Lumova

BEWEGUNGSINSEL

Movement Island for Everyday Activation in Care Homes

Autonomous • Spontaneous • Shared

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1. The Care Reality

Movement is essential in care homes, yet rarely happens spontaneously.
In everyday care, movement and activation are widely recognised as essential for well-being, mobility, and fall prevention. Yet in practice, they are increasingly difficult to provide. These insights are based on over **20 structured interviews** with activation staff, nursing staff, and care home management, as well as early field observations.

Across many care homes, the same reality emerges:

- Activation mainly happens in **planned, scheduled sessions.**
- Staff are motivated, but **lack time and organisational capacity.**
- Corridors and common rooms remain **unused spaces** for activation.
- As a result, capable residents become **passive, disengaged, and less confident.**
  Many residents would join if invited, but do not initiate movement on their own.

What is often misunderstood is that caring more for residents' well-being is assumed to require more staff resources. In reality, the biggest barriers are not missing knowledge or motivation, but formats that are too demanding to organise, initiate, and sustain in daily care routines.

Without simple opportunities for spontaneous, low-effort participation, movement is postponed and often disappears from everyday life altogether.

2. The Movement Island in Practice

From planned sessions to spontaneous movement.

The Lumova Movement Island turns corridors and common rooms into interactive movement spaces that invite residents to join spontaneously.

How it feels:

Residents step in place to move through **familiar environments**, such as a **winter walk in the mountains.** The scenery only progresses through movement. When residents stop, the walk pauses.

Immersive details: Hear the snow crunch underfoot and the wind in the trees.

A journey of discovery: Animals appear along the path, inviting interaction.

Movement startssimpleandaccessible. Depending on ability, residents can participate:

Seated

Foot Lifts

Leg Extensions

Heel Raises

Cycling

Standing (with or without support)

Foot Lifts

Heel Raises

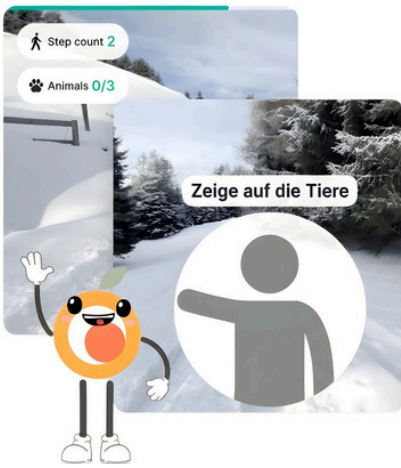
Hamstring Curls

Hip Abduction

As residents progress, **cognitive-motor challenges are added gradually**:

- reacting to animals appearing in the video while continuing to move
- later, *go / no-go* tasks, for example reacting only to animals that fit the habitat (e.g. deer or birds in the mountains) and ignoring others (e.g., lions or parrots)

An animated companion, **Lumovi**, accompanies the journey. Lumovi gives spoken and visual instructions, shares short fun facts about locations and animals, and encourages residents to help take pictures of animals by pointing at them. At the end of a session, a small slideshow shows the animals found, and those still to be discovered.



Each session contributes to **individual and shared progress**:

Personal Stats: At the end of a session, residents see their individual contribution (e.g., steps taken, animals found).

Shared Goals: This progress is added to a cumulative total for the entire home, fostering a sense of community.

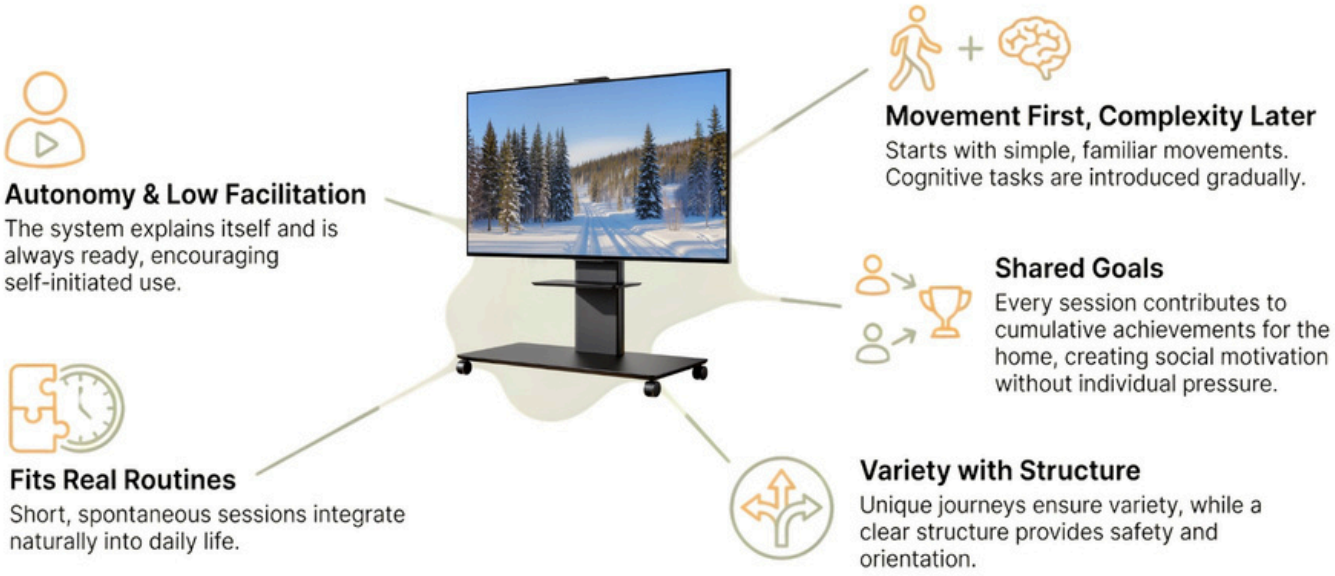
Friendly Comparison: The system shows the home's progress relative to nearby care homes (e.g., showing the two ahead and behind).

