REHABILITATION TECHNOLOGY FOR PEOPLE WITH SPINAL CORD INJURY IN JAPAN

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Community Rehabilitation Service Support Centre

Hospital Authority

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@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

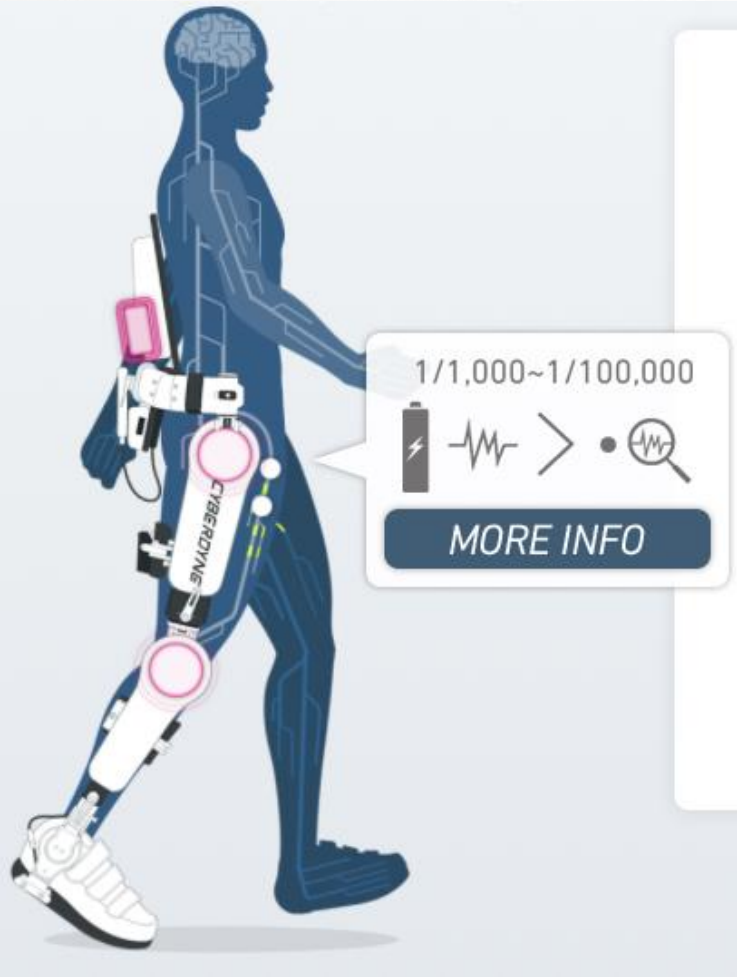
@Cyberdyne Studio

筑波市 茨城県 Tsukuba, Ibaraki Prefecture

HYBRID ASSISTIVE LIMB（HAL)

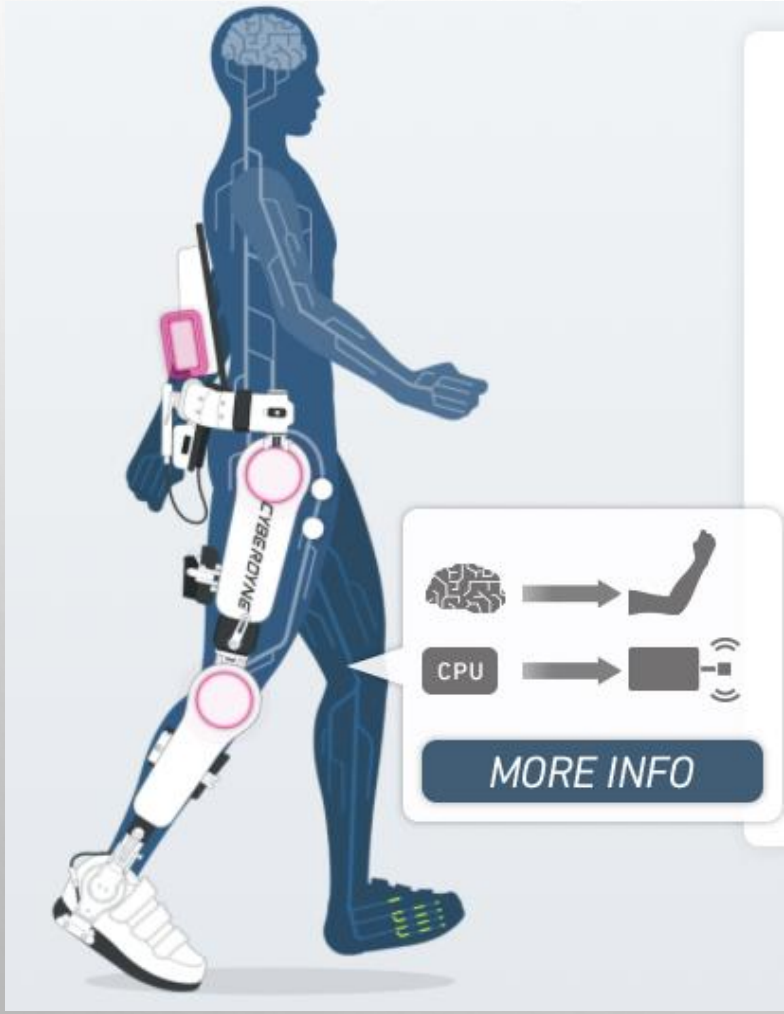
Exoskeletons for facilitating walking for people with paraplegia

