

The background of the slide is a light gray gradient, decorated with numerous realistic water droplets of various sizes. Some droplets are large and prominent, while others are small and scattered. They are positioned around the central text, with some appearing to be on the left side and others on the right side, creating a clean, modern aesthetic.

REHABILITATION TECHNOLOGY FOR PEOPLE WITH SPINAL CORD INJURY IN JAPAN

Jonathan Wong

Community Rehabilitation Service Support Centre

Hospital Authority

8th May 2018

@JAPAN

Sep 25th – Oct 9th 2017

- Cyberdyne Studio

@筑波市 茨城県 Tsukuba, Ibaraki Prefecture

- Fujita Health University

- Robotic Smart Home

@豊明市 愛知県 Toyoake, Aichi Prefecture

- Home Care & Rehabilitation Exhibition

@東京 Tokyo

- Shonan Robo Care Center

@藤沢市 神奈川県 Fujisawa, Kanagawa Prefecture

@Cyberdyne Studio

筑波市 茨城県 Tsukuba, Ibaraki Prefecture



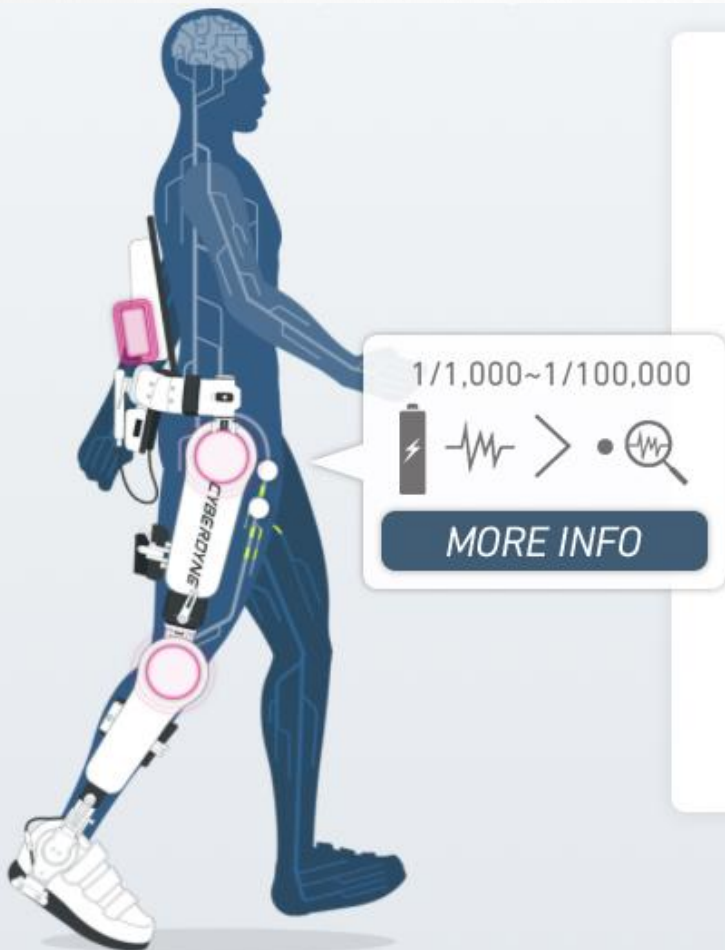
HYBRID ASSISTIVE LIMB (HAL)

