

Users and use of Pervasive computing in healthcare scenarios



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or

“I read that the project is something about computers, I don't like to have one in my home” – Elly, 86



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In 2002 the Centre for Pervasive Healthcare, CfPH, was established in the ICT City of Katrinebjerg in Aarhus. The centre was founded by the University of Aarhus in cooperation with the Alexandra Institute on the basis of research conducted by the IT council of the Aarhus region.

The term Pervasive Healthcare covers the application of ubiquitous computing technology (pervasive computing) to support healthcare services. Pervasive Healthcare contributes to making healthcare services available to the population and to healthcare providers anytime and anywhere, thus giving individuals - and their families - the possibility of playing a much more active role in their own healthcare.

All research and development activities in CfPH are based on a high degree of user involvement – also known as participatory design.

Centre for Pervasive Healthcare currently involve about 35 people...

- Computer Scientists
- Engineers
- Information and Media Science
- Doctors
- Nurses and therapists
- Anthropologists

At the Centre for Pervasive Healthcare, we do

- Technological research
- Method development
- Ethnographic research
- (Clinical research and trails)

Current projects

- UserDriven Healthcare Innovation
- Caretech Innovation
- Remote Rehabilitation Support
- HandiVision
- Randers Sundhedscenter
- sundhedsITnet



BDSI : Brugerdreven SundhedsInnovation

User Driven Healthcare Innovation

- A project 'in progress'

BDSI is a consortium with both academic and industrial partners. E.g. Århus University, Alexandra Institute, Århus municipality, The university hospital, Logica, G4S and Polycom.

These partners have different interests in the project, but share a common goal; to develop pervasive solutions that enable elderly to live longer and more actively in their homes.

In the CfPH-team, we are 6 persons:

