



08/07/2020

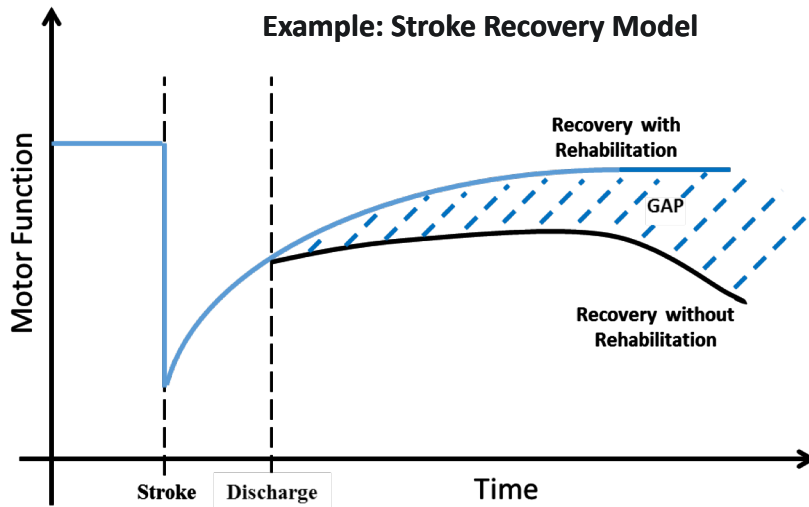
SOFOKLIS KYRIAZAKOS

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769807.



PROBLEM

Often the continuity of the rehabilitation process interrupts with the transition to the home environment.



(Modified from *Langhorne, Bernhardt, and Kwakkel 2011*)



MOTIVATION

- One of the greatest areas of innovation for a “**Virtual Coach**” is that it aims to support health management as **secondary prevention** and **self-care** at home.
- The **current state** of practice for secondary prevention is to provide **rehabilitation in an institutionalized manner**.



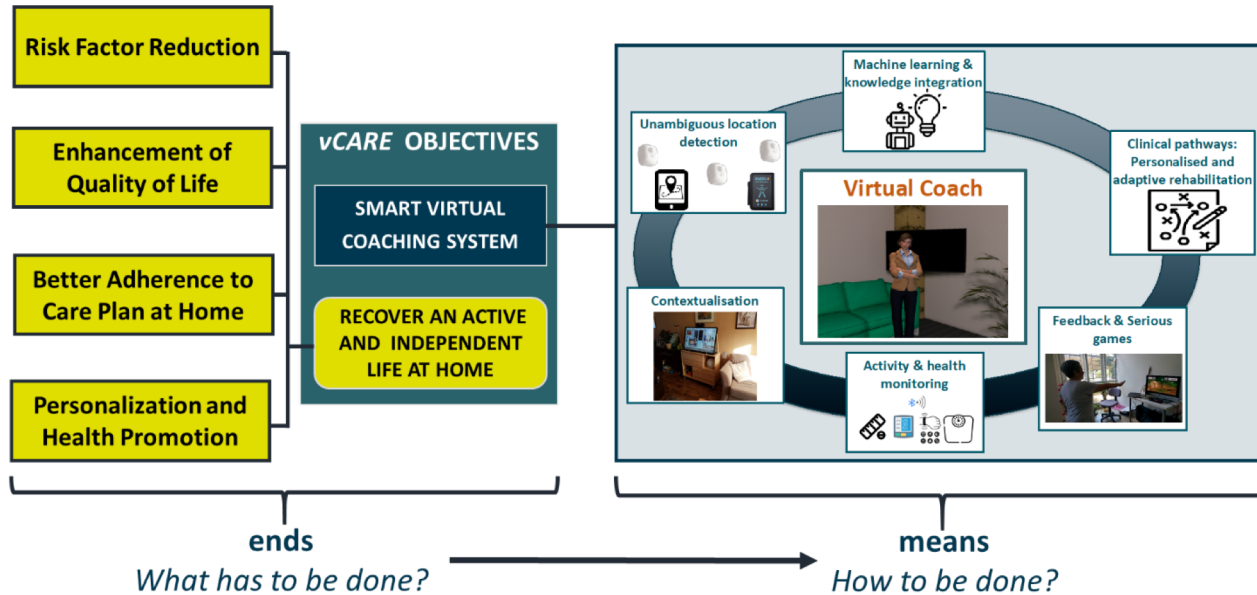
OBJECTIVES

- Offer home rehabilitation solutions through an **intelligent virtual coaching environment** that integrates machine-learning technologies with updated coaching services, and **clinical pathway services**.
- Create a complex system that is able to dynamically conduct **neurologic and cardiovascular patients' rehabilitation** using machine learning algorithms and predictive analytics.

