



# SMARTBEAR

## USE CASE SCENARIOS

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 857172 (SMARTBEAR).



## The SMARTBEAR platform

SMARTBEAR platform will be a system integrating sensors and devices which will be able to record data from the daily living of its users.

This information will be analyzed to offer **personalized interventions with the aim of promoting a healthy and independent lifestyle.**

The platform will offer technological support to record data and provide intervention, but every decision is made from the clinician or other healthcare professional!



This project is addressed to over 65 people with at least two of the following morbidities:

- Cardiovascular diseases
- Balance and posture impairments
- Hearing loss
- Frailty
- Cognitive impairments
- Mental disorders



# Objectives

Your perspective allows us to understand the real needs of the platform's potential users.

We seek your personal opinion on the platform:

- What should be offered?
- What should not be offered?

We will show you scenarios to explore some of the platform's functions together.

Every time this symbol appears:  we will open a discussion.



## «SMARTBEAR» App



1. MyHeart
2. MyBalance
3. MyMood
4. MyDiary
5. MyDiet
6. MyHearing
7. MyMemory
8. MyMedication
9. MySmartbear
10. MyAppointments



## Giovanni – Diet and physical exercise

«This golden valley brushed from the wind belongs to me. But above all, I belong to it»



**Giovanni**

**Age:** 75

**Occupation:** Farmer

**Location:** Piacenza's countryside

**Lives with:** Lavinia, wife

**Caregiver:** -

**Hobby:** walking his dog

### Description

Giovanni has been **losing weight and muscular mass** from a few years. One evening he was walking his dog and, he could not say how, has a **terrible fall**.

Since that day, Giovanni has been feeling unsure to walk as before, so he spends a most of his day sitting, **inactive**. Lavinia is worried: she never wants to let him alone and after some time, she brings him to a medical examination. The doctor finds that Giovanni **has not been eating enough** and he should be doing physical exercise to avoid weakening any further.

### Problems

- Weight loss
- Malnutrition
- Physical inactivity
- Risk of falling

### He wishes...

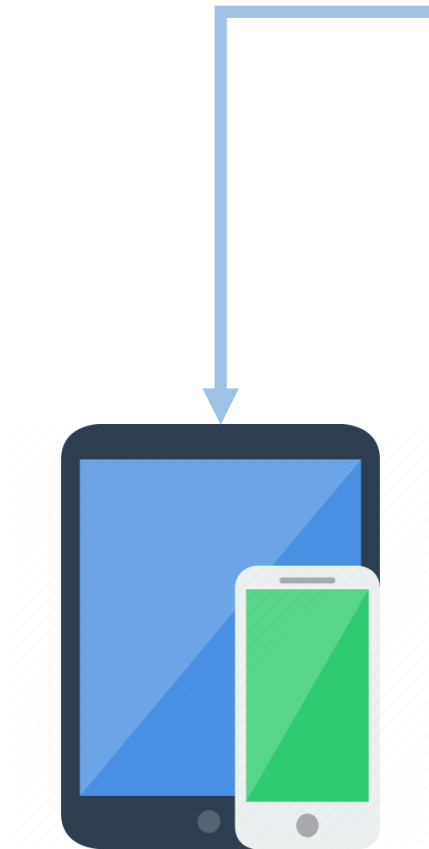
- More energy
- More self-confidence on the farmland

### He does not wish...

- Being a burden to his family
- Giving up to his passions for his health conditions



## SMART BEAR for Giovanni



Smartphone or tablet



Smart scale



Smartwatch



## The clinician's plan for Giovanni with SMART BEAR

- Planning a customized diet plan that can be consulted on the App
  - Tracking weight
  - Tracking diet
- 
- Tracking physical exercise and detect falls
  - Motivate to respect the diet and the physical activity plans





## Giovanni's day with SMART BEAR

He wakes up and  
weighs himself

7:30







## Giovanni's day with SMART BEAR

He selects his meals depending  
on the planned diet

7:30

11:30





## Giovanni's day with SMART BEAR



He inputs his meal in  
myDiet App taking a picture

7:30

11:30

12:30





## Giovanni's day with SMART BEAR

He performs a 30-minute walk as planned





## Giovanni's day with SMART BEAR



He receives his weekly report of his physical exercise activity

7:30

11:30

12:30

15:00

17:00





## Giovanni's day with SMART BEAR



Giovanni completed every activity planned for this week! He gains an award through the App

7:30

11:30

12:30

15:00

17:00

18:00





## Isotta – Blood pressure monitoring



**Isotta**

Age: 70

Occupation: Housewife

Location: Gorgonzola

She lives with: Lucia, daughter

Caregiver: -

Hobby: Playing cards with her friends

«Let's not worry with such negative thoughts, smile and life will smile back! Shall we play?»

