Pre-validation Experience Updates on Deployment Apulia Site

CSS Fondazione Casa Sollievo della Sofferenza

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Italian Pilot + CB meeting in Firenze

30-31/03/2022

Focus on the Timeline: what has been done so far?

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Nov – Dec '21

- Technology procurement

Jan – Feb '22

- Pre-Validation PH2

Dec '21 – Jan '22

- Arrival of Devices

❖ Setup of Discovery and Sentab accounts
❖ Weekly online Meeting with technical partners
❖ Updates of the Training Material and Manuals

❖ Configuration of the Devices
❖ Internal testing of the devices and functionalities

❖ Recruitment
❖ Test Session
❖ Training and Evaluation
❖ Monitoring of the prevalidation
❖ Peak of COVID-19 infections

March '22

Recruitment Group 1A

Pre-validation Recruitment: Phase 1 vs Phase 2

Phase 1

I Session	II Session
Where	
•*Retirement home*	*Hospitalized/Out-patient*
Who	
•*3 Older Adults* •*5 Informal caregivers* •*2 Formal caregivers*	•*2 Older Adults*

Phase 2

1 Session for each OA
Where
•*Geriatrics Unit @CSS' facilities*
Who
• *5 Older Adults from Out-patient visits* • *4 Informal and 2 Formal Caregivers*

Test Session: Local Key Performance Indicators (KPI) Mapping

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Older Adults

General

Quality of life

Acceptability and Usability

Collected Data

Sociodemographic data

Physical wellbeing and quality of life levels

Mobility

Cognitive Abilities

Psychological and behavioural symptoms

Social aspects

Resiliency level

Caregiver constraint

Loneliness level

Acceptability of technology

Usability of technology

General opinion about the experience

Difficulty level of use

Informal/Formal Caregivers

General

Quality of life

Acceptability and Usability

Collected Data

Sociodemographic data

Caregiver constraint

Acceptability of technology

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General opinion about the experience

Difficulty level of use
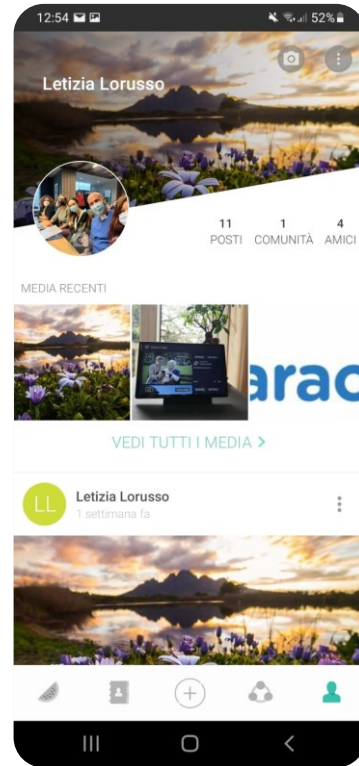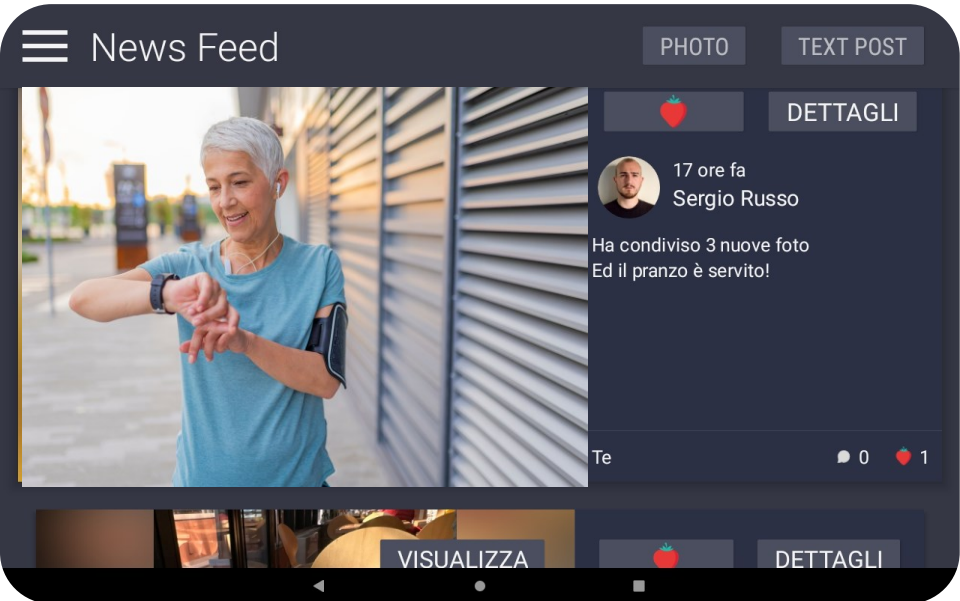
+ Global KPIs:
- **UCLA Loneliness test**
- **Rockwood Frailty test**