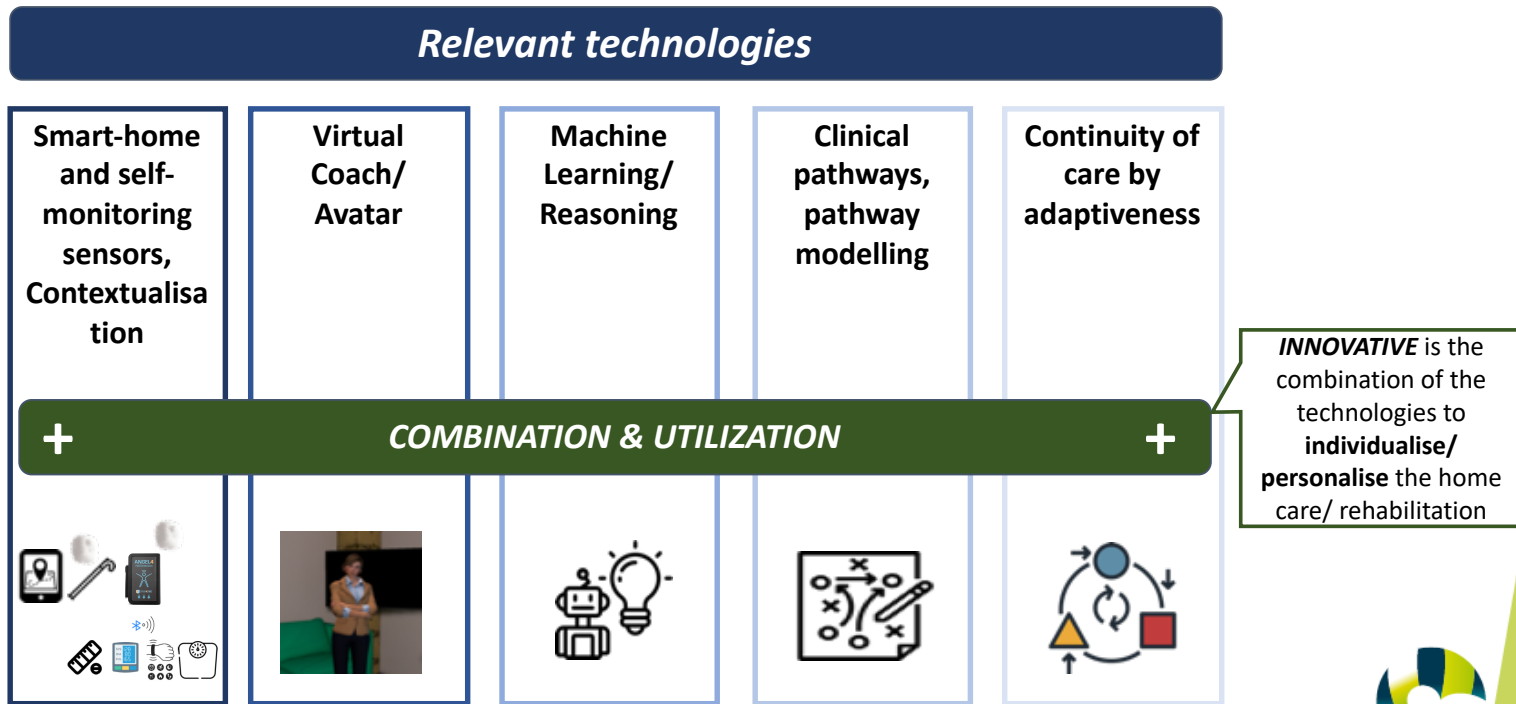


vCARE CORE CONCEPTS

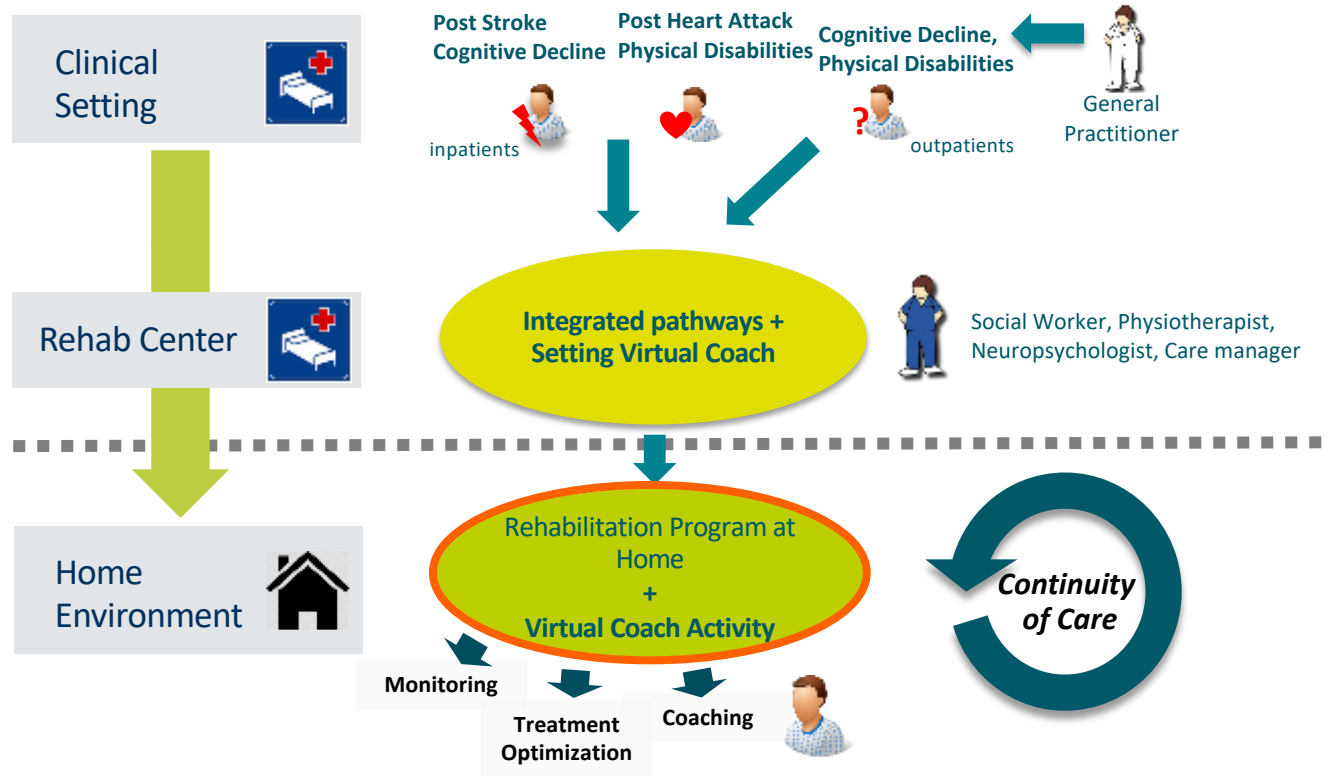
What has to be done to allow a proper rehabilitation the home environment?



