

Physical Rehabilitation at Home

The SHAPES and the MIRATAR projects



MIRATAR



**María José Santofimia – Universidad de Castilla-La Mancha
Presentation at EPR Annual Conference**

Málaga, 18th of June 2024



Background: The SHAPES project



S H A P E S

SHAPES aims to create an open Ecosystem enabling the large-scale deployment of digital solutions for healthy and independent living addressed to older individuals who face reduced functionality and capabilities



PROGRAM:

H2020-EU.3.1.4.1. – Active ageing, independent and assisted living.

TYPE OF ACCIÓN: Innovation Action.

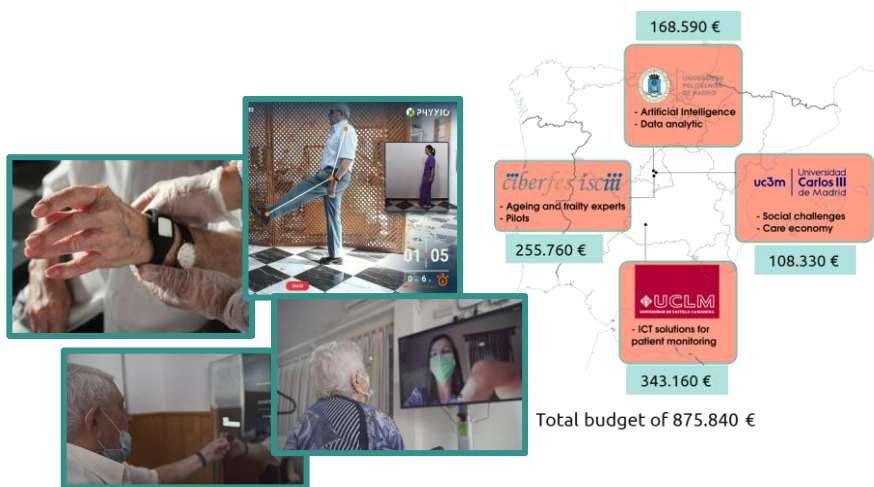
DURATION: 48 months (1 nov 2019 – 31 oct 2023).

TOTAL BUDGET: 20.944.318,75 €

CONSORTIUM: 36 partners from 14 European countries.

COORDINATOR: Maynooth University (Irlanda).

MIRATAR aims to contribute to the digital transformation of the care economy through the generation of scientific knowledge and new technologies that favor the transition towards a deinstitutionalized care model.



PROGRAM: "Strategic Projects Oriented to the Ecological Transition and the Digital Transition"

DURATION: 24 months

TOTAL BUDGET: 875.840 €

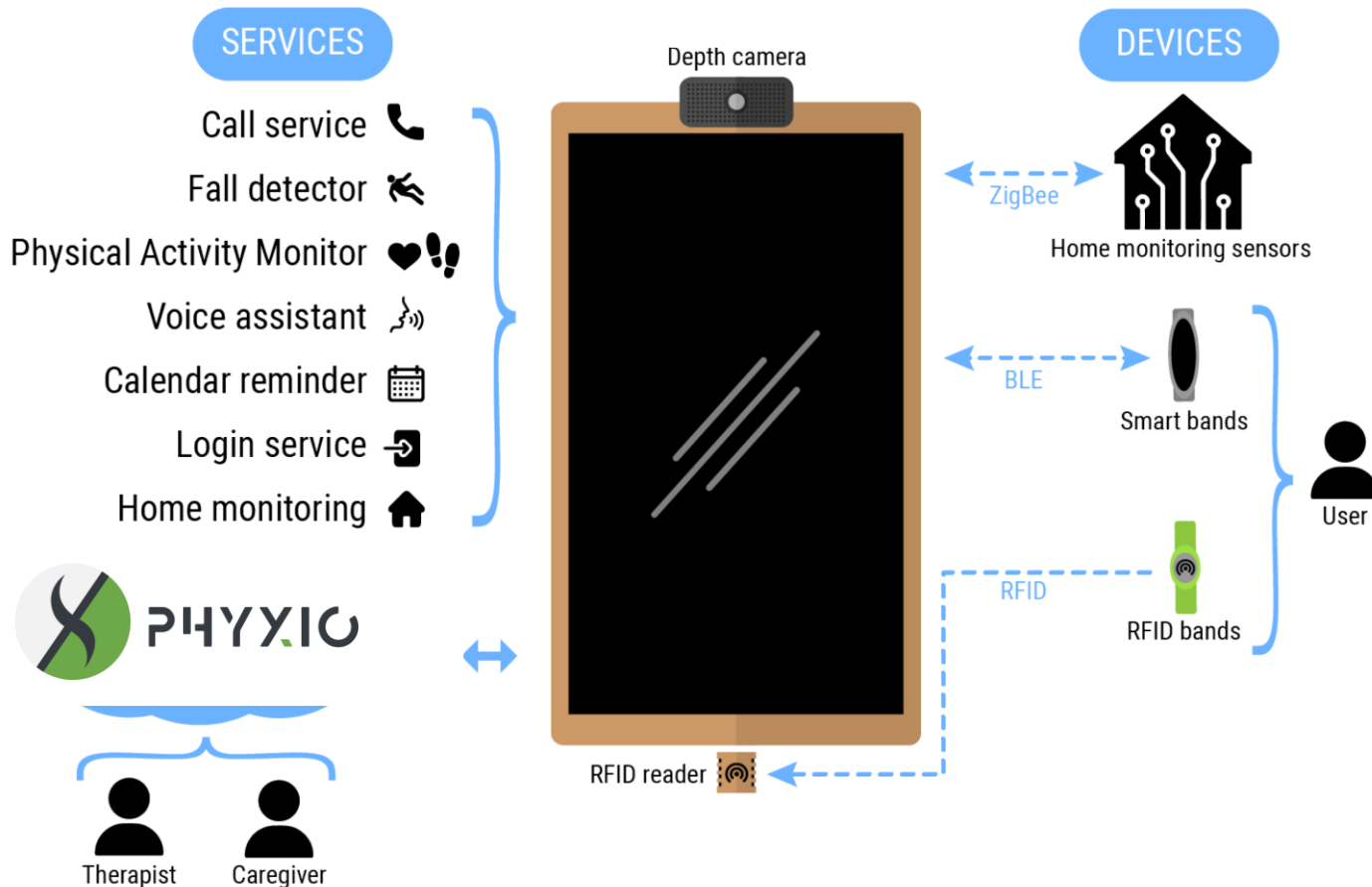
CONSORTIUM: 4 partners.

