

'Rehabilitation Robot Business Support Project' has prepared a utilization basis of robot in clinic and daily life by providing treatment robot and daily life robot to relevant facilities such as hospitals. The project also has a goal to provide an opportunity for relevant companies of medical rehabilitation robot to procure a new domestic and overseas markets.

The National Rehabilitation Center has set a strategy to supply robots focusing on the development of a care robot for bowel movement and a training robot for walking rehabilitation as the demand has been increased for a robot for the medical treatment support and movement support and for the reduction of the duties of nurse and care assistant.

Currently, 'The Distribution Project for Medical Rehabilitation Robot in the National Rehabilitation Center is supervising the distribution project for medical rehabilitation robot. The project group for the distribution of medical rehabilitation robot is in charge of duties such as the selection and management of utilizing institutions, the distribution of robots, the assistance in marketing, the assistance in clinical verification, and the management in service & research.

In order to promote such works effectively, the distribution project group has selected CURACO Co., Ltd and SG Mechatronics Co., Ltd as a detail supervising institution, the specialized companies for medical purpose robot to proceed the project. These companies have supplied 12 units of care robots for bowel movement and 4 units of wearable walking assistance robot to four national rehabilitation centers and four rehabilitation hospitals for the test.

The care robot for bowel movement is scheduled to be supplied to patients in rehabilitation medicine, orthopedics, neurosurgery and patients for quarantine in need of bowel movement care or externally injured aged with uneasy movement and disabled. The wearable walking assistance robot is scheduled to be supplied as a daily life support for paralyzed patient such as peripheral nerve disease and muscular atrophy and an exercise support tool for a patient of geriatric disease.

▲ The care robot for bowel movement & The wearable walking assistance robot

The National Rehabilitation Center plans to actively promote the procurement of clinical data and the deduction of improvement matters through the utilization of medical rehabilitation robot. For this purpose, medical rehabilitation robots have been distributed around rehabilitation hospitals and general hospitals such as the National Rehabilitation Center to prepare the systemized clinical data

Examining the promotion schedule of this year's project, the national rehabilitation center shall finish the manufacturing of medical rehabilitation robot by November of this year and install robots from December to operate by July of next year. Moreover, the National Rehabilitation Center has decided to promote domestic and overseas licenses and permits for a robot for bowel movement care and a robot for wearable walking assistance.

In order to accomplish a successful project for medical rehabilitation robot, it is important to reflect the insurance cost. The project group for the distribution of medical rehabilitation robot consists of 'the insurance cost promotion supervising groups' around professionals of institutions such as Ministry of Food and Drug Safety, National Evidence based Healthcare Collaborating Agency, Health Insurance Review and Assessment Service, Korea Testing Laboratory, and Korean Academy of Rehabilitation Medicine. The project group plans to create a basis for the entry of insurance cost and official payment through the coop eration with auto insurance and industrial disaster insurance companies.

The National Rehabilitation Center is presenting an important project goal of medical rehabilitation robot project for the advancement to the overseas markets along with the domestic distribution. It has a meaning of finding a new solution to the domestic medical robot industry through the overseas exportation of medical rehabilitation robots. For this purpose, the distribution project group for medical rehabilitation robot in the National Rehabilitation Center has established and operated an export assistance cooperative group around KOTRA, Korea Medical Devices Industrial Coop. Association, Korea Health Industry Development Institute, and Korea Testing Laboratory.

The National Rehabilitation Center has enthusiastically promoted overseas PR and marketing for domestic rehabilitation robots. The Center plans to actively participate in exhibitions of 'Arab Health' in Dubai, H.C.R in Japan, 'Medtrade' in Las Vegas, U.S.A including 'MEDICA', an international rehabilitation welfare exhibition in Germany to introduce the technical skill of domestic medical purpose robots to overseas. The Center will perform an assistance activity for the discovery of overseas purchasing companies and overseas certifications, and international standardization in parallel with such effort.

Having a momentum of the distribution project for medical rehabilitation robots, a green light has turned on the industry of medical rehabilitation robot. An integrated service for nurse and care assistant has been implemented since 2016, which results in the increase in demand of robots for bowel movement care around 400 appointed service institutions. It is expected to expand to nationwide hospitals and clinics in the future.