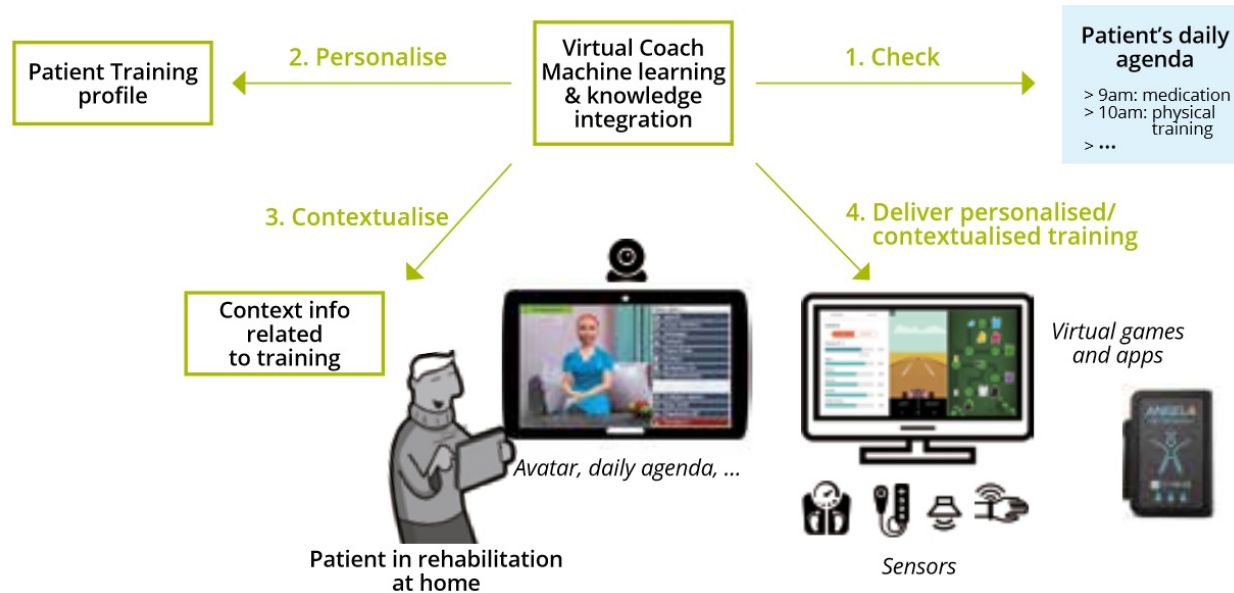
COMBINING DIFFERENT TECHNOLOGIES AS AN INNOVATIVE ELEMENT OF vCARE