Exoskeletons for facilitating walking for people with paraplegia

可能性へ踏み出す、HAL®の大きな一歩。

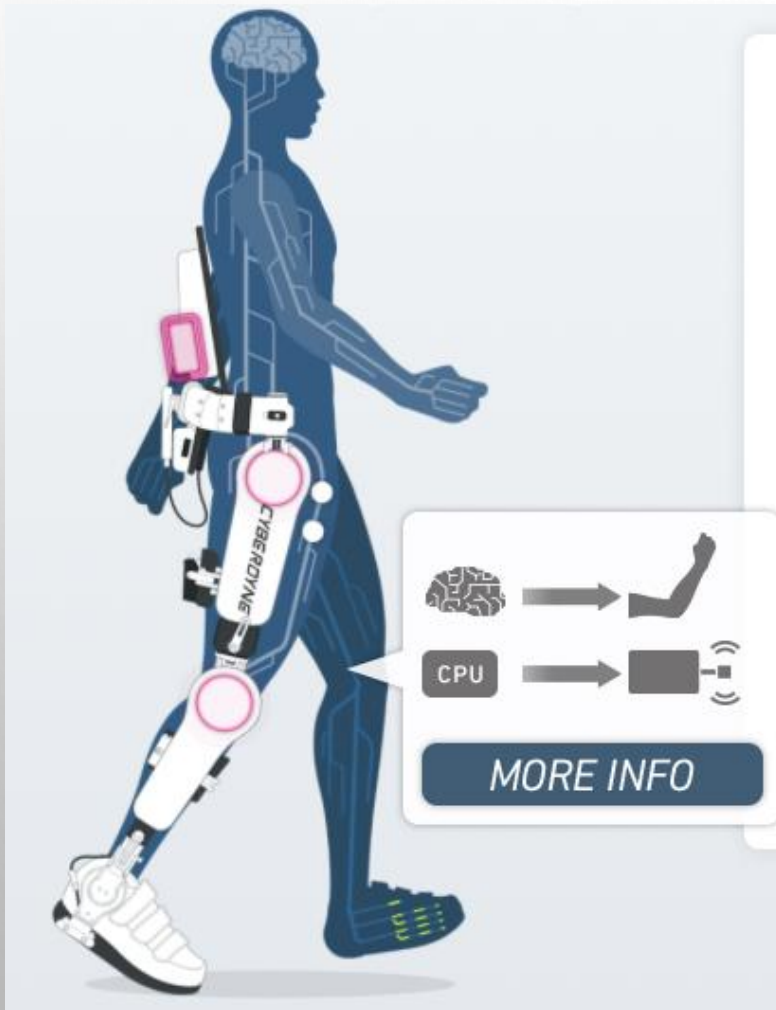


HAL DETECTS



- Read bio-electric signals sent from the brain to muscles by attaching the originally developed detectors on the surface on the wearer's skin
- Recognizes what sorts of motions the wearer intends

HAL'S HYBRID FEATURES



- Robot Suit moves as the wearer intends
- +
- In the absence of bio-electric signals, Robot Suit replicates human motions based on fundamental motion patterns

TRAINING FOR MOBILITY



@Fujita Health University

豊明市 愛知県 Toyoake, Aichi Prefecture



WEARABLE POWER-ASSIST LOCOMOTOR (WPAL)