CURACO Co., Ltd - Care robot for bowel movement(Nursing Smart Bidet)

more +

Main Body Unit :

W : 420 mm
D : 708 mm
H : 490 mm
Weight : About 23 kg ± 0.5 kg

Diaper Cup :

L : 2,000 mm (Length of hose)
Weight : About 3.5 kg ± 0.5 kg

Water Temperature :

20 ℃ - 39 ℃ (1 ℃ Adjustable)

Treatment Methods

Excrement Treatment :

Water/Air Spray and Vacuum Suction

Sterilization :

UV Sterilization Lamp (Expendable)

Deodorization :

Activated Carbon Air Purification Filter (Expendable)

Power Supply :

Rated Voltage : AC 100 V, 50 - 60 Hz
Power Consumption : 1,300 W
Standby Power : 12 w

Sensor :

Urine and Feces Detecting Sensor

Treatment Capacity :

Water Tank : 4,600 cc
Sewage Tank : 5,000 cc

Accessories :

Diaper Cup Cover, Remote Controller, Air Mattress, Cup Slider, User's Manual, etc.

Harmful Gas Removal :

Activated Carbon Air Purification Filter (Expendable)

Fine Particles Treatment :

HEPA (High Efficiency Particulate Air) Filter (Expendable)

Mechatronics Co., Ltd - wearable walking assistance robot(Angelegs)

more +

A Robotic Suit for Daily Assistance

ANGELEGS assists lower-limb motions of people with partial or temporary impairments. The target users include musculoskeletal disease patients, patients under rehabilitation treatments, and the elderly. The special technologies of ANGELEGS will improve the quality of your daily life.

Transparent Actuation Technology
Natural assistance without discomfort

Assistance As Needed
No limitation in the range of motions to be assisted

High Energy Efficiency
Specialized energy management system

Enhanced Safety
Mechanical and electrical safety systems

Sensorless Intention Recognition
Human intention recognition without bioelectric sensors

Aesthetic Design
Customizable braces and frames for the best comfort and satisfaction

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The rehabilitation robot has formed a market around patients of spinal injury, stroke, Parkinson's disease, youth's cerebral palsy, and geriatric sacropenia. Especially, as the number of stroke patients has been increased, the distribution of rehabilitation robots is expected to increase.

Excellent Case 1.
National Health Insurance Service Ilsan Hospital-Morning Walk

(Jointly developed by Hyundai Heavy Industries/Seoul Asan Medical Center)

The National Health Insurance Service Ilsan Hospital has promoted the yearly introduction and utilization of rehabilitation robots for the patients of stoke, spinal injury, youth's cerebral palsy, Parkinson's disease, and geriatric sacropenia due to chronic wasting disease by the year 2019 from 2016. The Ilsan Hospital has led the improvement in the function of rehabilitation robot through various verification works. Especially, the Ilsan Hospital plans to identify safety and problem at the time of walking robot treatment with a type of End Effector and to promote the improvement activity continuously with manufacturers of robots.

Last year, the Ilsan Hospital was selected for a robot utilizing institution of the distribution business for medical rehabilitation robot. Since September in last year, the Ilsan Hospital has performed tests for the function targeting patients after the introduction of a rehabilitation robot so called 'Morning Walk'. Patients of utilization target are total 109 people of hemiparalysis and diplegia due to stroke(59), paralysis on lower and upper limbs due to spinal injury(29), pediatric cerebral palsy(14), Parkinson's disease (3), Guillain-Barre Syndrome(3), and progressive muscular dystrophy (1). Monthly use hours and number of patients have been maintained for a continuous increase.