+ Technostress

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Socialization and Stimulation Service @Apulia PS

Through SENTAB Vanilia APP/Tablet [OA] & Smartphone app[IC, FC]

SENTAB	
Remote Counselling with a Psychologist Once every 2/3 weeks	
Community on Health tips and wellbeing (coaching with news and posts)	
Community on Addressing fake stories about health and lifestyle (coaching with news and posts)	
Getting in touch with family and caregivers (media sharing and videocalls)	
Cognitive games (Words, Picture, Sudoku)	

Router + cellular SIM

Monitoring Service @Apulia PS

Smartwatch to gather activity data

Router + cellular SIM

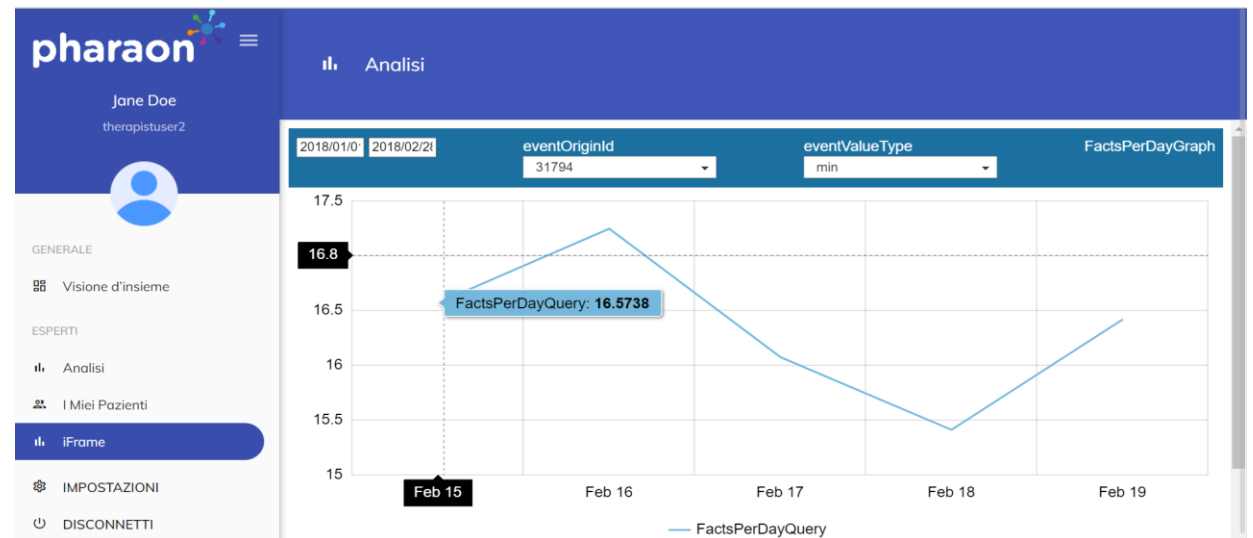**IoT Sensors to gather environmental data**

Shelly H&T and PIR

Qingping Air Quality Sensor

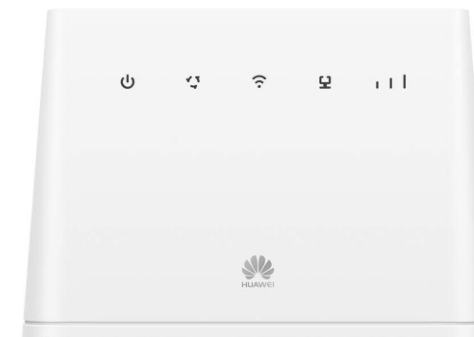| MONITORING |
| --- |
| Allow caregivers to evaluate the health conditions of the Older Adult through a Dashboard |
| Check for the lifestyle and habits |
| Check if the older adult complies with the number of prescribed steps over a defined time period |

The devices

SENTAB
on Tablet
(**Socialization&Stimulation**)

WiFi Router
With Cellular
connection

Shelly
H&T
PIR Movement
(**Monitoring**)

MaxHealthBand
+ SeniorPhone GW
(**Monitoring**)

Training Sessions

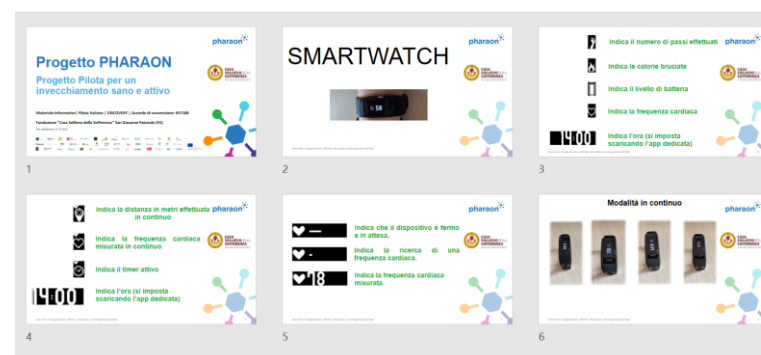Training material: mainly papery, direct communication.