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

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- In the absence of bio-electric signals, Robot Suit replicates human motions based on fundamental motion patterns

TRAINING FOR MOBILITY

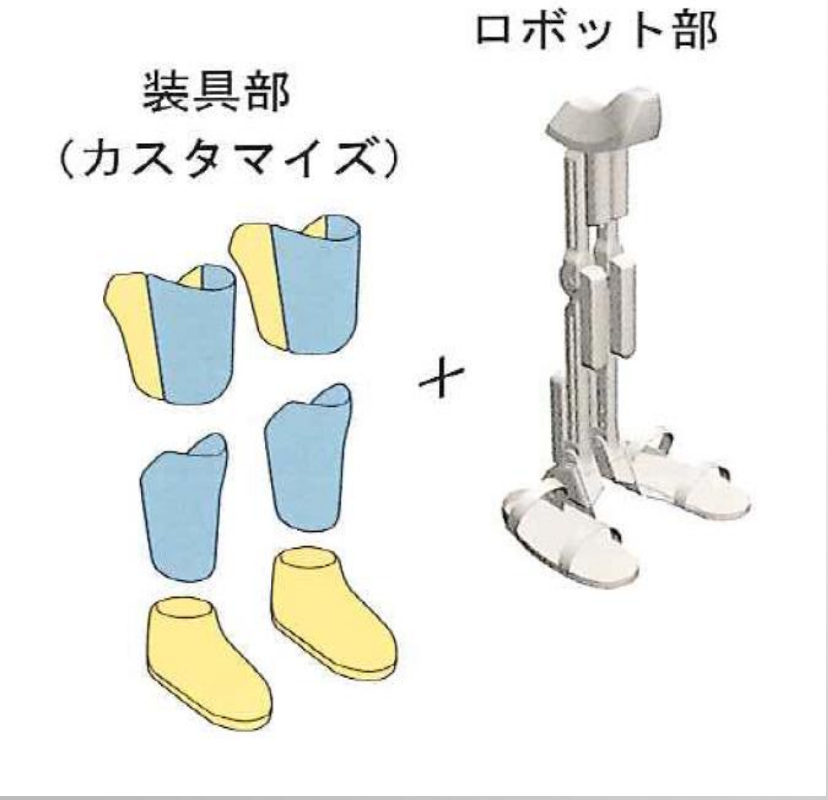
@Fujita Health University

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

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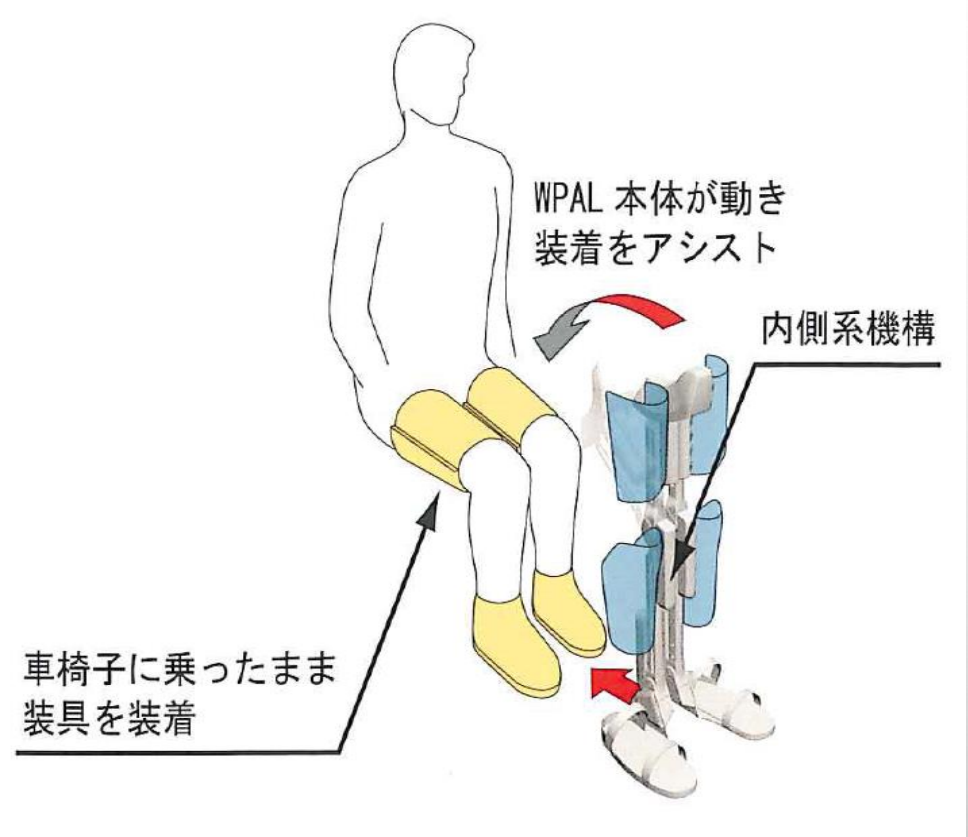
- Robotic set for providing motor power

