

HELP

Project Introduction



Date: October 2009



Index



01 Introduction

- Objectives
- Facts

02 System components

- Intraoral device
- Subcutaneous pump
- Motion sensors
- BAN
- The Frame

03 Project development

04 Exploitation

01 Introduction

Objectives



The objective of the HELP project is to develop a comprehensive system able to administer drug therapy in a controlled and either continuous or on-demand basis, to manage disease progression and to mitigate Parkinson's disease (PD).

Such a system will improve the quality of life of elderly people suffering from PD and reduce co-morbidity

01 Introduction

Facts

- 3 years project (2009 – 2012)
- Official starting date → June 15th
- Involved partners:



 Italy



 Israel



 Germany




 Spain



02 System components



- A non-invasive intra-oral continuous anti-PD drug delivery device 
- A subcutaneous pump to deliver rescue medication in order to prevent PD blockade episodes based on the motor activity
- A PAN (Personal Area Network) to gather user's environment information to detect blockades
- A telecommunication and services infrastructure to analyze and transfer information both from the user to an automated system (most of the times) or a point-of-care (for the regular follow-up and emergencies) and in the opposite direction
- A remote point-of-care unit to supervise the patients

02 System components

Intraoral device

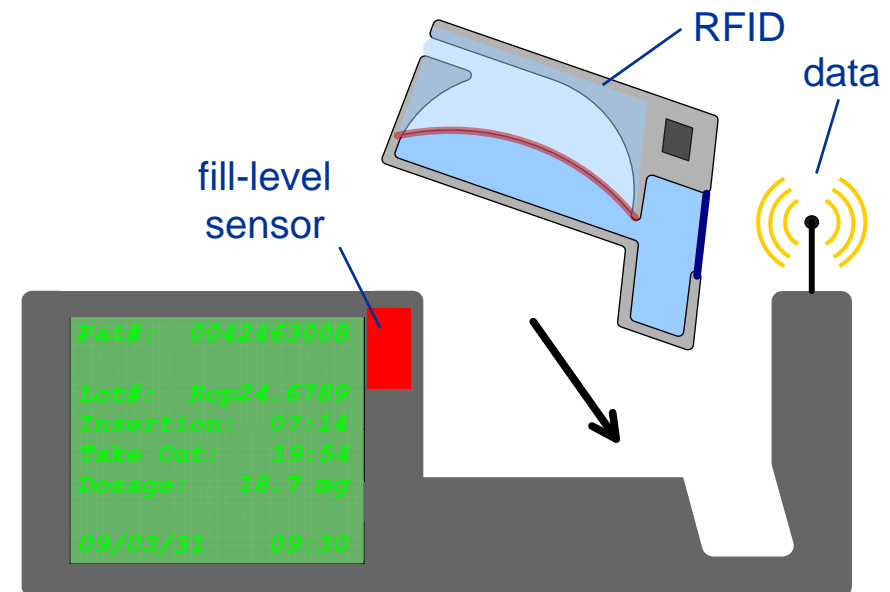


New drug delivery device – Buccal Dose Base Station for Feedback & Adjustment

For 24-hour use

Application Scenario

- 1. Patient selects *BuccalDose* for the day in the morning
- 2. Base station reads ID and transmits data
- 3. Sensor measures amount of delivered drug after use and transmits data



