

Artificial intelligence, e-mobility and digitalisation

New technologies enable greater support and participation – Discover and test the latest innovations at REHAB Karlsruhe

Karlsruhe, 3 May 2023 – New technologies like artificial intelligence (AI), e-mobility and digital assistant systems have become indispensable in many areas of life. Now, they are also becoming increasingly common in the living aids sector. The products presented by exhibitors at REHAB will reflect this. New technologies are helping people with disabilities move, express themselves and participate in life. These include eye controls or head-foot steering systems for electric wheelchairs, the use of AI to adjust personal settings, or assistive technologies that support communication. REHAB Karlsruhe, to be held from 15 to 17 June 2023 at the Karlsruhe Trade Fair Centre, will showcase a wide range of new technologies that visitors will be able to test live. More information about the trade fair, the exhibiting companies and products can be found online at www.rehab-karlsruhe.com.

Living aids with artificial intelligence

CoMoveIT uses artificial intelligence to help people with severe motor disabilities who find it difficult or impossible to use a joystick. The company's *CoMoveIT Smart* is a head-foot steering system for electric wheelchairs that is a suitable alternative backed up by evidence. It uses pressure sensors that are activated with the minimum of force. What makes the system special is the way it uses artificial intelligence to continuously adapt to the user. It allows a wheelchair to be steered without a standard joystick or other conventional methods. This opens up opportunities for people who have little or no control over their movements. The product further supports the user through the intelligent algorithm that "interprets" these movements. "The fact that people can see our product at our stand and test it out will really help them see the benefit", says Managing Director Frederik Vervenne.

inContAlert, a sensor that monitors the bladders of incontinent patients, also uses AI. An algorithm calculates how full their bladder is and displays this on an app, which also warns if the level gets too high. Patients with neurogenic bladder dysfunction can use the app to know when they need to go to the toilet and avoid involuntary urination or a potentially dangerous overstretching of the bladder. The technology used in *inContAlert* lets patients conveniently monitor their bladder around the clock. "This is our response to the increasing digitalisation of healthcare and greater patient autonomy. The product can help reduce the use of aids like catheters, nappies and pads, or do away with them altogether", explains CEO Dr Jannik Lockl.

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Achieving greater autonomy through e-mobility

Electric vehicle technology is helping patients live more autonomously and participate more in life. That is why electric living aids like electric wheelchairs, braking and traction aids for wheelchairs, additional electric drives or electric scooters have become an essential part of REHAB. A number of exciting product launches are expected in 2023.

One of these is the Elator, a cross between a conventional walker and an electric scooter. The walker can be converted easily into an electric scooter for longer journeys or if the user gets tired. *Micro Mobility Systems* will unveil its electrically powered *Gladiator*: a three-wheeled electric scooter with a large standing area and special suspension to ensure stable and comfortable mobility. “We want to use REHAB to show that our products are not just fun to use, but are also extremely helpful and practical for both therapy sessions and everyday life”, says Pascal Joos, Managing Director of Micro Mobility Systems D GmbH.

Visitors can also look forward to new wheelchair power attachments and hybrid handbikes. Fabian Frank, Head of Marketing and Communication at *R & E Stricker*, points to two new products that will be presented at the event: “At REHAB, we will present a pair of systems for the first time that set new benchmarks in the world of adaptive devices.” Visitors will also be able to test the new products: “Users can attach our units to their own wheelchair in just a few minutes. They can therefore test them without even having to get off.”

Supporting communication with eye control

Assistive technologies can help people with conditions like cerebral palsy, ALS and spinal injuries communicate using their own voice, develop reading and writing skills, and live more independently. *Tobii Dynavox* will use REHAB to present communication tools controlled via touch and the user’s eyes. These will include an iPad-based communication device with eye control and communication software, as well as a range of apps for aided communication, such as the first browser specially designed for eye control users. Visitors can also have a keyring fob with PCS communication symbols made for them.

HomeBraceGermany will present the latest version of its wheelchair control system MyEcc Pupil as a communication device. The product is due to be launched this summer. Through a combination of eye movements and individually assignable speech output fields, it allows people with muscle conditions to communicate with no need for a display and therefore even in direct sunlight. According to the manufacturer, the use of eye movements captured via a sensor to control a wheelchair is unique. Users can operate all

of the wheelchair's functions, even in direct sunlight. These include driving, adjusting the seat, changing the speed and using robotic arms. The new expandable software lets users spell or select previously saved words. It is fully customisable and can be configured freely.

Another new product on show will be *munevo Home*. Users wear smart glasses and slightly nod and tilt their head to control an electric wheelchair with accessories such as tablets or a robot arm, and now even smart home systems.

Humanelektronik specialises in eye control systems, supported communication, special wheelchair controls, environmental controls and custom products, as well as individual solutions for people with impaired motor and cognitive abilities. They will present two highlights at REHAB. HEsports is a series of individual, inclusive solutions for active and passionate gamers. They help people with severely impaired motor ability to play on various platforms via smart controllers and individually adjustable buttons and sensors. They can also use iPad apps thanks to Hiru, an innovative eye control system from *Irisbond* for windows or iPadOS.

About REHAB Karlsruhe

Since 1980, REHAB Karlsruhe has been one of the world's most important events for rehabilitation, therapy, care and inclusion. Following last-year's catch-up event after the pandemic, REHAB will take place again this year before switching back to its normal cycle every two years from 2025. The event covers the latest trends and innovations in rehabilitation and assistive technology, as well as new methods of therapy and care provision. It is aimed at professional visitors like therapists, doctors, professional carers and experts from retailers, service providers and associations, as well as people with disabilities and their families. More information, such as the event programme, visitor information and ticket shop, can be found at www.rehab-karlsruhe.com.