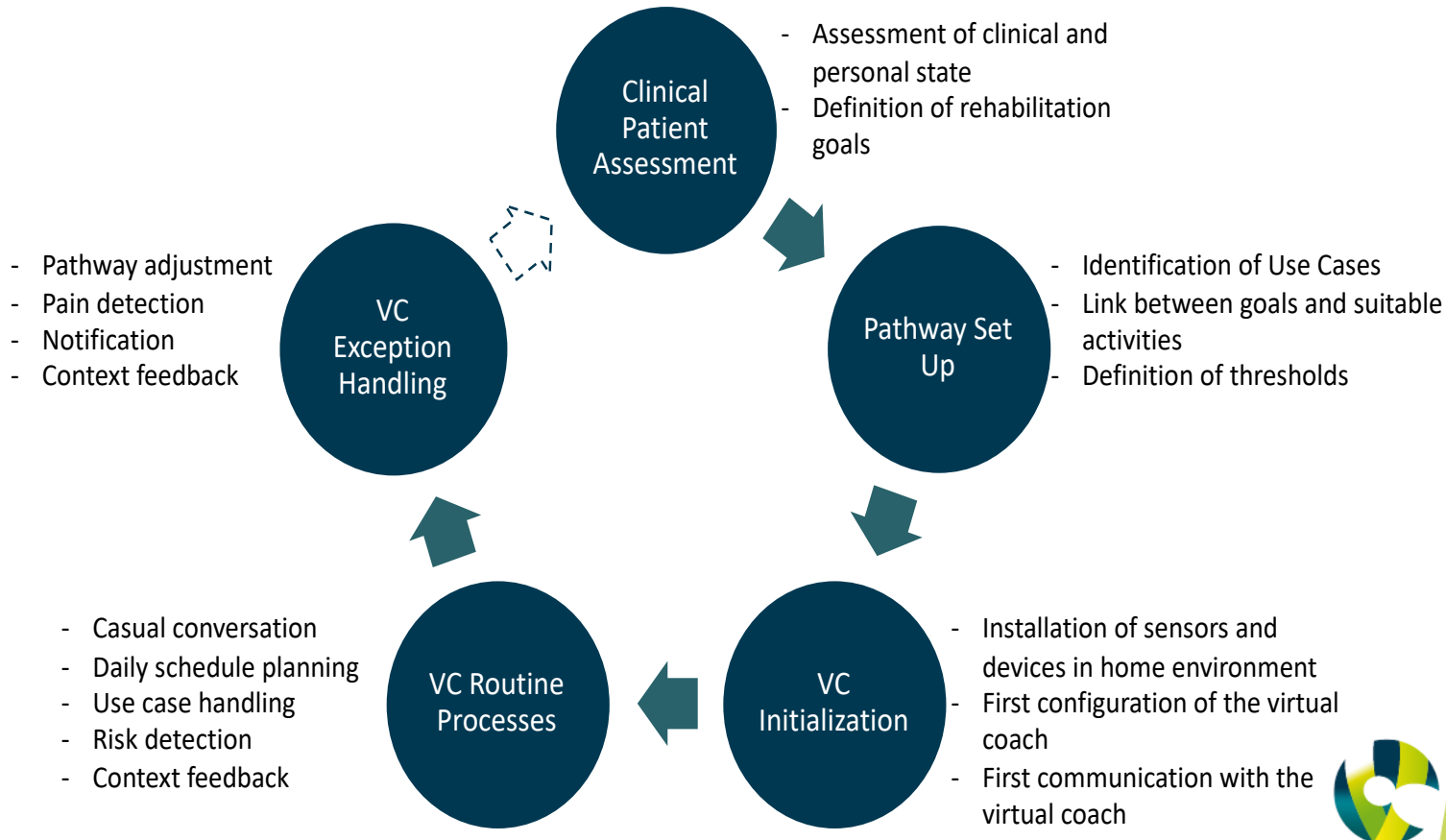
WHAT vCARE DOES – INTEGRATIVE APPROACH



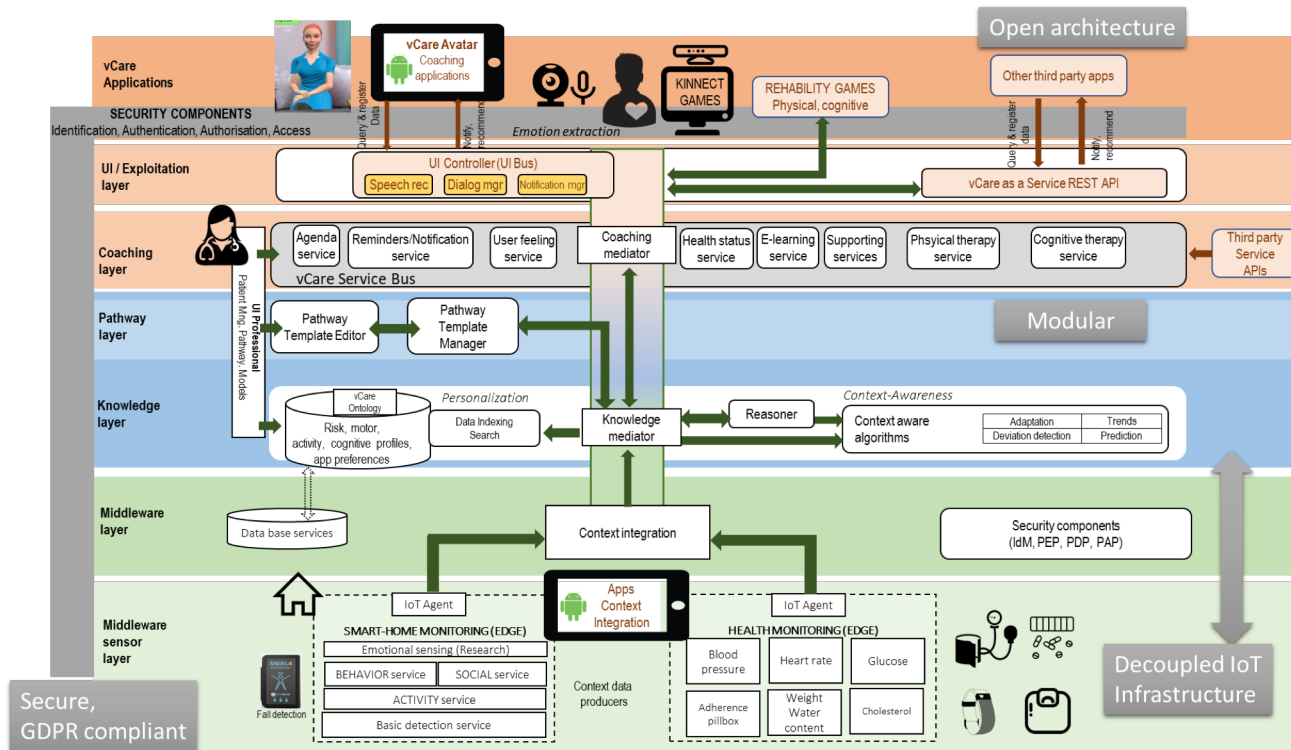
