

## Flexible & Wearable Electronics Application Experiments



### Moveo Srl

Developing and creating light, simple, and comfortable devices that increase the autonomy, independence and quality of life of children and adults with walking difficulties.

[www.moveowalks.com](http://www.moveowalks.com)



### Problem to be solved

Around 60 million people globally have difficulty in walking due to old age, injuries or neuro-muscular degeneration, such as Parkinson Disease, Multiple Sclerosis, Amyotrophic Lateral Sclerosis. Although active exoskeletons have always promised to be a solution to limited mobility, so far they are not a solution usable for our target users either in their design or cost. Most exoskeletons are rigid and constrain the user's joints, and otherwise cause unintentional interference with the body's natural biomechanics. They are also heavy and expensive, and as such their applicability is still very limited. Currently, there is no way to allow patients carry out walking rehabilitation or physiotherapy at home while being followed by clinicians.

### Solution provided by SmartEES

Moveo has developed ExoBand, a self-powered, lightweight soft exosuit to support walking. This is a passive mechanical wearable exosuit introducing two innovative elements: the comfortable, wearable component made of an elastomer material and the self-powering mechanism. The exosuit material 'stores' energy generated by hip extensor muscles during walking and uses the stored energy to assist walking motion, resulting in a reduced metabolic burden. Moveo has received support in Smartees2 to develop ExoSense, a device using Inertial Measurement units (IMUs) placed in specific points of ExoBand to collect data on speed, posture and other gait metrics and send them to a smartphone, allowing clinicians to monitor patient progress and design patient-specific exercises, gait adjustment and rehabilitation programs.

### Business model & impact

Moveo intends to reach its customers through a mix of B2B and B2C models. During the international scale-up they will sign further agreements with specialized distributors in each target country or region. In the meantime, thanks to the endorsements from patients and to doctors promoting the current version of the product with no electronics, i.e., ExoBand, as walking aid to their patients, Moveo was able to sell its device via their website.