Rikke and Simon

Susanne, Mathias and Tobias

Erik

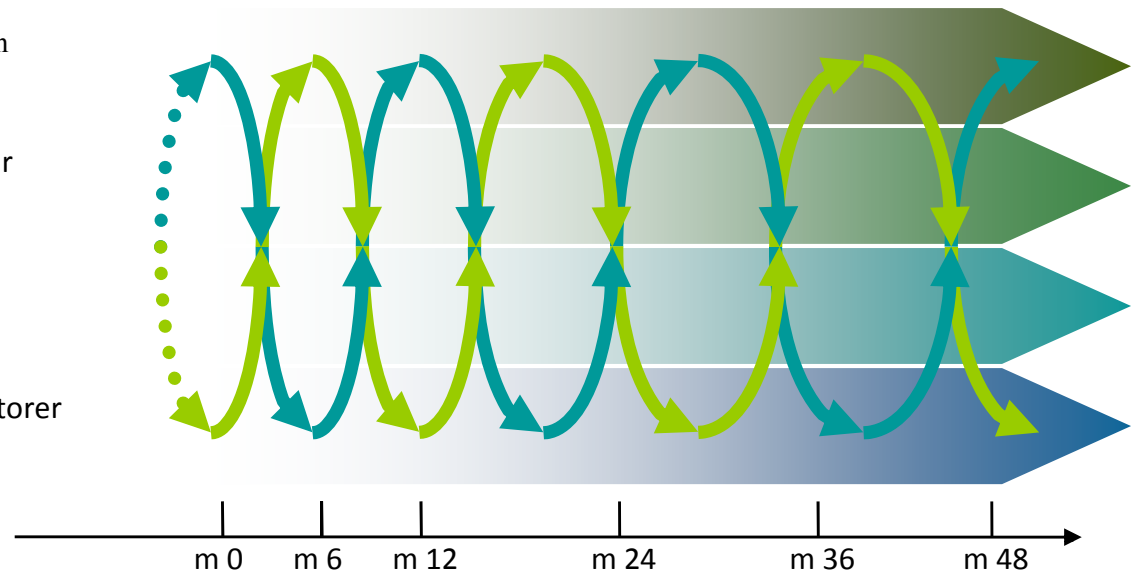


Brugerdreven
innovation

Infrastruktur

Services

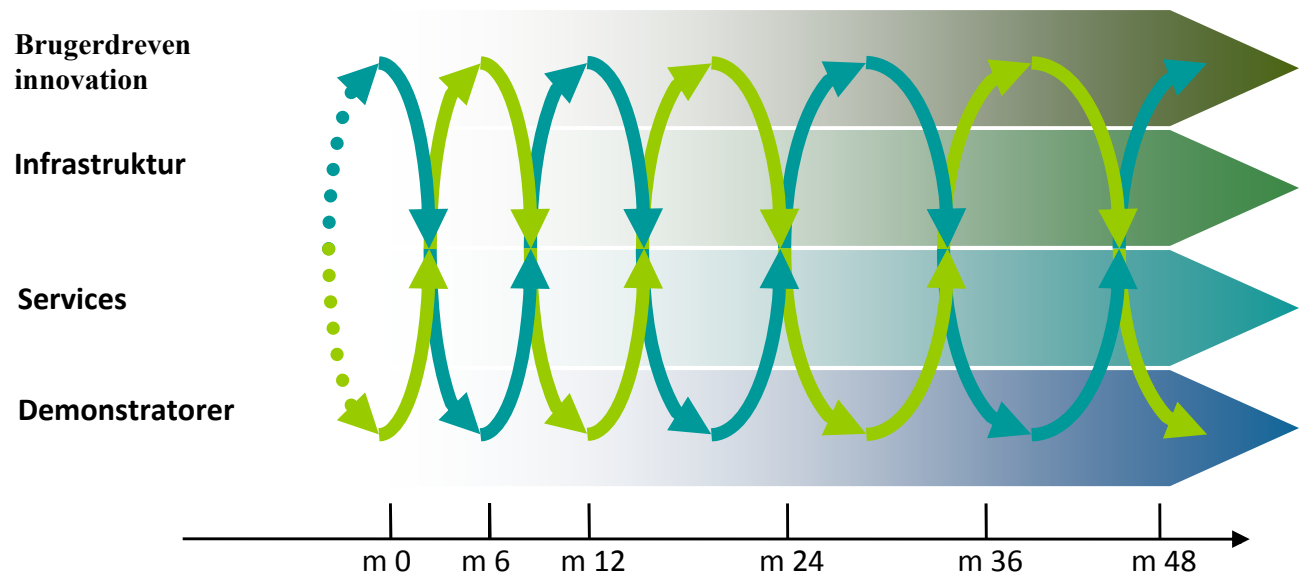
Demonstratorer



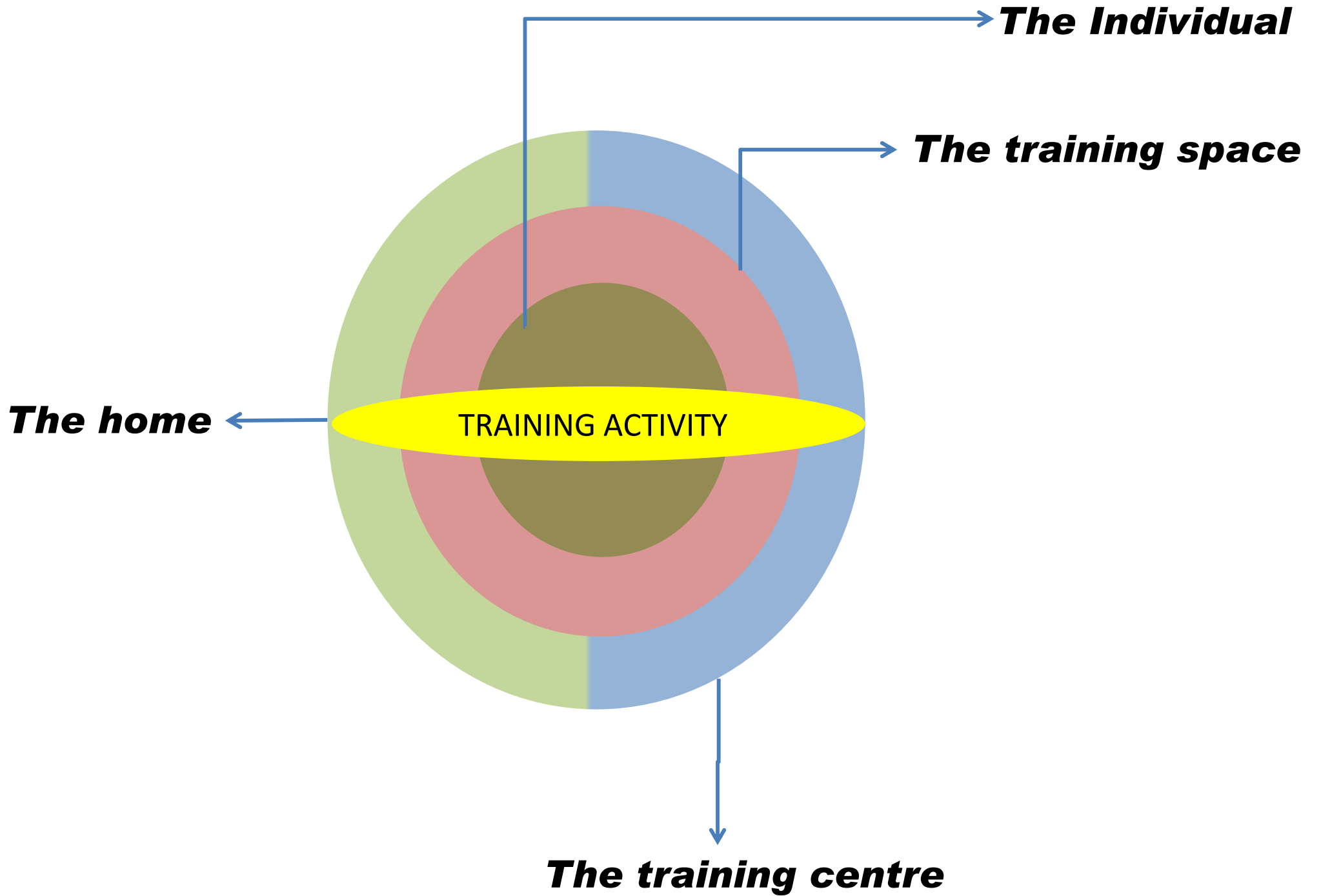


We have currently two application projects running;
Vestibular Rehabilitation
Wii-in-Trige

These projects provide requirements for BDSI, related to Infrastructure and hence demonstrators. The two projects function as "Application prototypes" for an overall infrastructure. This infrastructure do not exist today within the project; but it's a work-in-progress to define requirements for, and implement such an infrastructure.



VESTIBULAR REHABILITATION - SETTINGS FOR THE CURRENT ACTIVITY



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ISSUES AND OPPORTUNITIES

- RESEARCH SHOW THAT (IF PATIENTS DO EXERCISES), THERE IS NO DIFFERENCE IN HOME OR CENTER-BASED TRAINING

- THERE IS A WILL FROM HOSPITAL ADMINISTRATION TO PUT MORE FOCUS ON HOME TRAINING

- TRAINING SHOULD BE BOTH FUNCTIONAL DRIVEN (GAZE, BALANCE etc.) AND PHYSICAL (GENERAL FITNESS EXERCISES)

HOWEVER

- USERS HAVE A HARD TIME TO REMEMBER (AND/OR) MOTIVATE THEMSELVES

- IT'S HARD TO DO THE EXERCISES IN THE RIGHT (I.E. MEANINGFUL) WAY

- THE CENTER (FALLENHETEN) REPRESENTS KNOWHOW, STIMULI, GROUP IDENTITY, (AND SAFETY?)

MISSMATCH

- THE WAY THE TRAINING IS PERFORMED IN THE HOME AND IN THE CENTER IS DIFFERENT

- PATIENTS FEEL THAT THEIR HOME IS NOT A PLACE FOR CARE....OR REHABILITATION... "I LIVE HERE"-FEELING...



Participatory Design

Through active user involvement, throughout the whole design process we aim to capture, appreciate and incorporate requirements coming from our different users into our design solutions.

This work relates to a complex PD process that encounters highly heterogeneous environments, users and tools.

Our main stakeholders are

The patients

Physiotherapists

The hospital

Readers Show Off Their Home Offices

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Our end-users are not professionals using their homes as a mean to carry out a special activity. Their homes are a place for living.