vCARE – TECHNICAL INTERACTION SCHEMA



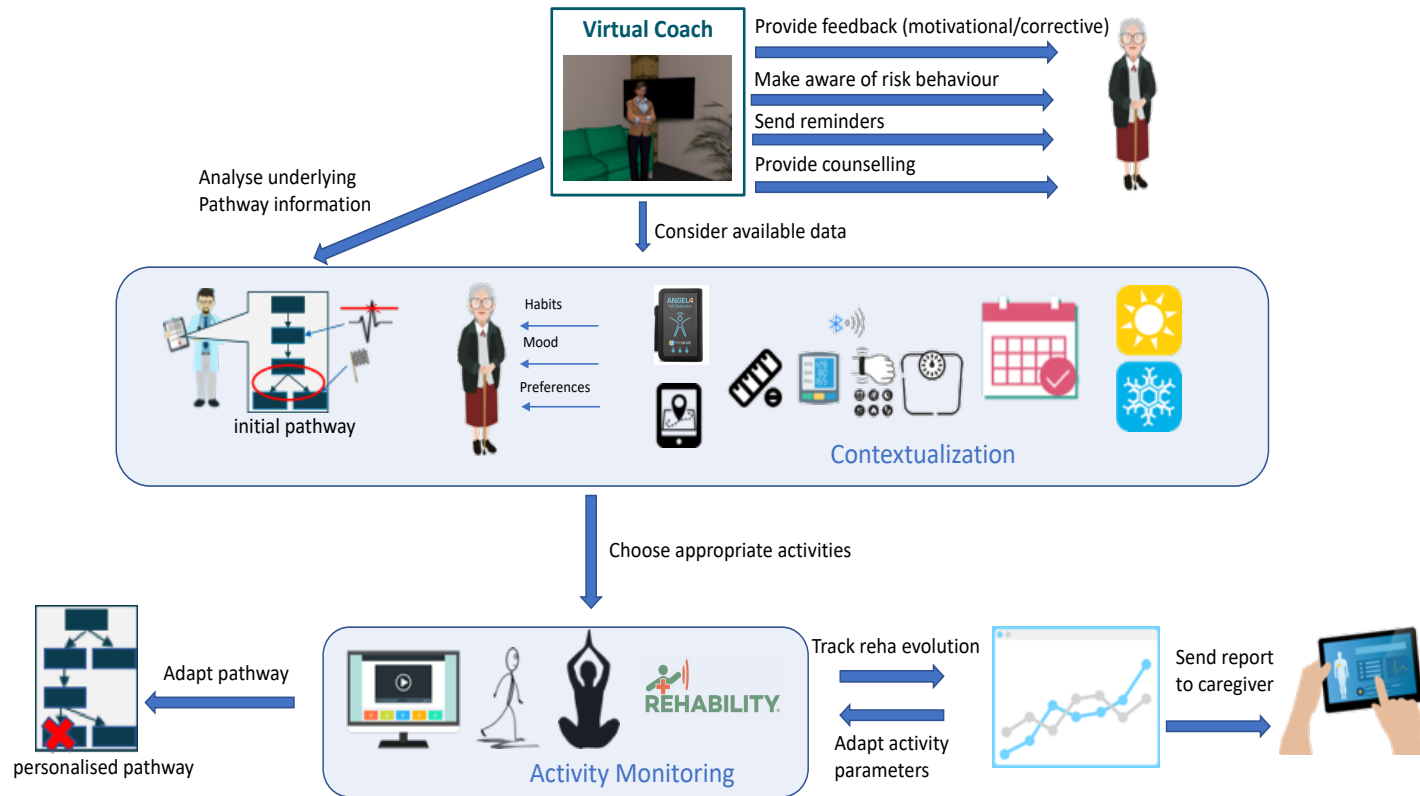
STAGES FOR VIRTUAL COACHING - “LIFE CYCLE”