02 System components

Subcutaneous pump

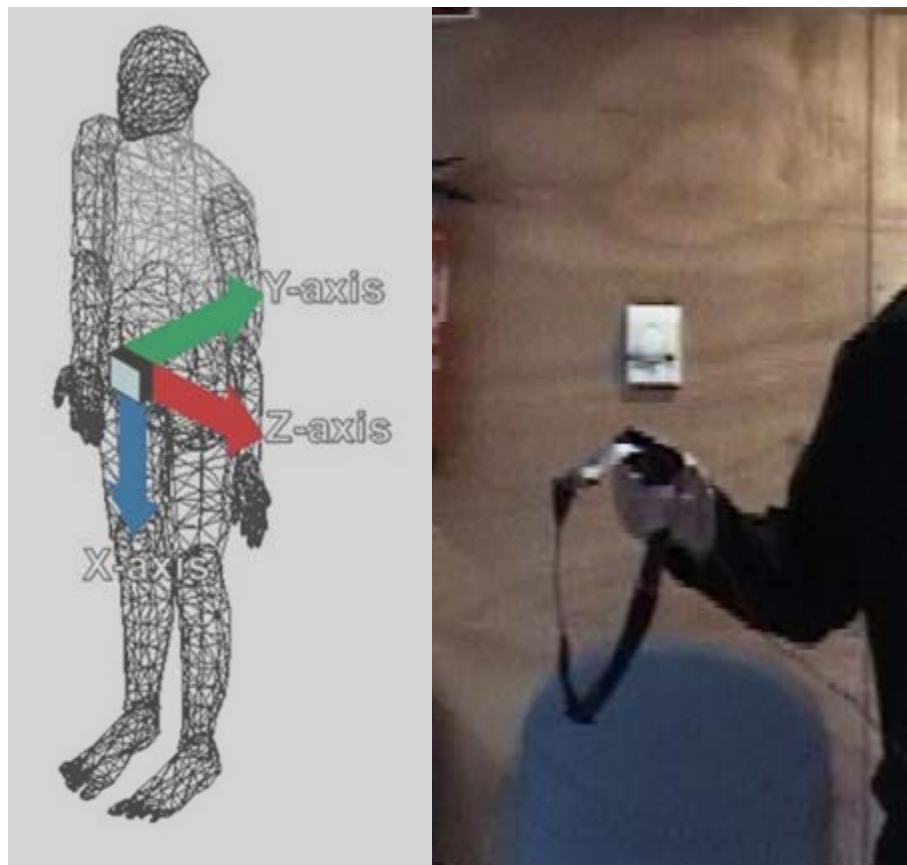


Wireless subcutaneous pump managed based on activity monitoring



02 System components

Motion sensors



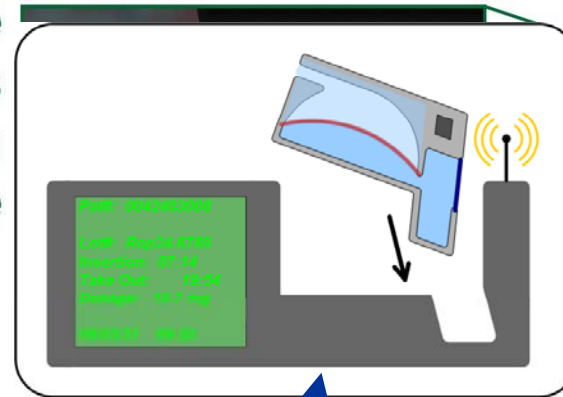
Gait evaluation via motion sensors

02 System components

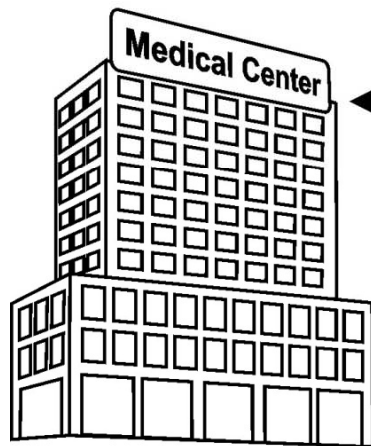