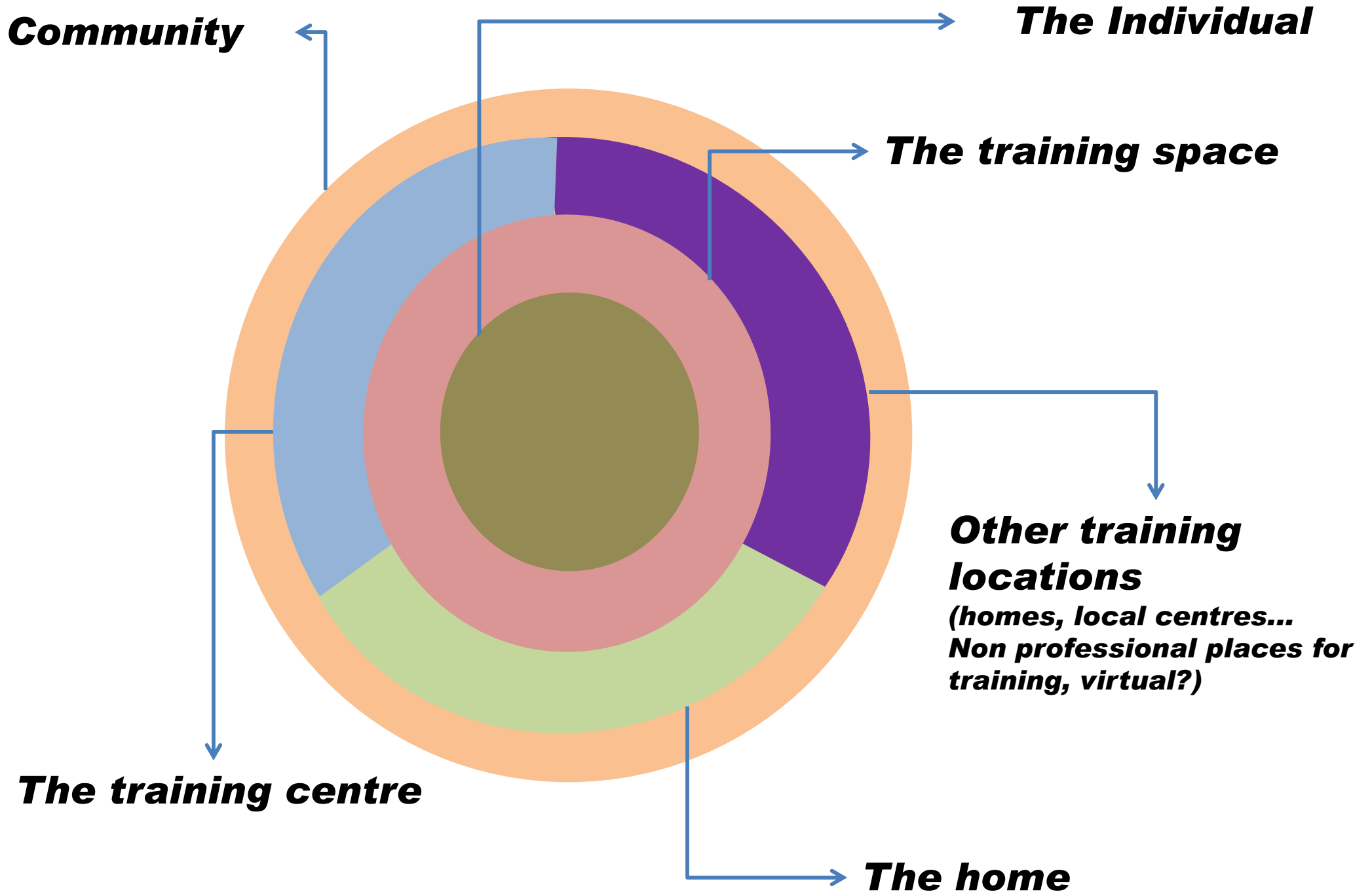
Each home is unique, as the individuals living in the homes. There is no standard telling how a home is decorated or how people live their lives inside of the home.