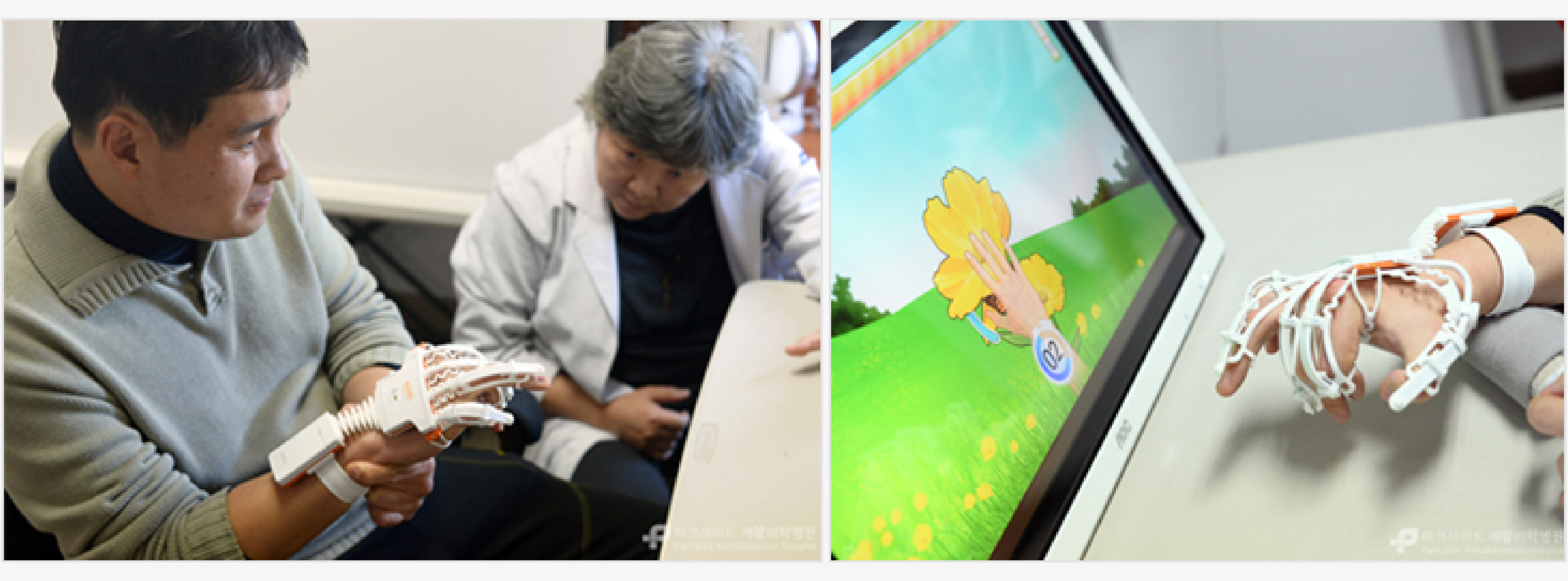
▲ (Left)'Morning Walk' installed in Robot Walking Treatment Room in Ilsan Hospital
(Right) Appearance of Actual Use of Morning Walk installed in National Rehabilitation Center

In order to evaluate the business performance of walking rehabilitation robot, it is important to inspect and evaluate the target values such as use hours of walking rehabilitation robot, patient's satisfaction, and therapist's satisfaction. In order for the survey on the satisfaction for the rehabilitation robot treatment, the Ilsan Hospital has prepared evaluation sheets targeting patients and therapists and proceeded an evaluation work.

The Ilsan Hospital plans to gather strength to deduce the matters to improve robots based on the use status of rehabilitation robots during the first fiscal year of the business for robot distribution. The Ilsan Hospital has continued the improvement, correction and supplementation works for the problems through the periodic team conferences for more than once a month with the participation from doctors of rehabilitation medicine, exclusive therapists and manufactures. The treatment by rehabilitation robot is not always successful. There were cases of stopping robot treatment by some stroke patients in the middle of treatment who showed low recognition and low concentration. Some patients of spinal injury stopped robot treatment as a phenomena of low proprioception and unstable ankle joint had occurred. Such cases have been utilized for significant data to improve utilization measures of rehabilitation robots.

Excellent Case 2.
Neofect Co., Ltd - Rafael Smart Glove

While the Ilsan Hospital is a demanding company, Neofect Co., Ltd, a starter company in the area of rehabilitation robot, has selected a new technology to develop and supply the rehabilitation robot. The Neofect Co., Ltd is another excellent case of the business for rehabilitation robot. This company has been supplying a rehabilitation medical treatment device, 'Rafael Smart Glove'. This glove is a rehabilitation robot that is being used by patients of paralyzed hands due to a stroke. The rehabilitation robot of Neofect Co., Ltd has been evaluated positively in a point that the company grafted the technology of medical treatment robot with game. Such point has been accepted for a fresh trial that patient can receive rehabilitation that may easily become bored while enjoying games. Combining the recovery of exercise ability with a fun element of game, it has been expanding the base of rehabilitation robot.