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

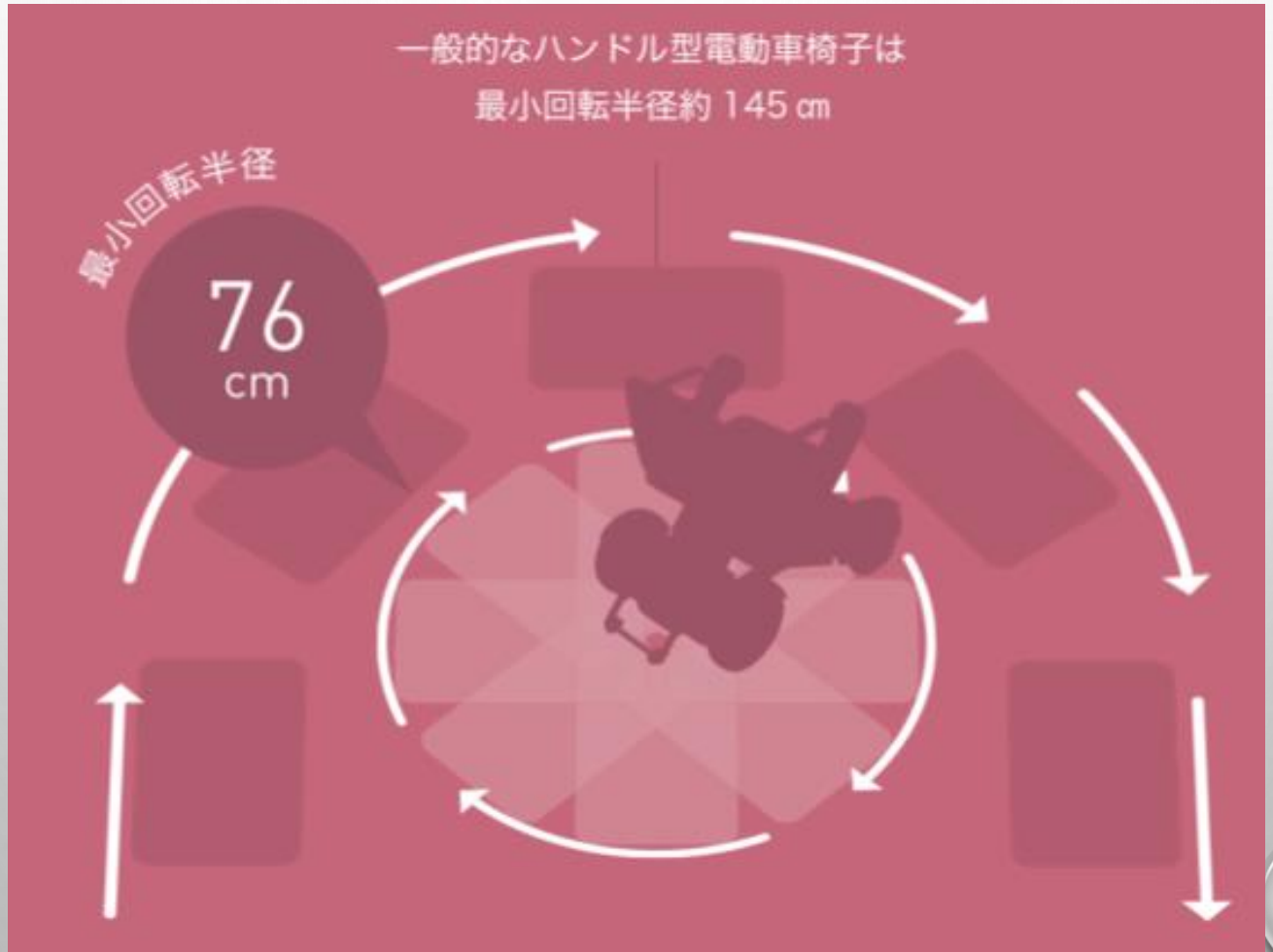
@Home Care & Rehabilitation Exhibition

東京 Tokyo

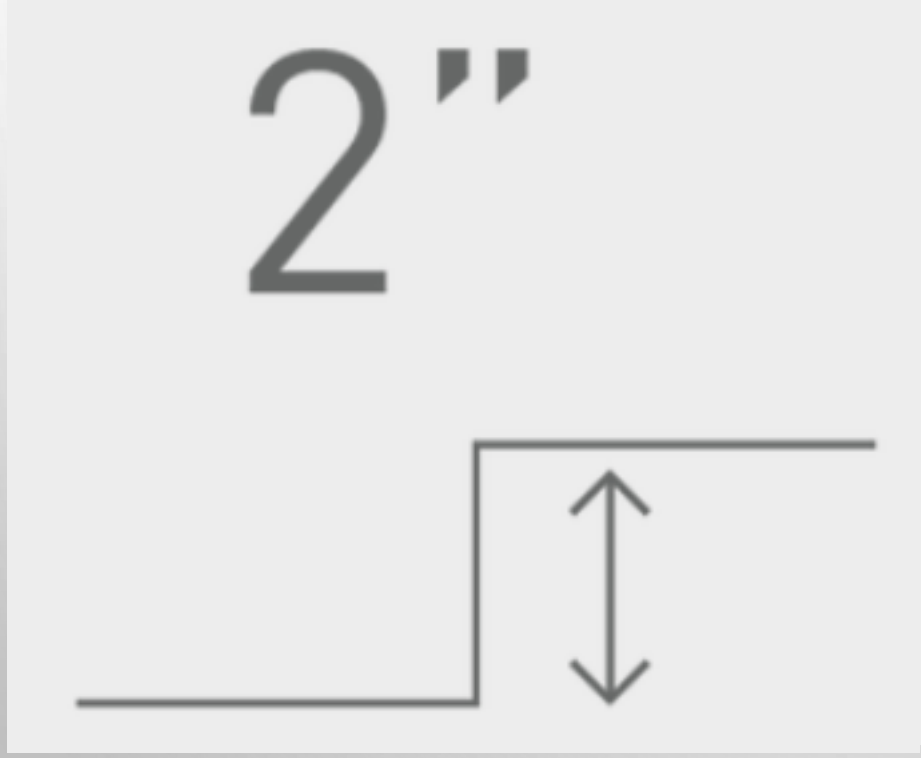