### Descrizione

Isotta has been afflicted with **high blood pressure** and **diabetes**; being optimistic by nature and busy with many activities, she always has avoided taking these conditions seriously. During a doctor's appointment, the clinician finds that her blood pressure is so high as to be a health hazard. Isotta's lifestyle needs an immediate change, starting from a firmer control over her health status. After many attempts, her daughter Lucia persuades her to deal with this problem.

### Problems

- Hypertension
- Diabetes

### She wishes...

- Lesser medical examinations
- An active and independent monitoring of her health state

### She does not wish...

- To exclusively rely on technology
- Radical changes in her lifestyle



## SMART BEAR for Isotta



Smartphone or tablet



Smartwatch



Smart glucometer



Smart sphygmomanometer





## The doctor's plan for Isotta with SMART BEAR

- Tracking her blood glucose and blood pressure
- Tracking her heart rhythm
- Notifying Isotta and Lucia in case of parameters that the doctor values worth of more attention from their part
- Setting up an effective communication with the clinician by sharing the outcomes of blood and glucose measurements







## Isotta's day with SMART BEAR

She wakes up and measures her  
blood glucose

8:30





## Isotta's day with SMART BEAR



From work, Lucia consults Isotta's parameters

8:30

11:00





## Isotta's day with SMART BEAR



Reminder: she should measure her  
blood pressure

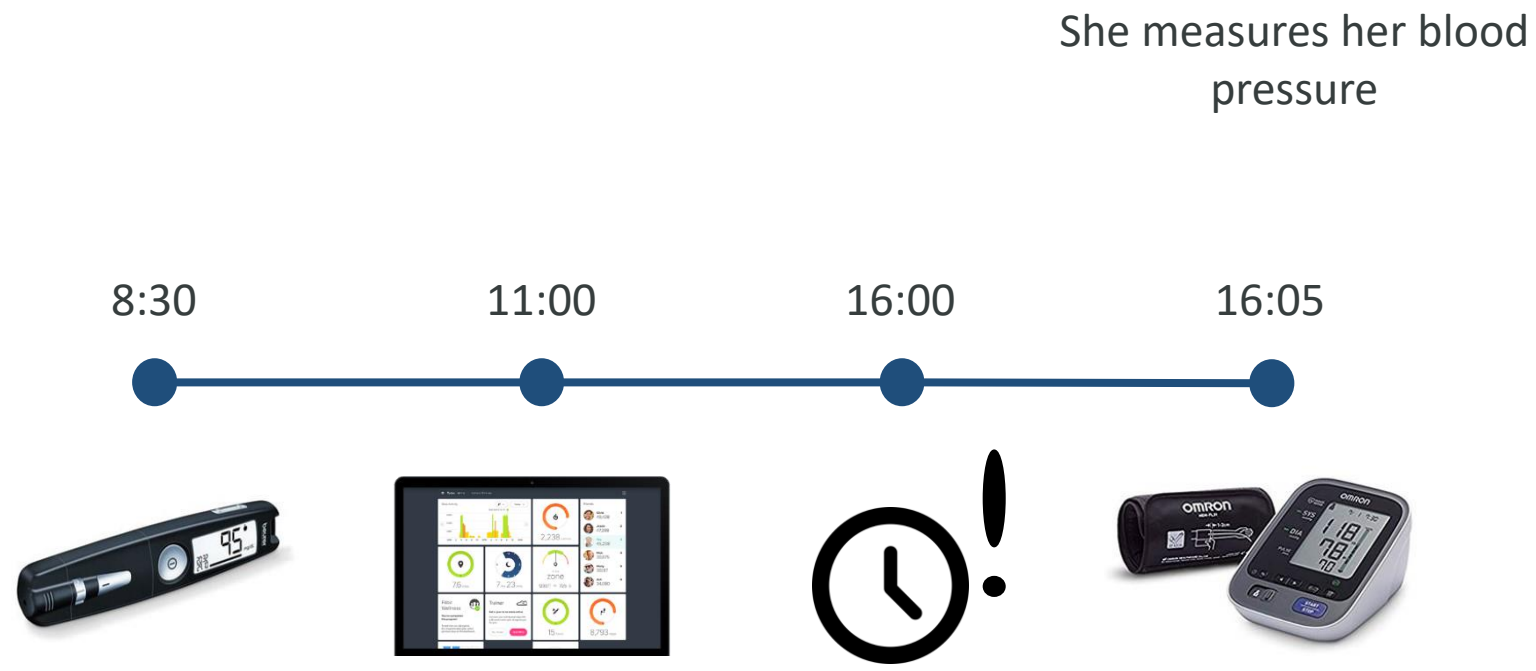
8:30

11:00

16:00



# Isotta's day with SMART BEAR



## Isotta's day with SMART BEAR



Isotta receives a notification on her smartphone

8:30

11:00

16:00

16:05

16:10



## Isotta's day with SMART BEAR



An urgent-looking notification appears on the smartphone screen!





