

Enhancing motion

Team: Ampere

Mission:

How can we design a viable system that allows people to restore or enhance their ability to move?

Background:

There are many people in our society with diminished strength or mobility. Life supplies us with a steady supply of old people, who will at some point need aid to perform their daily tasks. Other people may have suffered injuries that affect their performance in tasks that are generally considered easy to perform. Currently much of the aid for this group of people is reactive, as it aims to treat the symptoms or replace the affected person altogether.

CERN connection:

CERN Robotics experts and enthusiasts

James Devine

Society connection:

Associations supporting the elderly and disabled. Sotaveteraaniliitto in Finland.

Robotics technology companies.

Explorative questions:

What are the contributing factors in the deterioration of the elderly?

What are the main challenges for people with diminished strength?

Which technologies could aid people with everyday tasks?

What is the difference between using robotic servants and augmenting people with technological tools?

How can this technology become as natural as wearing a jacket or backpack?

Target users:

People with reduced or diminished strength, who might benefit from technological aid in their everyday life.

Expected Outcome:

A system that enables a person to perform over their normal physical aptitude or strength and so enables them to perform normal activities that they would otherwise struggle at completing.

Success metrics:

Concept is validated with a proof of concept prototype, tested with real users. Positive social impact of the solution is clearly demonstrated.

Research plan:

Deep dive into ergonomics and issues related in designing for humans

Investigate materials and power sources that could be used

Benchmark existing carrying/walking/moving aides
Look into service robotics
Get to know the ideology behind Baxter