Smart wheelchair

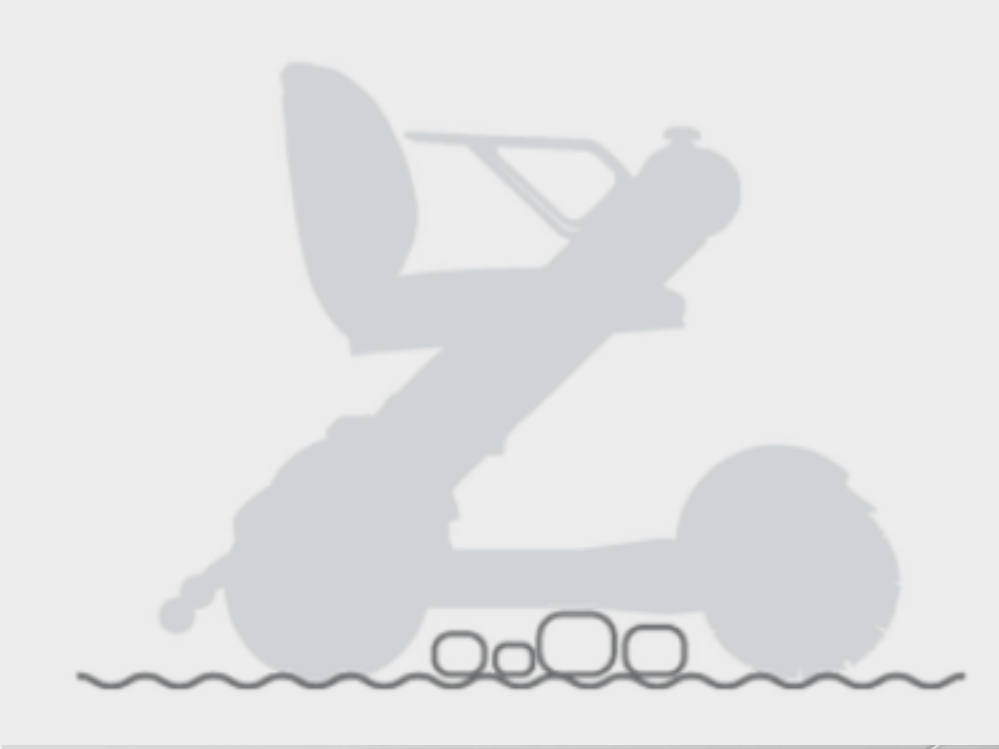
- Whill Chair

76CM (30”) TURNING RADIUS

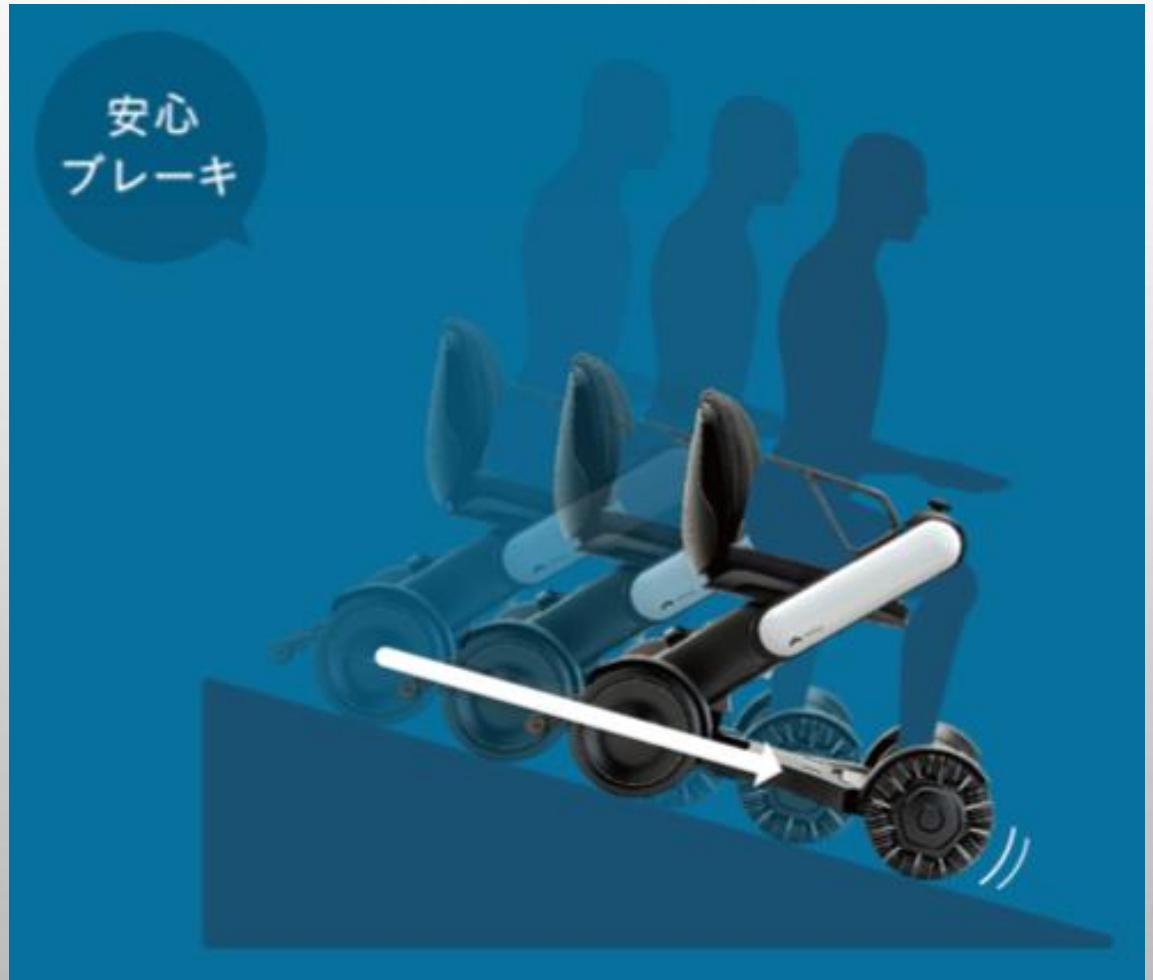


2” CLIMBING + OBSTACLE CLEARANCE