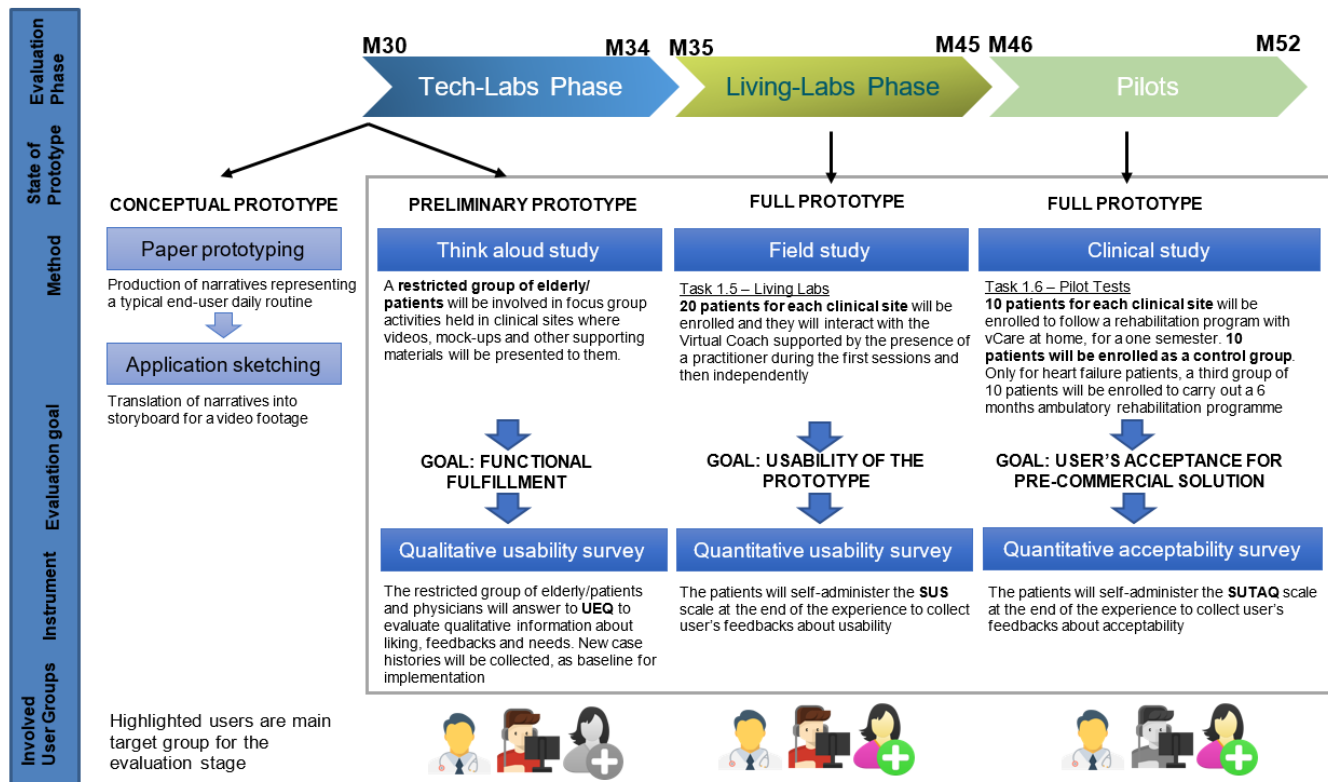
vCARE LAYERED APPROACH



SCOPE OF ACTION OF THE VIRTUAL COACH



PHASES OF PARTICIPATORY DESIGN



vCARE PARTNERS

Danish
reference
site



Basque
reference
site



Italian
reference
site



Romanian
reference
site



Medical Partners

- Osakidetza (**OSA**)
- Casa di Cura del Poloclinco (**CCP**)
- Aarhus Universitet (**AU**)
- Universitatea de Medicina si Farmacie 'Carol Davila' din Bucuresti (**UMFCD**)

Technical Partners

- Technische Universität Dresden (**TUD**)
- Forschungszentrum Informatik (**FZI**)
- Austrian Institute of Technology (**AIT**)
- Imaginary (**IMA**)
- Siveco (**SIV**)
- Mysphera (**MYS**)
- Innovation Sprint (**iSprint**)

