



Reference Uses Cases

For olders active & healthy ageing





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Reference Use Cases

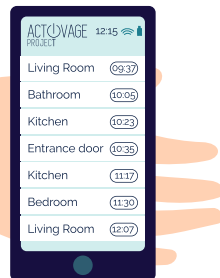
LIVING INDOORS & OUTDOORS WITH FREEDOM

Daily activity monitoring

It is crucial for the caregivers to know whether the people they look after are following their daily routines at their homes, as alterations in their usual routines might imply abnormal situations or incidents. This service thus focuses on the monitorization of the Activities of Daily Living (ADL) of the elders both for the caregivers and the assisted people. This will be done using different sensors to analyze the elder's surroundings and routines (presence of other people in the house, behavioral patterns, etc.)

- **Users:** Assisted people, formal and informal caregivers.
- **Stakeholders:** Social and wellbeing institutions, housekeeping service providers, authorities, developers, technology providers.

This service will improve the quality of life and peace of mind of both the assisted people and their caregivers, as it will improve and enhance the autonomy and self-management of the former. In addition, by analyzing the routine patterns of the assisted people, this service will provide insights about their health and wellbeing, (i.e. detection of early functional decline and performance, among others). Moreover, this service will contribute to decrease the costs associated with assisting the elders, as it will provide them a more efficient, effective and personalized management.



LIVING INDOORS & OUTDOORS WITH FREEDOM

Mobility monitoring and advice for active mobility

In line with the common lack of awareness of the surroundings of the assisted people, elders usually struggle with the means of mobility and transportation (bus, tube) in their own cities. This service will provide a monitorization on the mobility patterns of the elders, paying attention not only to the transportation itself (routes, lines, means) but also to their safety and comfort, analyzing their usual mobility patterns and detecting deviations from their behavior.

- **Users:** Assisted people, formal and informal caregivers.
- **Stakeholders:** Social and wellbeing institutions, housekeeping service providers, Public authorities and private financial bodies.

This service will considerably affect the assisted people's quality of life, given the increase in their mobility autonomy and overall independence. This not only relates to transportation itself, but also to the promotion of social life, as they will be able to be involved in different leisure activities outside their homes. From the side of the caregivers, the service will contribute to their peace of mind whenever the assisted people venture out of their homes. The analysis of their mobility patterns will help to ease this situation by keeping them informed at all times of what is going on with their elders.



LIVING INDOORS & OUTDOORS WITH FREEDOM

Exercise promotion

Physical and cognitive decline are reportedly related to the lack of physical activity, trait that characterizes the elderly people across Europe. This lack of activity may exacerbate and/or worsen already existing conditions, which is why this is a key aspect to target within the ACTIVAGE services. Thus, this service focuses on the improvement of the physical condition of the assisted people and to prevent situations such as falls or deterioration of health caused by diseases associated or derived from the lack of exercise and a sedentary lifestyle.

- **Users:** Assisted people, formal and informal caregivers,
- **Stakeholders:** Social and wellbeing institutions, homecare and housekeeping service providers, Retirement and nursing home services.

This service will allow the assisted people to improve their physical condition and adopt healthier lifestyles in an attractive and entertaining way, which will furtherly encourage its use. In addition, it will foster physical activity together with different people, contributing to avoid social isolation, to increase the feeling of belonging to a social group and to improve their overall quality of life. More active and empowered assisted people will translate into longer independent living, reason why both formal and informal caregivers will also benefit from this solution.



FEELING SAFE AT HOME

Safety, comfort and security at home

Elders can be sometimes unaware of their surroundings, even when they are at their own homes, Certain events caused by this might be dangerous and could potentially threaten the assisted people's wellbeing (i.e. leaving a fire on after cooking). As so, this service focuses on the management of sensors and actuators that increase not only safety but also the comfort and security of the assisted people.

- **Users:** Assisted people
- **Stakeholders:** Informal caregivers, developers, Technology providers, private financial bodies, nursing homes, retirement residences, housekeeping services.

This service significantly increases the peace of mind of the caregivers and the assisted people, as the IoT systems will "look after" the elders' wellbeing and safety. In addition, this will promote longer independence and autonomy on their homes. This service will be tuned to the user's needs and will act accordingly, decreasing the risk of incidents. Finally, this service will contribute to the decrease in costs, as it will promote a more efficient management and control of the assisted people surroundings.



FEELING SAFE AT HOME

Emergency trigger

Whenever an unusual or critical situation takes place regarding assisted people (which in a wide variety of cases are characterized by physical frailty and/or cognitive decline), they need a way to communicate their state in case of emergency. As so, this service takes advantage of the detection of mono and multidimensional patterns and specific events combinations that might require external immediate attention. The service is provided according to every ethical and legal aspect considered if need-be.