Evaluation of the training

The Training Evaluation Inventory (TEI) – The first 17-items

Training Outcome Dimensions
Valutazione della formazione

		English		Italian
Subjective enjoyment		Overall, I liked the training.	Gradimento soggettivo	Dopotutto, ho apprezzato formazione.
		The learning atmosphere was agreeable.		L'atmosfera di apprendimento è stata gradevole.
		The learning was fun.		L'apprendimento è stato divertente.
Perceived usefulness Item		I find the training useful for my job (or beyond the Pharaon project).	Utilità percepita	Ho trovato la formazione utile per proseguire nella sperimentazione.
		Investing time in this training was useful.		Investire il mio tempo in questa formazione è stato utile.
		I can apply the content of this training in my job (or beyond the Pharaon project).		Posso applicare il contenuto di questa formazione al di fuori del progetto Pharaon.
		I derive personal use from this training (or beyond the Pharaon project).		Ne ho derivato un utilizzo personale al di fuori del progetto Pharaon.
Perceived difficulty		The contents were comprehensible.	Difficoltà percepita	Il contenuto era comprensibile.
		The language (foreign words and technical terms) was comprehensible.		Il linguaggio (termini tecnici e parole nuove) era comprensibile.
		I kept up thematically in training.		Ho continuato ad esercitarmi nel loro utilizzo dopo il training.
		The time was sufficient for the themes covered.		Il tempo di formazione è stato sufficiente per i temi affrontati.
Subjective knowledge gain		I have the impression that my knowledge has expanded on a long-term basis.	Percezione delle competenze acquisite	Ho l'impressione di aver acquisito delle competenze a lungo termine.
		I will be able to remember the new themes well.		Sono in grado di ricordare bene i temi.
		I think that I will still be able to report what I learned some time after the training.		Penso di essere in grado di ripetere ciò che ho imparato durante la formazione.
Attitude towards training		I will apply what I learned to my day-to-day work (or in my everyday life).	Attitudine nella formazione	Applicherò ciò che ho imparato nel mio nella vita di tutti i giorni.
		I find it good that the privacy was imparted and/or discussed.		Trovo importante che si sia discusso a proposito della privacy.
		I would recommend this training to my colleagues.		Raccomanderò la formazione ad altre persone.

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Prevalidation Phase 2: Lessons Learned and Challenges

Service	Description
Monitoring	• The battery of the smartband/watch should last longer • The tested smartband is not adequate (data fair from reliable) • Batteries of the Shelly devices may be an issue • The Air Quality sensor have a user interface that can give users feedback on the temperature (Shelly devices do not!) • Dashboard and charts not always available. Collaborating with ASCORA to better define user stories and charts to be displayed in the dashboard. • Not easy to pre-estimate how many SIM cards and routers needed
Socialization & Stimulation	• Notification system on the Sentab app is crucial to keep OAs active and engaged • Calls on SENTAB not always working -> expected fixing • An OA from the Prevalidation decided not to continue due to high expectations missed (highly skilled person) • Cognitive games need new scenarios (repetitive), more games needed • Labels finally available in Italian

Lessons Learned

Prevalidation Phase 2: Reflection

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Reflection on what worked and what did not

- Training sessions + tests, along with cognitive tests and technology evaluation (ASQ, SUS) made feel older adults overwhelmed (too many tests that may affect the quality of the answers). Need for lighter sessions.
- Informal caregivers as "facilitators" of technology.
- Collaborative approach in the Italian Pilot with the technical partners to fast address issues and overcome together challenges. Action prioritization!
- Training is crucial for users to keep them exploiting the functionalities of the services
- Prevalidation of new functionalities is crucial before releases
- Evaluating the replacement of the smartband with FitBit smartwatch
- Automatic updates of the software is needed
- Devices unavailability due to lack of microchips. Foreseeing delays in procurement
- Actively involving OAs in the Monitoring service by giving them an accessible UI

Reflection

D7.2 Small scale pilots validated as defined in D7.1 Pilot Planning

Pre-validation Phase I
Pre-validation Phase II

Milestone 5!