Admin./Exploitation Partners

- Technische Universität Dresden (**TUD**)
- European Health Telematics Association (**EHTEL**)
- Innovation Sprint (**iSprint**)



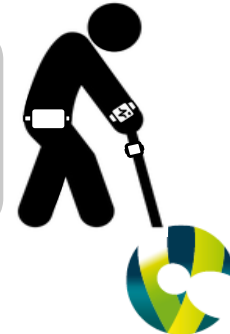
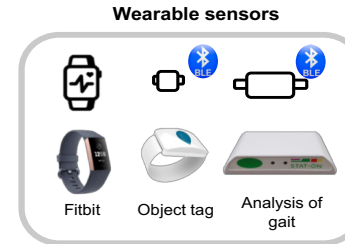
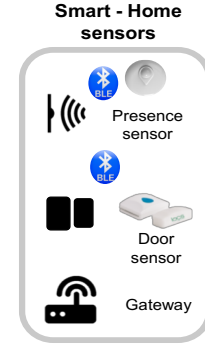
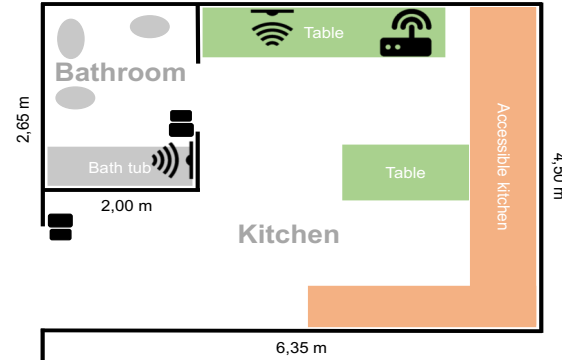
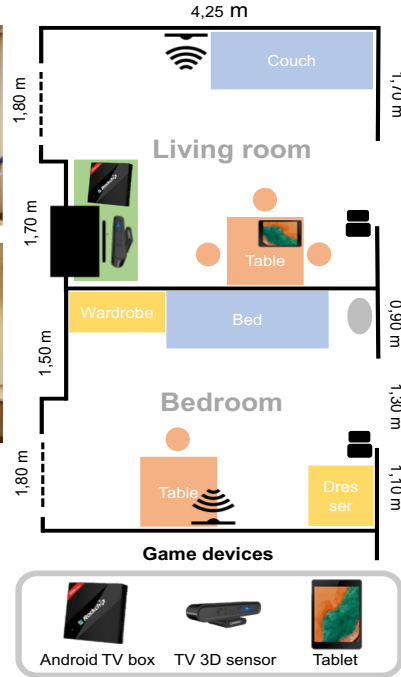
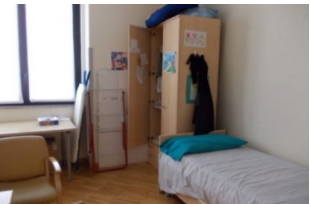
01/10/2020

SCENARIOS / PILOTS

- **Stroke Scenario** (Pilot Site: Milan/Italy)
- **Parkinson Disease Scenario** (Pilot Site: Bilbao/Spain)
- **Heart Failure** (Pilot Site: Bucharest/Romania)
- **Ischemic Heart Disease** (Pilot Site: Aarhus/Denmark)



LIVING LABS



ANTICIPATED RESULTS

- **Recovery of an Active and Independent Life at Home**

vCare aims to enhance the QoL and provide a reliable statement of its development with a 10% increase of the QoL score (SF-12), as off the in-house pilot study durations (6 month) and a 15% increase of the SF-12 mental sub-score (Mental Component Summary)

- **Risk Factor Reduction**

The goal is to reduce each specific risk factor of at least 10% of the baseline value, at discharge.

- **Better Adherence to Care Plan**

vCare expects that the number of subjects that adhere to the care plan with vCare will be raised up to 80%, while the number of rehabilitation treatments, performed autonomously by the patient supported by vCare, raised up to 70%.

- **Personalization and Health Promotion**

vCare expects a refinement rate of rehabilitation therapy (exercises and programs) raised up to the 60% of the cases where a change of treatment is required. The acceptance of the virtual coach (by professionals and patients) will be assessed through specific questionnaires (e.g. System Usability Scale), measured in the highest quartile score.



THANK YOU

www.vcare-project.eu



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