COORDINATOR: UCLM

The *Smart Mirror* platform for physical rehabilitation at home and much more

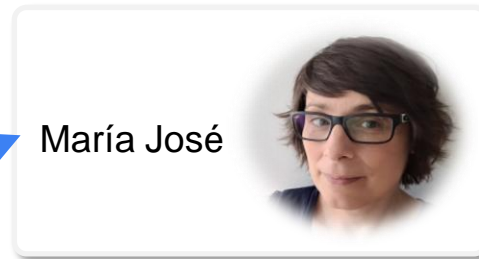


The Smart Mirror ecosystem

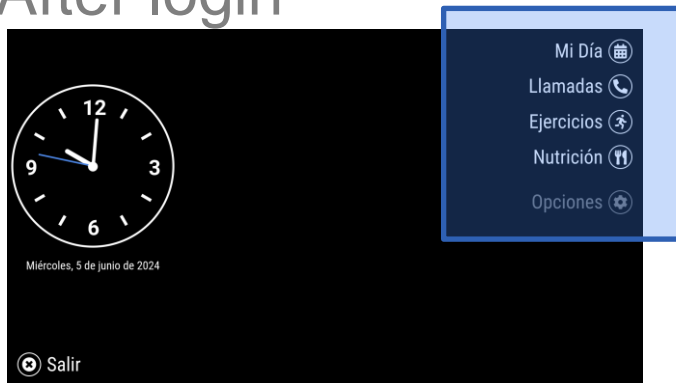


The *Smart Mirror* interface

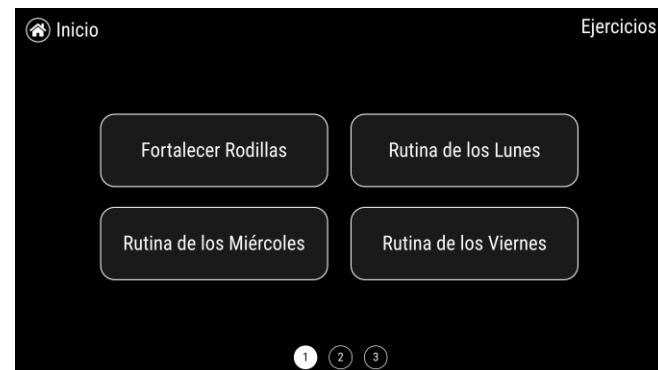
1) Login with RFID card



2) After login



3) Physical exercise routines





The trainer or caregiver view: exercises

Training sessions



Administración de Sesiones

Todas las sesiones

Tip: Pulsa sobre el nombre de una columna para ordenar la tabla por ella.