Body Area Network



Intraoral device for continuous "basal" infusion of ropinirole



Point of care



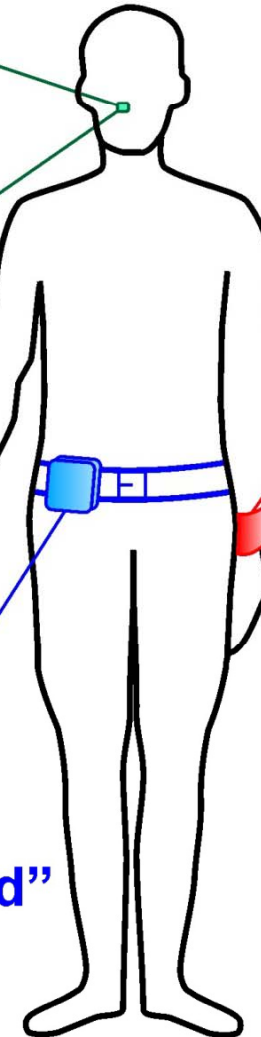
Web-based medical supervision

Mobile gateway



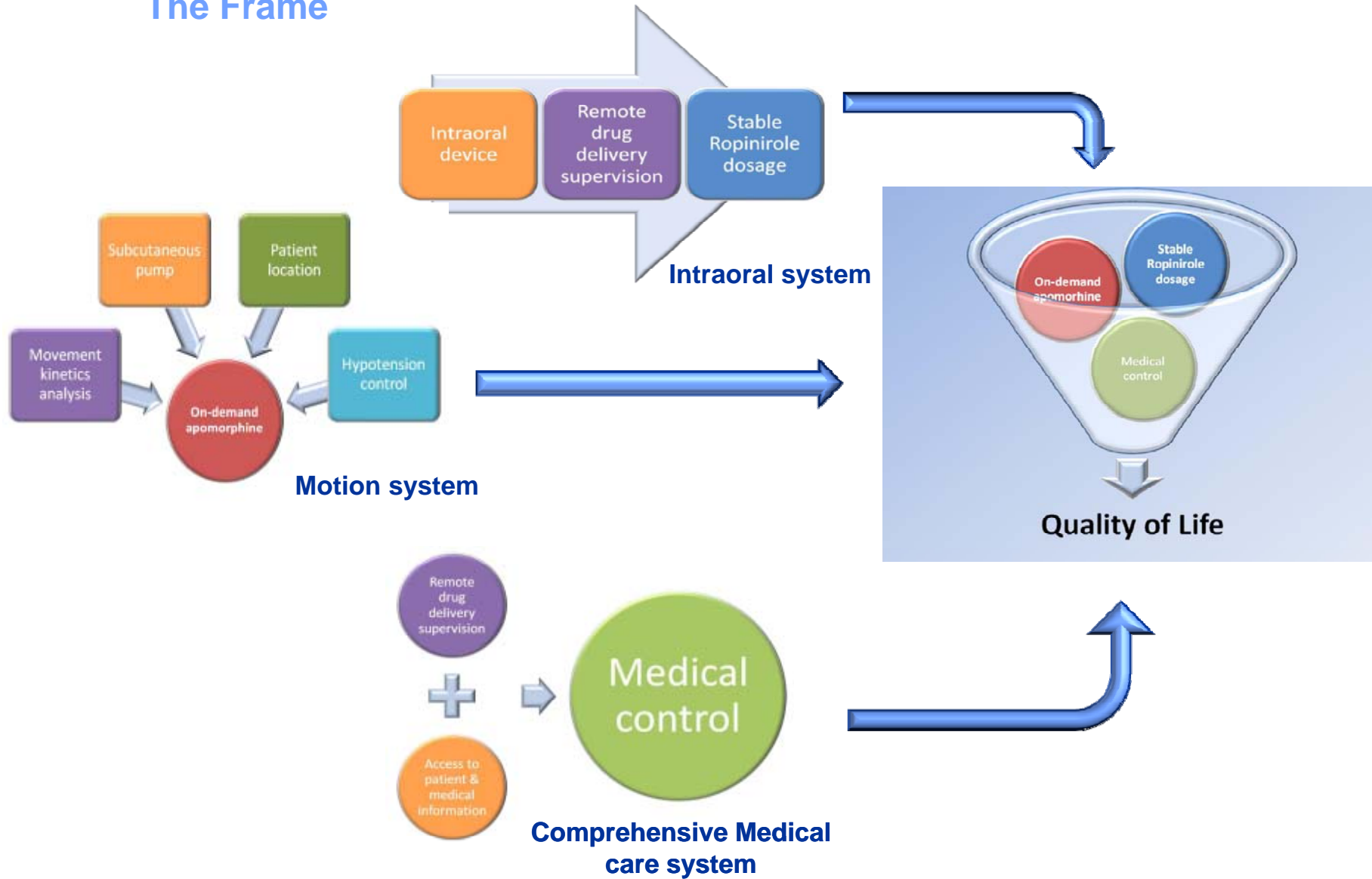
Blood pressure monitor

Belt wearing:
1. Motion Sensor
2. Pump for "on-demand" subcutaneous delivery of apomorphine