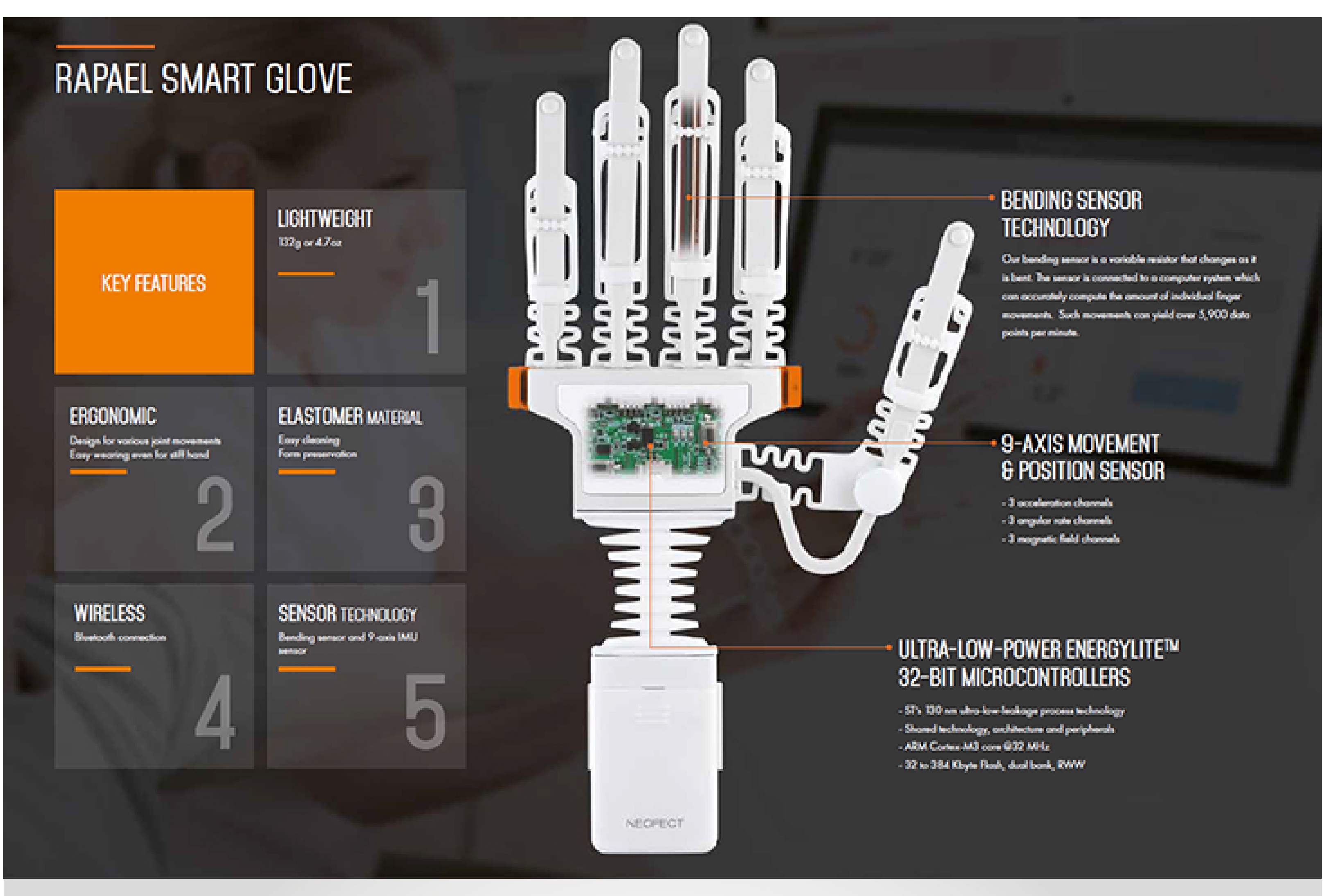
▲ Rafael Smart Glove used in Parkside Rehabilitation Hospital

A patient who needs a rehabilitation treatment can train his fingers, wrist and arms while wearing Rafael Smart Glove and playing about forty types of games such as 'Catching Blowfish'. In addition, the weight of glove is light to carry around easily so that it has a merit to receive the rehabilitation training without limitation by place. The AI (Artificial Intelligence) technology has been selected to propose suitable games suitable for the level of patient. It is possible for a medical team to prescribe while looking at the saved training data.

The Rafael Glove has currently received certificates from Korea, The U.S and Europe and been used in 10 giant hospitals including National Rehabilitation Center and Seoul National University Hospital. A reason for the good evaluation received in domestic and overseas markets is the product's half price compared to that of overseas product.

Through the reinforcement of clinical cooperation with domestic major hospitals and the product development test, Neofect Co., Ltd has improved the function continuously and begun targeting mainly on The U.S the largest market in the world and Germany the largest market in Europe. Last year, Neofect Co., Ltd established a legal firm in San Francisco and began the sales in the U.S. It has shown a quite well performance. The sales have gathered momentum more after the announcement of clinical thesis in last March stating that the robot rehabilitation helps the actual health recovery.

Neofect Co., Ltd has a plan to target Japanese and Chinese markets through the strategic alliance with local companies. During the first half of this year, the company presented a prototype in the International Society of Physical and Rehabilitation in Kuala Lumpur, Malaysia and received a good response. Besides this, Neofect Co., Ltd has actively participated in exhibitions in relation to medical devices held in several countries and enthusiastically put an effort for product PR. Neofect Co., Ltd will not only develop various wearable rehabilitation medical devices as well as Rafael Glove for household, but also has a vision to tell the excellency of domestic rehabilitation devices widely in the world market.



KIRIA KOREA INSTITUTE FOR ROBOT INDUSTRY ADVANCEMENT

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