ELECTROMAGNETIC BRAKE FOR SMOOTH STOPPING ON INCLINE



ANTI-SWAY KEEPS DRIVING IN STRAIGHT LINE ON SIDE SLOPE

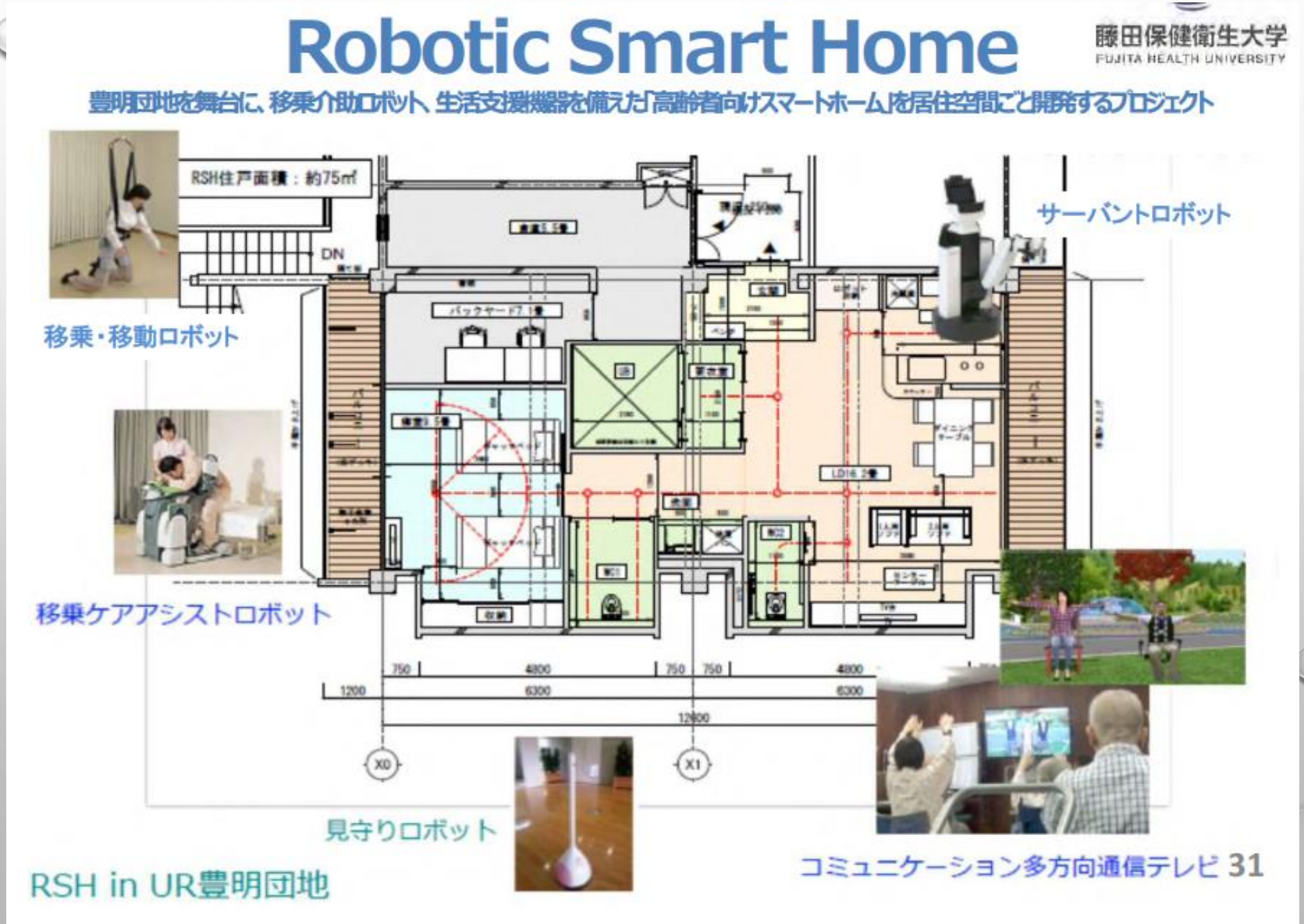
REMOTE CONTROL FOR DRIVE IN

Bluetooth®

TRANSPORTABLE IN ANY CAR