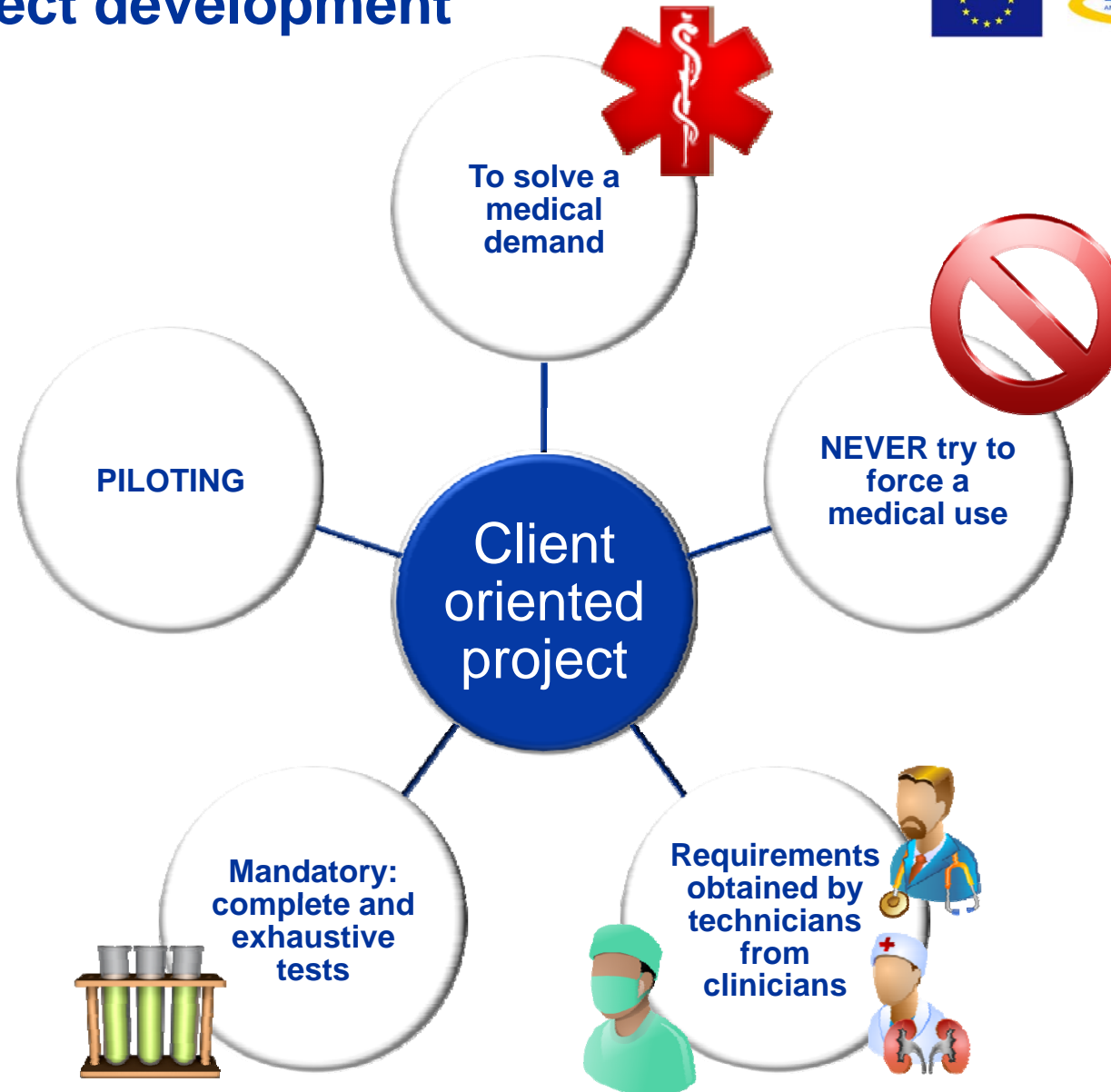


02 System components

The Frame



03 Project development



03 Project development

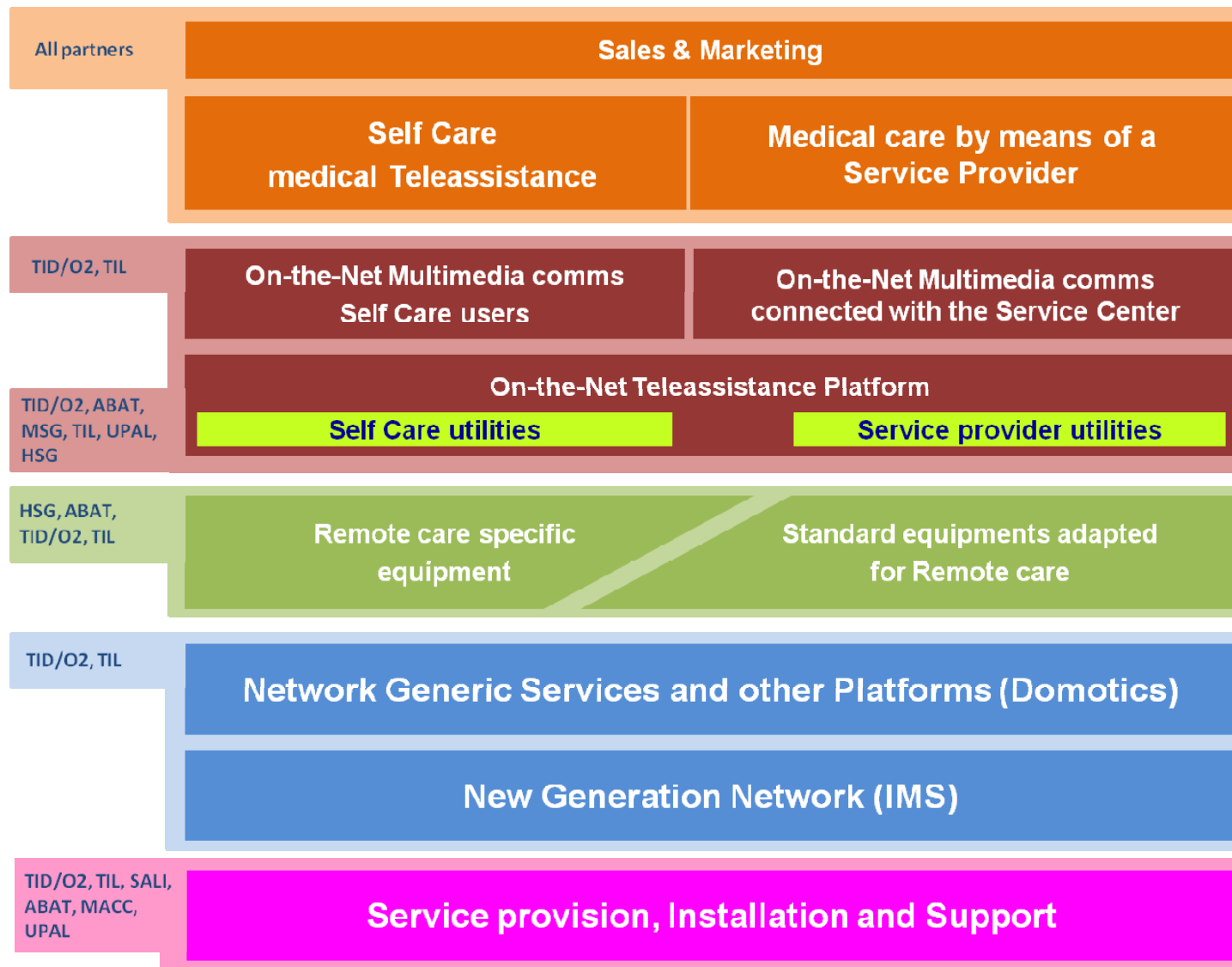


MANTRA

USERS (CLINICAL & PATIENTS) MUST BE INVOLVED DURING ALL THE PROJECT LIFETIME

USERS MUST PARTICIPATE IN THE IMPLEMENTATION OF THE TECHNICAL SOLUCIONS

04 Exploitation



H E L P



**Home-based Empowered living
for Parkinson's Disease Patients**