- **Users:** Assisted people, healthcare and emergency services, overarching authority-government.
- **Stakeholders:** Informal caregivers,

The use of an emergency trigger results in an improvement in the quality of life of both, the assisted people and the caregivers, as they are equipped to react against unforeseen events. In addition, it allows for a faster and more efficient response from the side of the emergency services.



FEELING SAFE AT HOME

Notification of abnormal situation

Deviations from the assisted people's usual behavior could signify that an accident has taken place. Changes in their eating or drinking habits or in their movement patterns could imply further consequences, such as early stages of depression, dementia or fragility. This service thus focuses on analyzing the routine behavioral patterns of the assisted people and alert the caregivers in case an unusual situation occurs.

- **Users:** Assisted people, formal and informal caregivers.
- **Stakeholders:** Social and wellbeing institutions, housekeeping services.

This service will improve the peace of mind of the assisted people and their caregivers, while at the same time increasing the quality of life of the former. Being able to rely on this

service for the wellbeing of the elders and acknowledging that the caregivers will be notified anytime an abnormal situation occurs, the service will improve the efficiency and efficacy of the management of the assisted people. In addition, this service will be tuned to the necessities and patterns of the elders, providing a detailed and accurate view of what is happening in the assisted people's homes. Integrated care is a key and crucial point regarding the wellbeing of the elders.



TAKING CARE OF DISEASES

Integrated care

It is necessary not only to pay attention to the existing conditions that the assisted people may already have (chronic diseases, comorbidities, etc) but also to all the casuistry related to their management. This service will ensure a close collaboration among the different actors considered, such as health delivery and homecare services among others.

- **Users:** Assisted people, formal and informal caregivers.
- **Stakeholders:** Social and wellbeing institutions, healthcare providers, public and private authorities (legislative and public welfare)

This service will provide a better and more coordinated response between all the actors involved in the assisted people's wellbeing, which will be translated in a more efficient management and decrease in the costs of the resources. Special emphasis will be done on prevention of the appearance of different health issues, improving the quality of life of the assisted people.



TAKING CARE OF DISEASES

Health parameter monitoring

Slight modifications on various health parameters of the assisted people might be indicators for their caregivers to take appropriate action. As so, and closely related to patient monitorization, this service focuses on the observation and follow-up of said parameters (i.e. blood pressure, heart rate and weight among others). Whenever abnormalities in the normal values of the elders occur, the actors involved in the wellbeing of the assisted people will be alerted for them to act. This service is offered with the correspondent requirements regarding ethics and safety.

- **Users:** Assisted people, formal and informal caregivers.
- **Stakeholders:** Social and wellbeing institutions, Housekeeping, nursing and retirement services, Healthcare providers, public and private authorities, developers, technology providers.

This service will improve the assisted people and the caregiver's quality of life, as the latter will be able to follow up their elders and their health, providing more peace of mind. The detection of abnormalities in the health parameters of the assisted people will also translate in a cost decrease and better management of the resources destined towards assistance in a more efficient way.



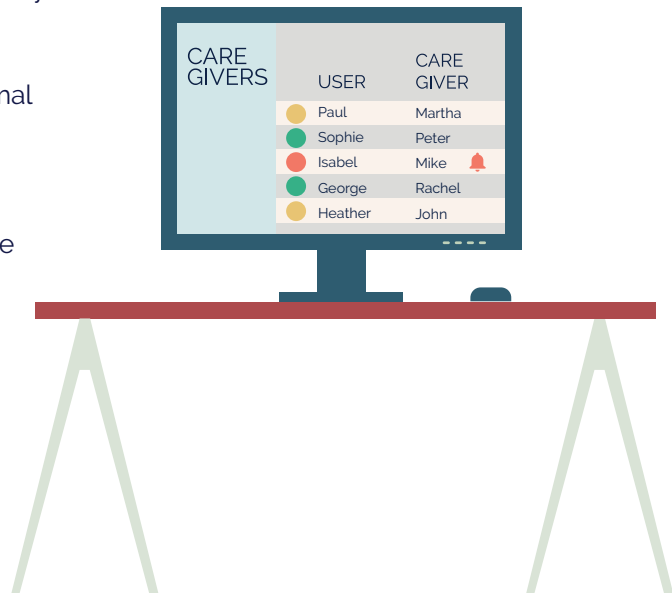
TAKING CARE OF DISEASES

Support for caregivers

Key actors in the wellbeing of the assisted people are their caregivers, as they are ultimately the ones that answer and act whenever an incident occur to the former. As so, this service is destined towards the support of the caregivers, to enhance their communication between their elders and other care providers. In addition, caregivers will be able to receive aggregated information about their assisted people so they can be completely informed about what is happening.