Robotic orthosis for facilitating walking for people with paraplegia

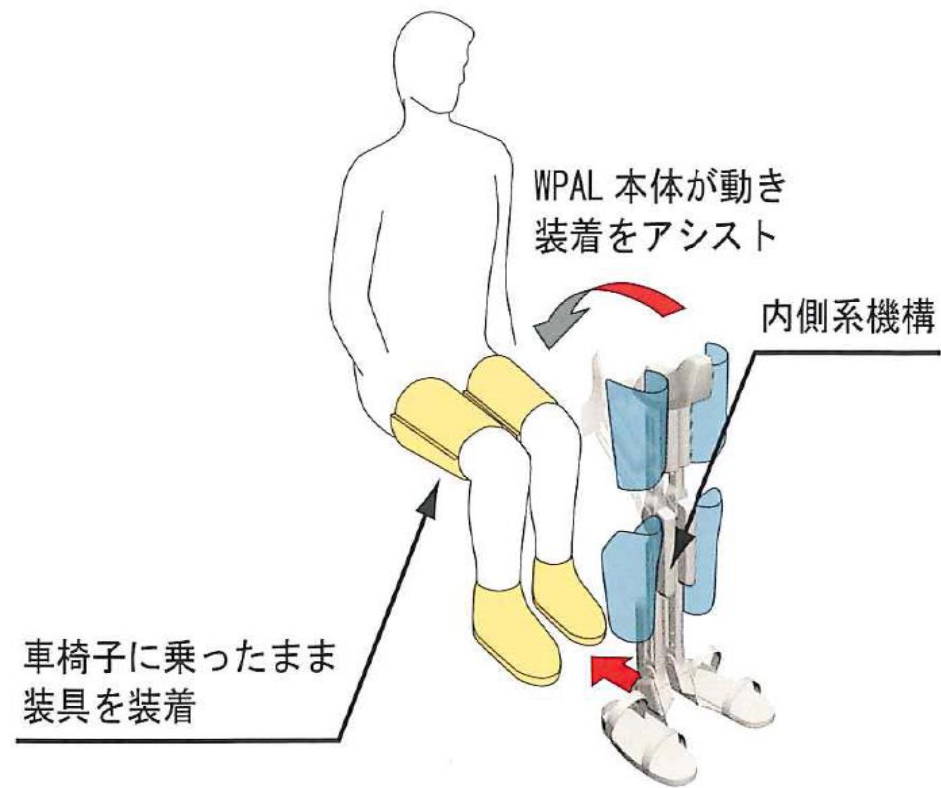


WPAL COMPONENTS



- Orthosis for supporting lower limbs
- +
- Robotic set for providing motor power

FITTING



- User wears only the orthosis while sitting in the wheelchair
- User can attach the robotic parts to the orthosis to facilitate walking

IN ACTION



- A medial single hip joint located between the thighs to enhance standing stability and wheelchair compatibility
- 6 degrees-of-freedom
(flexion-extension of bilateral hip, knee, and ankle joints)