@ROBOTIC SMART HOME

豊明市 愛知県 Toyoake, Aichi Prefecture



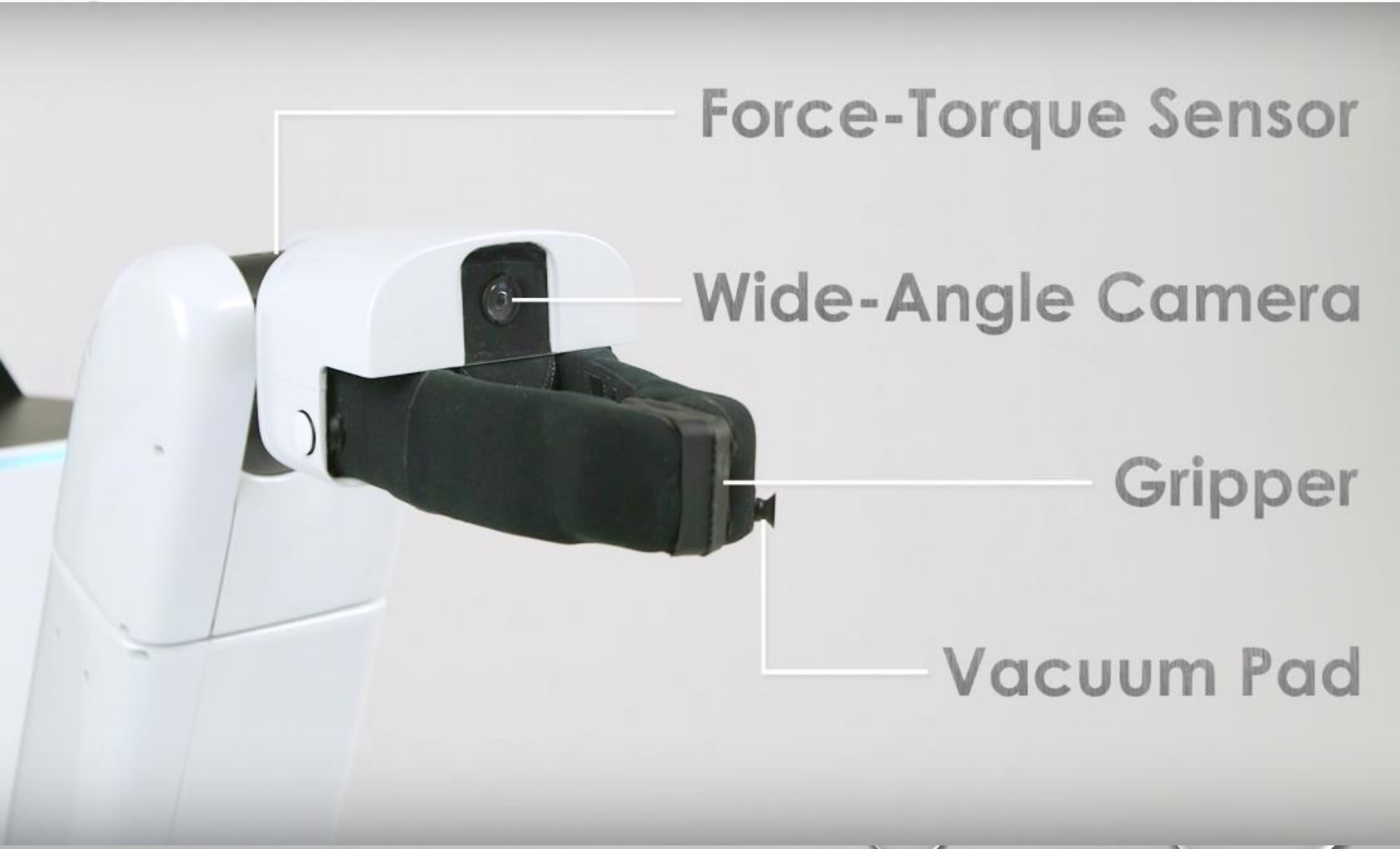
HUMAN SUPPORT ROBOT

BODY

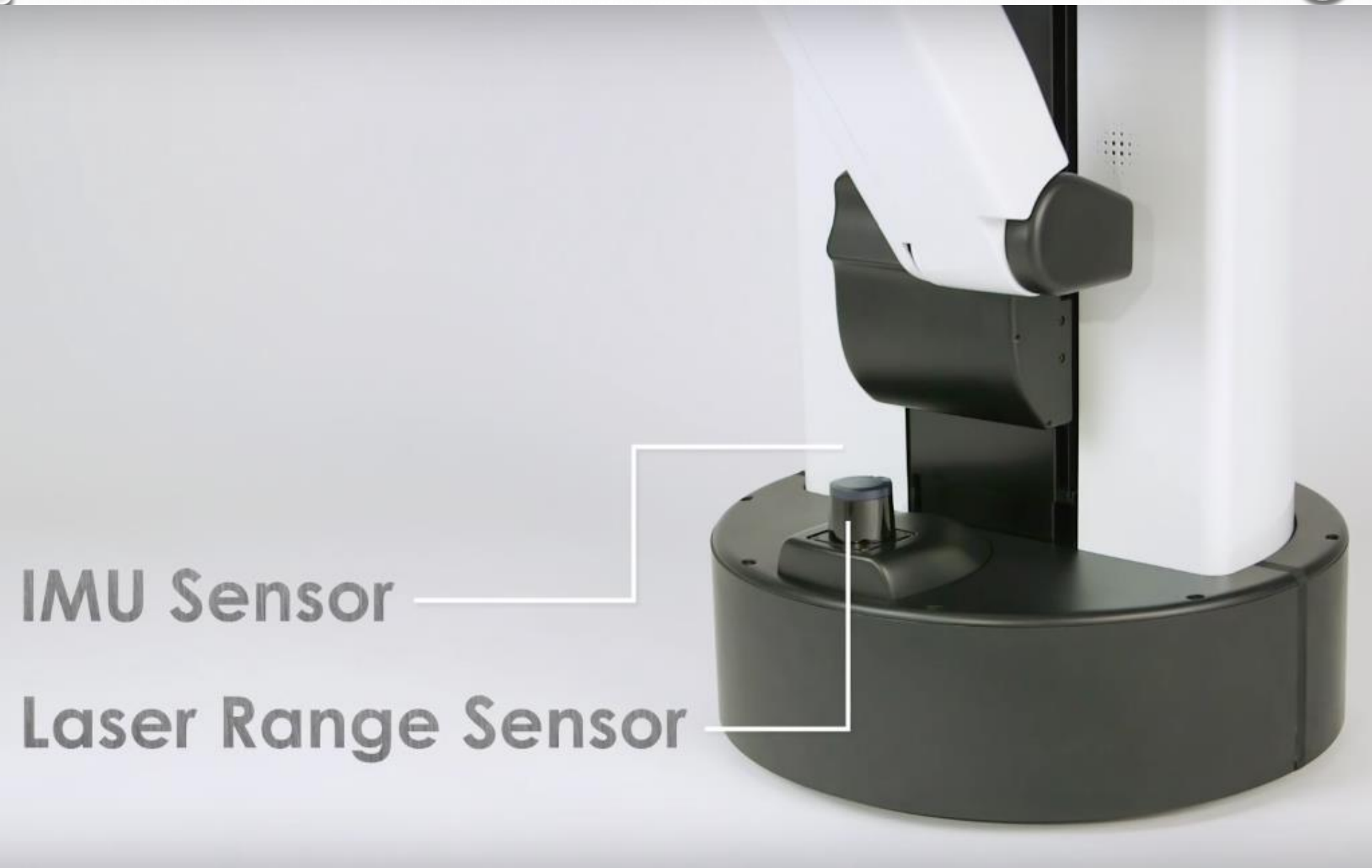
HEAD


Microphone Array
RGB-D Camera
Display
Stereo Camera
Wide-Angle Camera

HAND



LEG



OPERATE VIA TABLET INTERFACE

The HSR can be controlled via this versatile tablet interface.

OPEN CURTAIN

SERVE A DRINK

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

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)

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

USED IN BATHROOM