DPAs

Data Protection Agreements

- **Co-controllerships** on data treatment between tech partners and pilot site (CSS)

- Challenge both from the Ethical perspective and from the Data Protection point of view

- Addressing it with **coordinated clear approach**, sharing and defining together **data flows**

- Least information rule (**minimum data principle**): use only the needed information (while keeping the system usable)

- **Informing** the participants correctly

- FitBit series devices under evaluation

- **DPIA** work in progress

PARTNER	Status
ENT	
SENTAB	
SENLAB	
ASCORA	
UNIFI	
ORTHOKEY	

DEPLOYMENT Phase: Planned roadmap

G1 will test current release (from Pre-validation)

G2 will test a future release with corrections and updates

G3 will test solutions from Open Calls

Open Calls

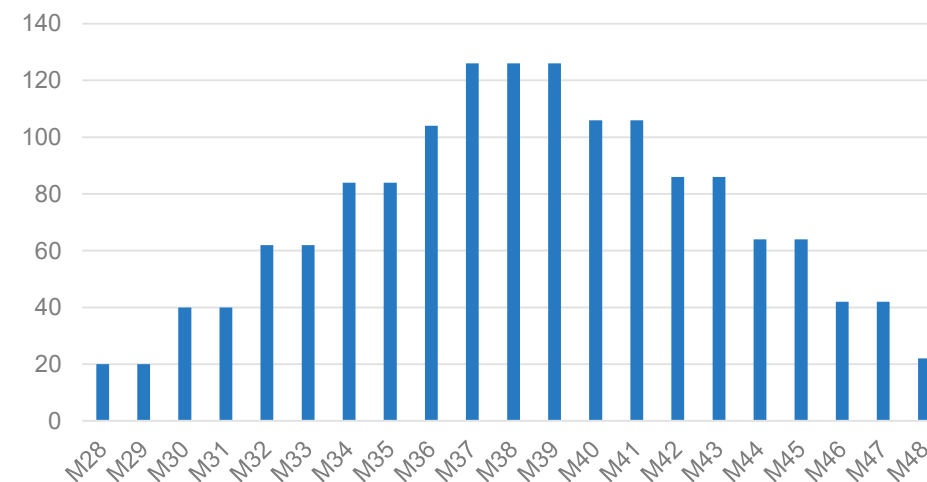| Apulia		OLDER ADULT			INFORMAL			FORMAL		
Group	Service	Total	Intervention	Control	Total	Intervention	Control	Total	Intervention	Control
G1A*	SOC	20	10	10	20	10	10			
G1B*	MONIT	20	10	10	20	10	10	14	7	7
G2A	SOC	22	11	11	22	11	11			
G2B	MONIT	22	11	11	22	11	11	16	8	8
G3A	STIM Cogni	20	10	10	20	10	10			
G3B	STIM Fisico	22	11	11	22	11	11	12	6	6
	Total	126	63	63	126	63	63	42	21	21

Active OA and IC in Apulia

	2022										2023										
	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
	M28	M29	M30	M31	M32	M33	M34	M35	M36	M37	M38	M39	M40	M41	M42	M43	M44	M45	M46	M47	M48
G1A	START					INTER						END									
G1B			START					INTER						END							
G2A					START					INTER						END					
G2B						START					INTER							END			
G3A								START							INTER					END	
G3B										START						INTER					END

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DEPLOYMENT Phase: Updates

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WF provisioning dei tablet

Phases	Control Group	Intervention Group	Service
From prevalidation	-	4 OA, 4 IC, 2 FC	
By the end of March '22 (deployment, G1A)	+10, from outpatient visits @Geriatrics Unit	+6 OA, +6 IC, +8 FC, pre-recruited, waiting for provisioning of the devices	Socialization & Stimulation
April '22	+10, from outpatient visits @Geriatrics Unit	+10 OA, +10 IC, +6 FC, pre-recruited, waiting for devices	
May '22 G1B	+20, from outpatient visits @Geriatrics Unit	+20 OA, +20 IC, +20 FC	Monitoring

Challenge: estimates on the provisioning of the tablets vary week by week due to the lack of the production of microchips.

Next Steps

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Evaluation framework: timeline

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GLOBAL KPIs

EQ-5D-3L
CarerQoL
UCLA
Training Evaluation (TEI 17-item)

EQ-5D-3L
CarerQoL
UCLA
SUS

EQ-5D-3L
CarerQoL
UCLA
SUS

RECRUITMENT

T0 - Baseline	T3	T6 - Intermediate	T9	T12 – Final

LOCAL KPIs

MONITORING

Periodic Psychological Counselling (15 PZ, 30')

SOCIALIZATION&STIMULATION

posts of content on SENTAB platform (Coaching)

Cognitive (OA)
Technology
(SUS,AMQ, Technostress)

Technology
(SUS,AMQ, Technostress)

Cognitive (OA)
Technology
(SUS,AMQ, Technostress, UE

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Milestone 6

The first phase of the pilot deployment successfully achieved as described in D7.1

Apulia Pilot Site Team

Milestone 6!