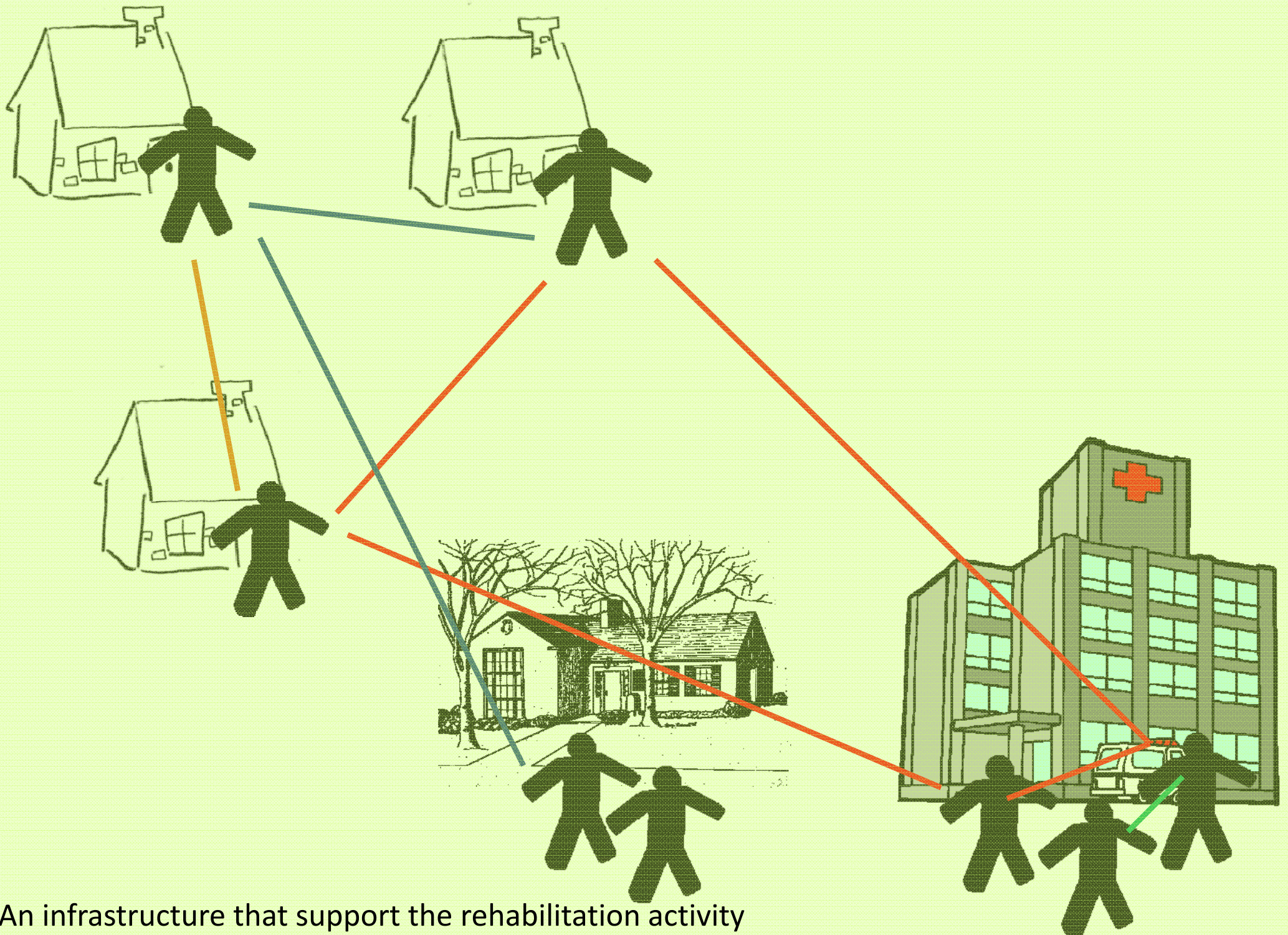


The rehabilitation programme provokes dizziness and can make the patients tired.

We like the training to be positive and engaging, not something negative.