## Federico – Mood and sleep quality



### Federico

Age: 78

Occupation: Retired

Location: Milano

He lives with: -

Caregivers: Gilda, sister

Hobby: Going fishing with his friend

«Nostalgia can make us miserable, but what would we be without good memories?»

### Description

Federico has been **feeling tired even when he just woken up** for some time now, and he feels weak all day. Gradually, **bad mood** becomes a constant during his days. The doctor prescribed him a therapy for his sleep disturbances but Federico **often forgets** taking his pills.

His sister Gilda, who sometimes pays him visits, has started noticing his bad mood some time ago, and proposed him another medical examination. Federico accepts, realizing that her quality of life has precipitated, lately.

### Problems

- Sleep disturbances
- Mood disorder
- Memory loss

### He wishes...

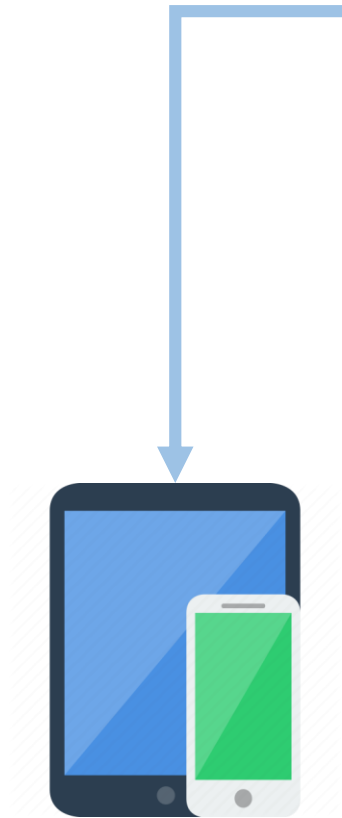
- To gain back his energies
- To sleep better at night
- To remember taking his pills for insomnia

### He does not wish...

- Other people to notice his condition
- Burdening his sister



## SMART BEAR for Federico



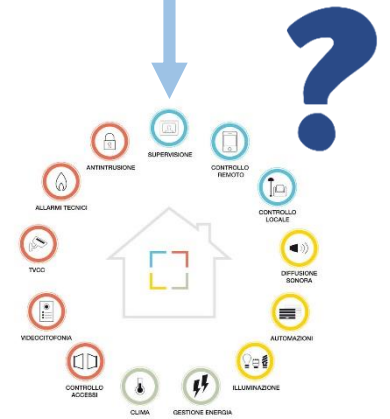
Smartphone o tablet



Smart pillbox



Smartwatch



Home environment sensors





## The doctor's plan for Federico with SMART BEAR

- Tracking compliance to pharmacological therapy and sending reminders to help
- Tracking quality of sleep



- 
- Monitoring home environmental conditions
  - Periodically, recording his mood through questionnaires and his memory capacity through serious games





## Federico's day with SMART BEAR

He wakes up and checks his quality of sleep

7:00





## Federico's day with SMART BEAR

Reminder: the smart pillbox reminds him to take his pills

7:00

13:30





## Federico's day with SMART BEAR



He checks and adjust home environmental conditions based on recommendations from the App

7:00

13:30

15:00





## Federico's day with SMART BEAR



He feels in a questionnaire for his mood and plays a serious games to test his memory

7:00



13:30



15:00



16:00





## Habits and socialization



**Lidia**

**Age:** 67

**Occupation:** Housewife

**Location:** Milano

**She lives with:** Franco, husband

**Caregivers:** her daughter

**Hobby:** Going to the theater and go out with her friends for tea

«Theatre makes me dream, it makes my fly high and sets me free»

### Description

Lidia is a lady of 68 years old, cheerful and a dreamer. She has been living with Franco for over 33 years, who has been diagnosed with Alzheimer's disease five years ago. Theatre has always been her passion, but it has been 4 months since the last time she went to a show. The last time she went out with her friends for tea, Lidia had two glasses of prosecco, her friends were surprised to notice. Her daughter noticed a change in Lidia's behavior (easily irritable, often in a bad mood, disinterested in what surrounds her). Finding 7 bottles of wine hidden in the balcony made her worry. After a long conversation with her daughter, Lidia accepts that it is time to take her alcohol abuse problem seriously and to go see a doctor.