#	Rutina	Fecha
38	Daily Routine * Body Pose * Body Pose * Body Pose NPE Iter.: 0 / Max. 5 / 5 time: 5s / 5s time: 8s / No limit. time: 5s / 10s	3 de Junio de 2024 a las 14:22
37	Rutina de dedos No finished exercises.	3 de Junio de 2024 a las 14:22
36	Daily Routine * Body Pose * Body Pose Iter.: 1 / Max. 5 / 5 time: 5s / 5s time: 5s / No limit.	3 de Junio de 2024 a las 11:15
35	Rutina de Body Pose NPE * Body Pose NPE Iter.: 0 / Max. 5 / 5 time: 4s / 5s	3 de Junio de 2024 a las 10:44
34	Daily Routine * Body Pose NPE Iter.: 0 / Max. 5 / 5 time: 10s / 10s	3 de Junio de 2024 a las 10:40
33	Daily Routine * Body Pose Iter.: 0 / Max. 5 / 5 time: 1s / 5s	3 de Junio de 2024 a las 10:39
32	Daily Routine * Body Pose Iter.: 1 / Max. 5 / 5 time: 5s / 5s	3 de Junio de 2024 a las 10:38
31	Rutina de Body Pose NPE No finished exercises.	3 de Junio de 2024 a las 10:35

1 de 1

Health data



Panel de Salud

Panel de salud for Cristina Bolaños

Today's Activity: Sleeping 47%, Reading 22%, Walking 19%, Disconnected 7%

Calories Today: 23 cal

Steps Today: 1130 steps

Sleep Time: Light Sleep, Deep Sleep, Awake

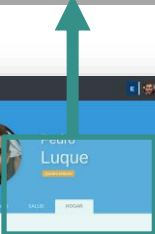
Best steps: 1130 steps

Heart Rate Today: Current 107 bpm, Average 63.3 bpm, Minimum 40 bpm, Maximum 113 bpm

Steps: 1130 steps

Heart rate: 107 bpm

Home data



Home Dashboard

SENSOR DE PRESENCIA: COCINA VACÍO, BAÑO VACÍO, HABITACIÓN VACÍO

SENSOR DE PUERTA/VENTANAS: PUERTA PRINCIPAL CERRADO, HABITACIÓN ABIERTO

TEMPERATURA: Gráfico de temperatura

HUMEDAD: Gráfico de humedad

RECURSOS: CAFETERA APAGADO, TELEVISOR APAGADO, LAVADORA APAGADO, LAVAVAJILLA APAGADO

ENERGÍA DE ASESORAMIENTO: Gráfico de energía

Pilot Sites	SAL	AUTH
Participants	N=15 (9 F – 6 M)	N=5 (2 F – 3 M)
Age	82.1 ± 7.6	63.4 ± 10.2
Intervention	30-min sessions 2 times a week For 8 weeks	30-min sessions 3 times a week For 4 weeks
Exercise sessions completed	677	137
Exercises completed	3312	645

Some results from the SHAPES project



Evaluation item	Baseline Mean \pm SD	8 week Mean \pm SD	Follow-up Mean \pm SD	p value
WHOQOL-Bref	94.0 \pm 6.5	95.7 \pm 4.1	96.5 \pm 5.8	0.141
Social Function	11.2 \pm 1.7	11.7 \pm 1.4	12.9 \pm 1.4	0.003
Barthel modified by Shah	86.1 \pm 13.2	89.9 \pm 9.0	90.2 \pm 8.9	0.006
Shoulder Right	119.9 \pm 27.4	141.0 \pm 29.2	148.3 \pm 28.0	0.002
Shoulder Left	108.9 \pm 30.7	132.1 \pm 25.9	155.8 \pm 23.7	0.001
Hip Right	18.0 \pm 8.6	21.7 \pm 9.9	28.1 \pm 12.9	0.002
Hip Left	24.5 \pm 9.8	31.0 \pm 9.6	30.7 \pm 14.0	0.025

Some results from the SHAPES project



Pilot site	SAL	AUTH
SUS (0-100)	86.8 ± 6.7	85.5 ± 9.9
TAM SAL (2-10) AUTH (4-20)	9.8 ± 0.8	18.2 ± 3.4

Experience with

Phyx.io:

- **0%** poor.
- **60%** good.
- **40%** very good.

93.3% reported routines had an impact:

- Increased security.
- Motivation to exercise.
- Physical improvements and well-being.
- Improved social relationships.





Thanks for your attention!



María José Santofimia Romero
Grupo ARCO
<https://arcoresearch.com/>
Universidad de Castilla-La Mancha
mariajose.santofimia@uclm.es