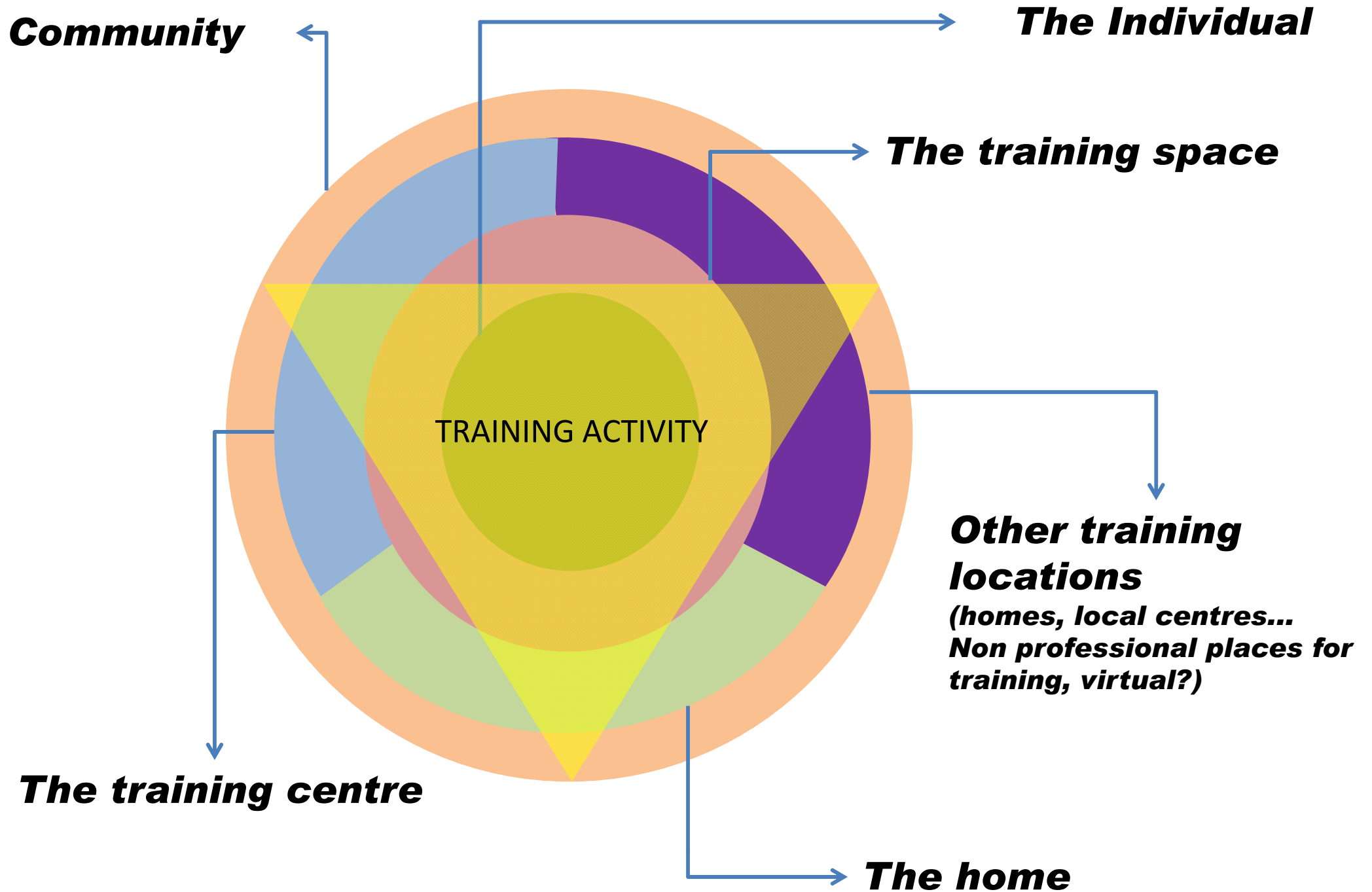
VESTIBULAR REHABILITATION - SETTINGS FOR THE ENVISIONED ACTIVITY

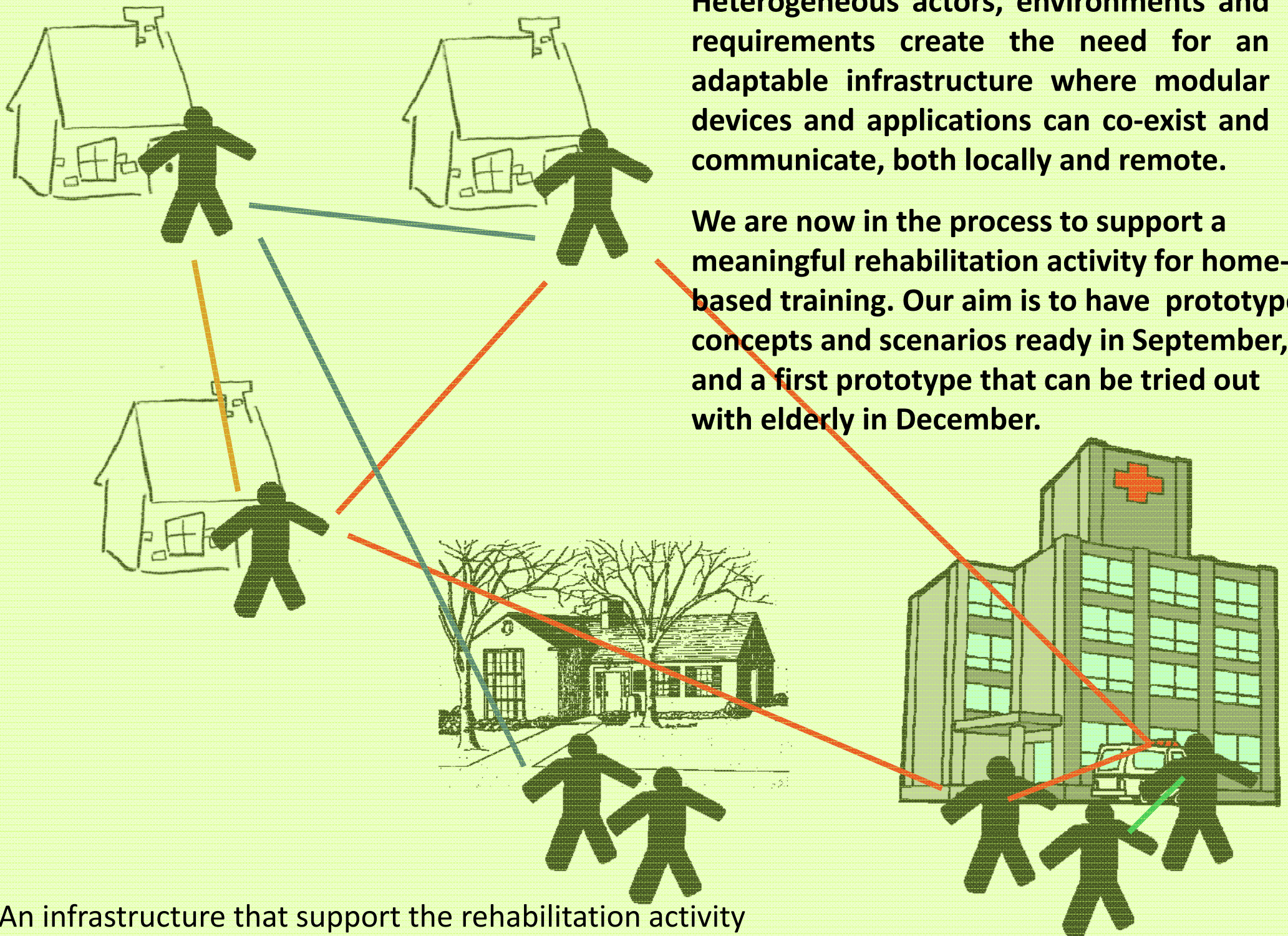




An infrastructure that support the rehabilitation activity

VESTIBULAR REHABILITATION - SETTINGS FOR THE ENVISIONED ACTIVITY





Heterogeneous actors, environments and requirements create the need for an adaptable infrastructure where modular devices and applications can co-exist and communicate, both locally and remote.

We are now in the process to support a meaningful rehabilitation activity for home-based training. Our aim is to have prototype concepts and scenarios ready in September, and a first prototype that can be tried out with elderly in December.

An infrastructure that support the rehabilitation activity

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or

“I like to have that support-tool that makes me more motivated to train and to train in the right way”

– Hopefully Elly and others

THANK YOU



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