### Problems

- Alcohol abuse
- Social and family isolation
- Changes in her behavior

### She wishes...

- To be less irritable with her husband and her daughter
- To have her social life back
- To success in reducing alcohol consumption

### She does not wish...

- To fail in taking care of Franco
- Burdening her daughter



## SMART BEAR for Lidia



Smartphone or tablet



Smartwatch



## The clinician's plan for Lidia with SMARTBEAR

- Planning a routine that Lidia commits to in order to regain healthy habits
- Psycho-educational interventions
- Sending reminders to help her with setting dates with her friends and family
- Keeping track of her participation to social activities
- Sending personalized suggestions to maintain a better behavior towards the others and herself







## Lidia's day with SMART BEAR



She sticks to the  
morning routine set  
by the clinician

8:00





## Lidia's day with SMART BEAR

Psycho-educational  
intervention

8:00

9:30





## Lidia's day with SMART BEAR



She receives the suggestions to go out with her friends later since it will be a sunny day

8:00

9:30

12:30





## Lidia's day with SMART BEAR

She meets her friends while she wears the smartwatch





# Hearing



**Andrea**

**Age:** 68

**Occupation:** Voluntary Alpin Rescue

**Location:** Touristic town on the Alps

**He lives with:** Laura, wife

**Caregivers:** -

**Hobby:** Chatting at the bar with his

friends

«Friends are the only treasure you really need»

## Description

Andrea's capacity to discriminate sounds has been reducing for the past ten years. Now, this problems has become unbearable: he cannot enjoy afternoons with his friends in a crowded bar because of the excessive background noise. Andrea lives this issue as a serious limitation, being a cheerful and extroverted person. For this reason, he decides to go to the audiologist, even if the closest one is many kilometers distant.

## Problems

- Presbycusis

## He wishes...

- To participate to social activities as before

## He does not wish...

- To visit the doctor too often



## SMART BEAR for Andrea





## The clinician's plan for Andrea with SMARTBEAR

- Booking remote appointments with the audiologist
- Remotely adjust the smart hearing aid's options
- Opening hearing training sessions through the smartphone or the tablet





## Andrea's day with SMART BEAR

He goes to the coffee shop with his friends and notices hearing disturbances

9:00

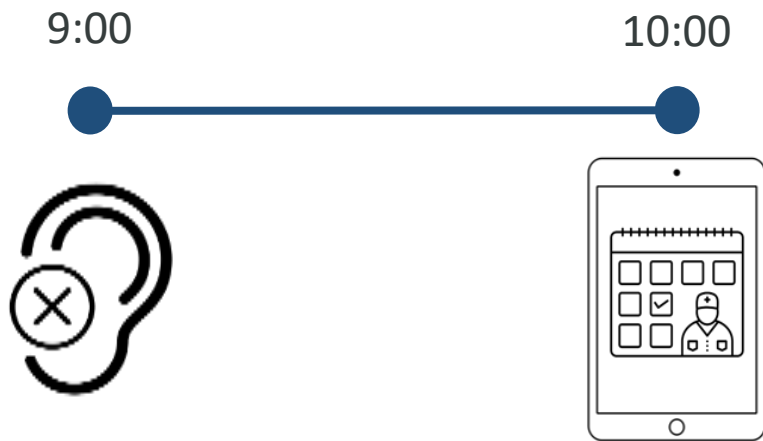






## Andrea's day with SMART BEAR

He books a remote appointment with the audiologist to open a fine-tuning session





## Andrea's day with SMART BEAR

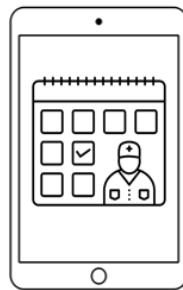


He goes to the bar to videocall the audiologist, who adjusts the hearing aid in a real life condition

9:00



10:00



16:00





## Andrea's day with SMART BEAR

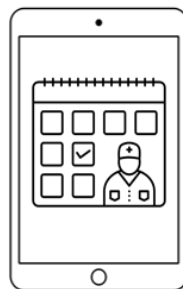


He gets back home and does one hour of hearing training

9:00



10:00



16:00



17:00





## Conclusions

- Have you changed your minds now that we have seen all the stories?
- Any questions or thoughts?



SMARTBEAR

THANK YOU



Bird & Bird



CITY UNIVERSITY  
LONDON



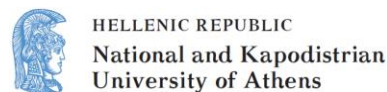
Atos



Hellenic Republic  
Region of Peloponnese



FONDAZIONE  
Centro San Raffaele



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