SELF FITTING



POWER-ASSISTED STANDING



MEDIAL SUPPORT FOR STABILITY



ROBOT-ASSISTED WALKING



@Home Care & Rehabilitation Exhibition

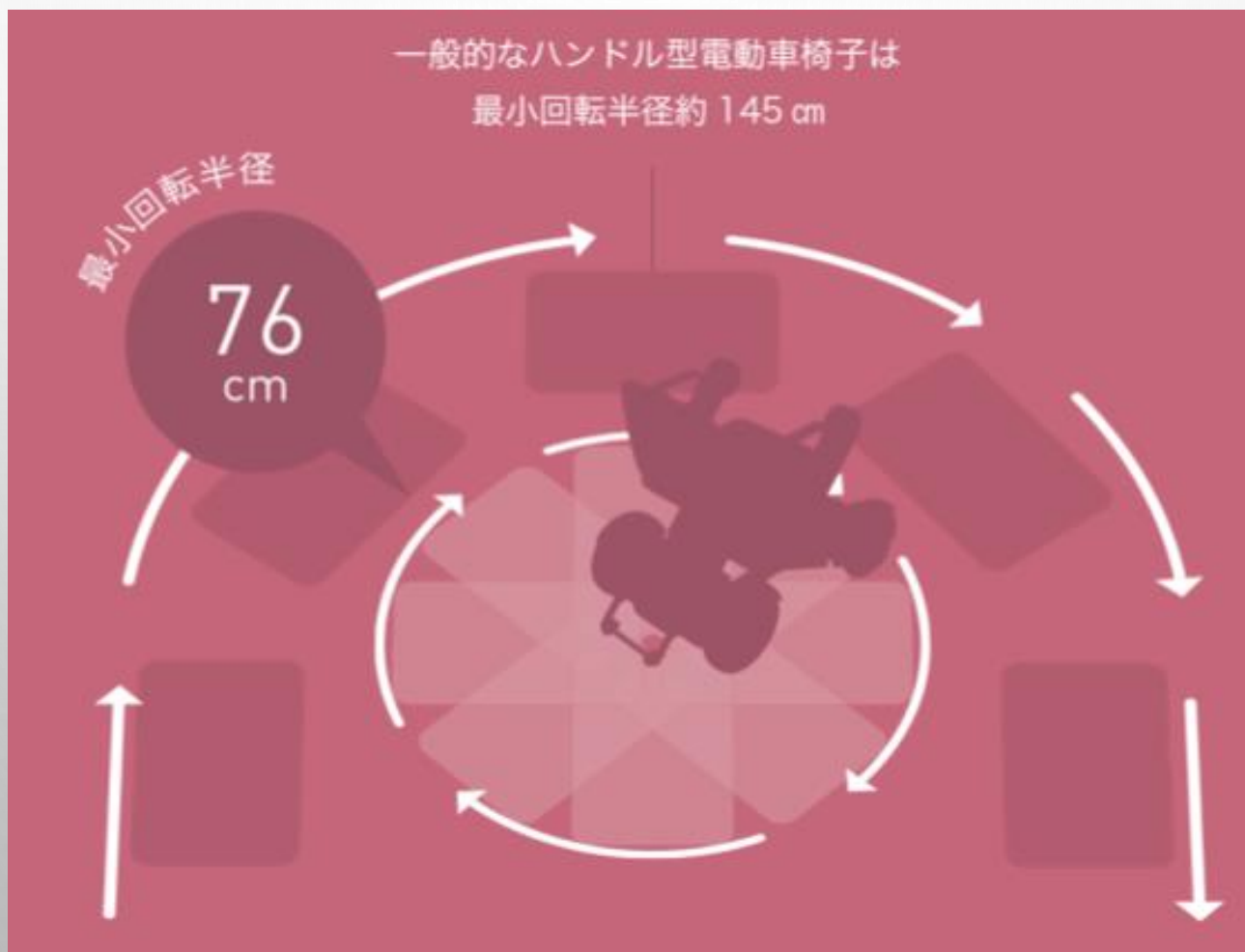
東京 Tokyo

Smart wheelchair

- Whill Chair



76CM (30") TURNING RADIUS



2" CLIMBING + OBSTACLE CLEARANCE

2"



ELECTROMAGNETIC BRAKE FOR SMOOTH STOPPING ON INCLINE



ANTI-SWAY KEEPS DRIVING IN STRAIGHT LINE ON SIDE SLOPE



REMOTE CONTROL FOR DRIVE IN



TRANSPORTABLE IN ANY CAR

ドライブベース
(以下DB)