The system adapts difficulty automatically, turns on and off by itself, and is always ready through an idle screen looping the scenery. Each journey is unique, with different start points, paths, animals, and choices, encouraging return, exploration, and empowerment.

3. Why It Works Long Term

Designed for return, not for novelty.

Long-term engagement in care settings rarely fails because of missing technology. It fails when systems are too complex, too demanding, or too dependent on facilitation. Lumova was designed explicitly to avoid this and is built on five core principles:



4. Proof from the Field

Lumova is currently **tested in nine care homes in Switzerland** through multi-week pilot deployments and is continuously refined based on real use.

In practice, the Movement Island is placed in corridors or common rooms and introduced with light initial motivation by staff, other residents, relatives, or therapists, not to operate the system, but simply to invite residents to try. Once residents have experienced the system, use becomes increasingly self-initiated and social.

What we observe in practice:

Reaching theUnengaged: Residents who rarely attend planned activities engage.

Social Dynamics: Residents use the system together, encouraging each other.

LowStaffBurden: Staff report low effort and high acceptance

Frequent Use: Sessions are short but frequent throughout the day.

All movement tasks are designed to be low-impact, optional, and adaptable to seated, supported, or standing participation.
Insights from over 20 structured interviews with activation staff, nursing staff, and management, as well as ongoing pilot feedback, directly inform continuous refinement.

5. From Pilots to Everyday Use

Lumova is moving deliberately from pilot testing toward market launch:

Spring–Summer 2026:
Continued pilots and gradual scaling within partner homes.

Autumn 2026:
Company incorporation and market launch.

End of 2026:
First five paying care homes using Lumova permanently.

ALTENPFLEGE / AVENEO offers the right environment to exchange with care practitioners, gather feedback, and make the Movement Island visible as a practical, ready-to-use format.

Setup & costs

The Movement Island uses simple, non-proprietary hardware: a 65″ TV on a mobile stand and a Samsung Galaxy S21 in a 3D-printed enclosure. Optional elements include standing support, carpet, stickers, IR blaster, timer switch, and standard cables. The one-time setup cost is **below CHF 1’000** and provided against a deposit. The core value lies in the software subscription.

Business model

Lumovaisofferedas a **subscription-based software system**:

6. Team

Lumova is built by a **team of two founders from ETH Zurich and the University of Zurich**, combining expertise in movement science, rehabilitation technology, data science, and human-computer interaction.

Aurel Berger (ETH Zurich, MSc Human Movement Science & Sport) focuses on movementanalysis, cognitive-motor training, and thetranslation of evidence-based fall-prevention and activation concepts into everyday care practice. His work bridges research, care-home reality, and product design.

Tumen Dambiev (University of Zurich, MSc Data Science) leads system architecture, adaptive algorithms, and interaction design. He is responsible for difficulty adaptation, data-driven personalization, and the technical robustness required for unsupervised, real-world use.

The founders met through the **ETH Talent Kick** program and have since worked closely with care homes, physiotherapy partners, and research groups. Lumova collaborates with the **Motor Control & Learning Group at ETH Zurich** (creators of Dividat) to align its approach with current research on balance, dual-tasking, and fall prevention, while remaining focused on practical deployment rather than laboratory settings.

Lumova is **fully bootstrapped**, has **no external investors**, and **all intellectual property is owned by the team**. This independence allows the project to evolve pragmatically, stay close to users, and prioritise long-term impact and usability over rapid scaling.