- **Users:** Assisted people, formal and informal caregivers
- **Stakeholders:** Retirement, nursing and housekeeping services, public and private homecare providers.

This service will improve the caregiver's management of the assisted people in a more efficient way. By getting a complete picture of what is happening to the people they are looking after, they will be able to make more informed decisions and act accordingly, thus improving their peace of mind.



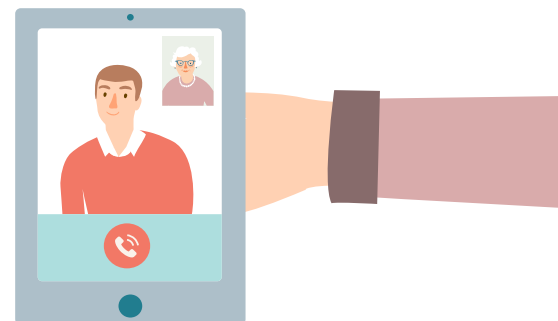
PREVENTING MENTAL DECLINE

Prevention of social isolation

It is not uncommon that elders across Europe find themselves living alone or accompanied only in specific occasions during the day. This service thus focuses on preventing this isolation in their environments and the lack of social interaction. It furtherly encourages social participation, monitoring the social activity of the assisted people and its communications with different people. This is done taking advantage of a simple IoT system which enables the communication between the assisted people and the caregivers. In addition, the system also focuses on the proposition of different leisure activities to encourage outdoors activities, such as shopping, museum cities and theatres among others.

- **Users:** Assisted people, formal and informal caregivers.
- **Stakeholders:** Social and wellbeing institutions, housekeeping services, public and private authorities and institutions.

This service will improve the assisted people quality of life in various ways. Firstly, they will be able to communicate with their caregivers and to stay socially active via different activities. This proposition of events will encourage the assisted people to get out from their comfort zone and foster relationships with different groups, increasing their motivation and their feeling of belonging. From the side of the caregivers, they will be able to maintain voice contact with the people they look after which will enable them to stay more informed about their elders and detect critical or unusual situations earlier (early stages of depression, early cognitive decay, etc)



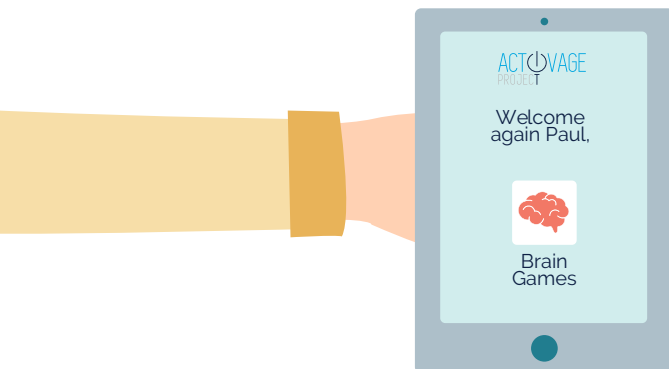
PREVENTING MENTAL DECLINE

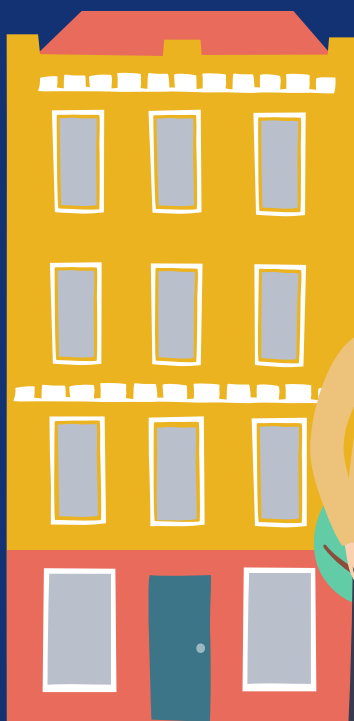
Cognitive stimulation

Progressive cognitive impairment and decline is a common trait found on the elders across the globe. This is associated to the loss of independence as their condition worsens along time, as it can also be related to accidental events such as falls. This service aims at delaying that situation as possible by promoting the awareness and comprehension of the assisted people's surroundings using planned stimuli and stimulating them through various games to foster continuous mental activity.

- **Users:** Assisted people, formal and informal caregivers
- **Stakeholders:** Social and wellbeing institutions, housekeeping services.

This service will contribute to delaying the appearance of cognitive decay and extending the time of self-independence of the assisted people by encouraging enjoyable mental activeness. Thus, this will result in and improvement in the quality of life of the assisted people and their caregivers, as both will benefit from the extended autonomy of the former.





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