車載
パターン



豊明市 愛知県 Toyoake, Aichi Prefecture

豊明市 愛知県 Toyoake, Aichi Prefecture

藤田保健衛生大学
FUJITA HEALTH UNIVERSITY

豊明団地を舞台に、移乗介助ロボット、生活支援機器を備えた「高齢者向けスマートホーム」を居住空間ごと開発するプロジェクト



HUMAN SUPPORT ROBOT

Height
100cm



Avg Height
175cm

BODY



Telescoping
Body

HEAD

Microphone Array

RGB-D Camera

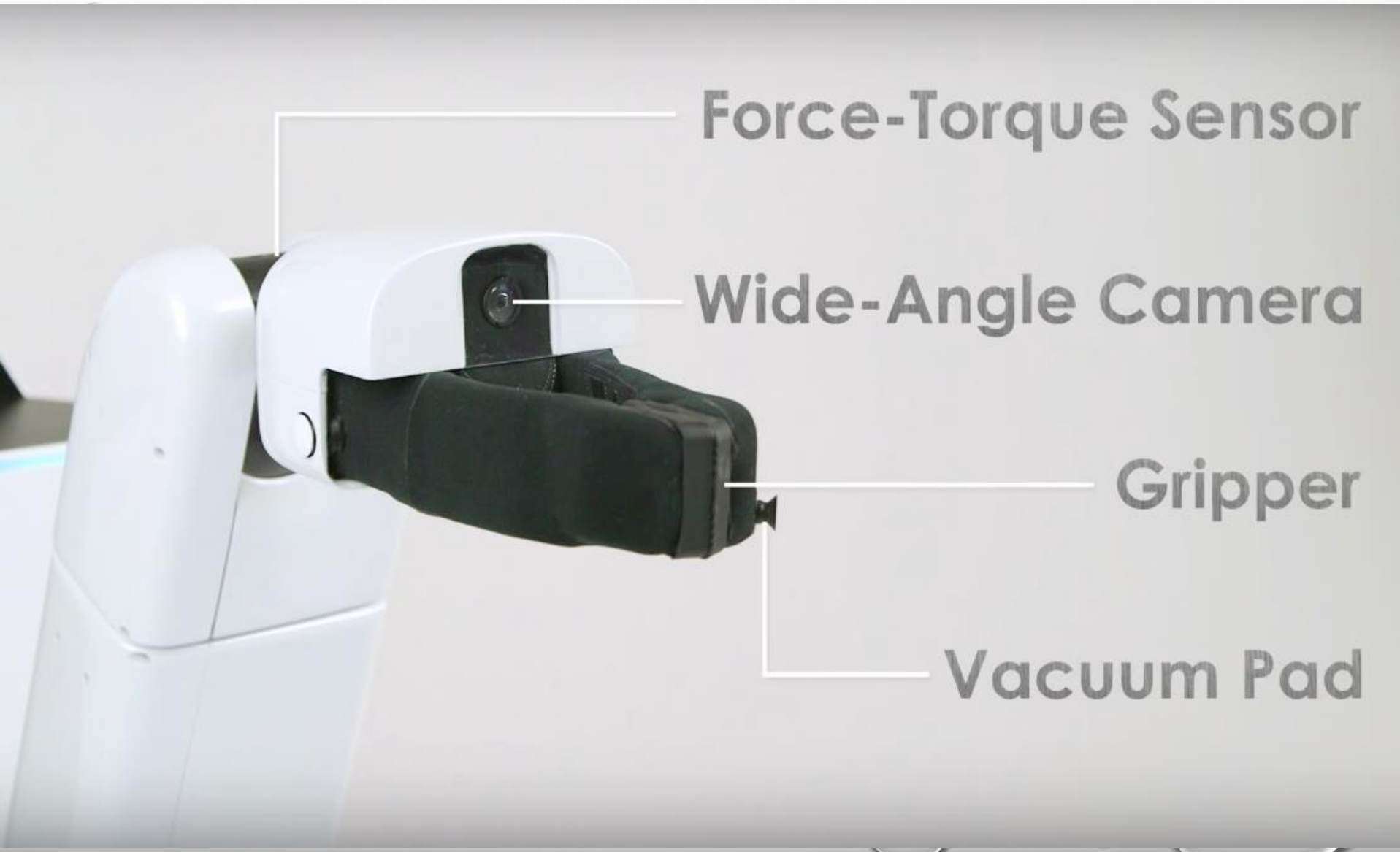
Display

Stereo Camera

Wide-Angle Camera



HAND



LEG

IMU Sensor

Laser Range Sensor



OPERATE VIA TABLET INTERFACE



The HSR can be controlled via this versatile tablet interface.

OPEN CURTAIN



SERVE A DRINK

Here you go!



FETCH A CONTAINER



PICK UP FROM FLOOR



@Shonan Robo Care Center

藤沢市 神奈川県 Fujisawa, Kanagawa Prefecture



HYBRID ASSISTIVE LIMB (HAL) LUMBAR TYPE FOR CARE SUPPORT



READ BIO-ELECTRIC SIGNALS
RECOGNIZES WHAT MOTION THE WEARER
INTENDS



ロボットスーツ HAL®介護支援用（腰タイプ）

PERSONAL PROTECTION DEVICES



WATER PROOF MODEL

活用シーンが広がる、 防水性能。

介護動作の中でも、特に負荷の大きかった
入浴介助の際にもご利用いただけるよう
になりました。

HAL-CB02モデル IEC防水保護等級4級
(防沫型)

※バッテリーホルダが黒色のバッテリーカバーで覆われているモデルが、
HAL-CB02になります。



USED IN BATHROOM



車いすからチェアの椅子に乗り換えのときに
体の大きな方や重い方もいるから心強い