SAfety of elderly people and Vicinity Ensuring – SAVE

AAL

PROGRAMME

Services Description – D2.5

SAVE

SAfety of elderly people and Vicinity Ensuring

AAL Programme

Project - SAfety of elderly people and Vicinity Ensuring - "SAVE"

Deliverable: D.2.5 Services Description

Version: 1.0

Main editor: ISS

Contributing partners: VS, LabIdee, INRCA, UnitBv

Table of Contents

1. The eHealth Monitoring Service

1.1 eHealth service description

The eHealth Monitoring Service is able to assess biometric information in terms of measuring people's unique physical characteristics. The biometric info is to be used as an add-on to the existent data acquired by caregivers or volunteers for gaining a more comprehensive image on their supervised elderly people.

1.2 eHealth device description

The eHealth Monitoring System has the scope to acquire biometric sensors data by different wireless and wired eHealth sensors, to automatically collect data on-site and transmit the data via Wi-Fi to a router modem in the area of a LAN (Local Area Network) and further via Internet to the cloud server of the project.

The eHealth Monitoring system is using wireless and wired interfaces for sensor data acquisition (in current version: temperature, oxygen saturation, blood pressure, spirometry) together with a cloud-based platform and a TFT display for both remote and on-site data monitoring.

The eHealth Monitoring System is not considered a medical device, nor intended for medical diagnosis, cure, mitigation, treatment, advice or prevention of disease.

1.3 eHealth operating steps:

1.   Connect to a wireless network with the following access data:
SSID: *issEhealth*
Password: *1q2w3e4r*

2.   Press the ON button to turn on the system.

3.   In order to monitor the oxygen saturation and pulse, place the pulsoximeter sensor on your finger and press the ON button to start the measurements.

4.   In order to monitor the body temperature, place the temperature sensor on your skin (for example in the armpit area).

5.   In order to monitor the blood pressure, place the blood pressure sensor on your right arm and press the ON button. A blue led will start to flash. After it stops flashing and remains constant on the blue color, the measurement will begin.

6.   In order to measure the amount of air which a subject can inhale or exhale voluntarily use the spirometer sensor. Turn on the sensor by pressing the orange button. Place the mouthpieces (individually packaged) into the spirometer tube. Put your mouth on the mouthpieces and inhale or exhale. The measurement will be displayed on the sensor screen; then connect the sensor to the cable in the drawer where it is stored so that the acquired data can be transmitted to the cloud.

7.   The acquired data can be accessed from the cloud at:
Link: http://86.122.59.60:4200/admincentre
 User: *admin*
Password: *admin*

8.   In order to charge the station, turn it on and connect it to an outlet through the charging port located on the lower back side using the included USB cable and power supply.

Annex: The eHealth Monitoring System, source: ISS Partner

Blood pressure monitor
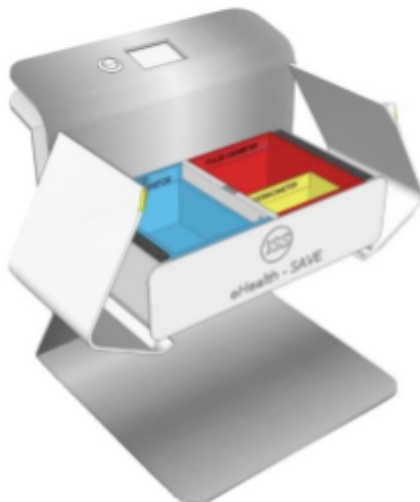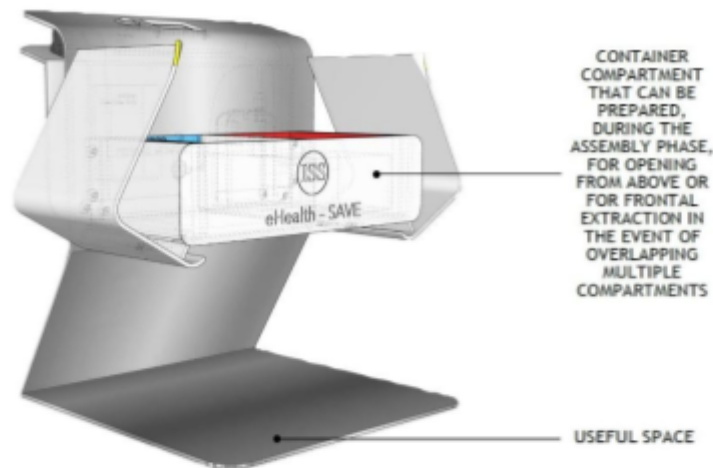

PulseOximeter sensor

Temperature sensor

Spirometer and tube

Annex: The eHealth Monitoring System new CAD design, source: Labidee Partner

2. The Well-being assessment service

2.1 Well-being service description

The well-being service consists in assessing intraindividual variability across reaction time (RT) tasks performance and the corresponding galvanic skin response (GSR). Intraindividual variability, according to literature, is considered a risk factor predictive of

CONTAINER COMPARTMENT THAT CAN BE PREPARED, DURING THE ASSEMBLY PHASE, FOR OPENING FROM ABOVE OR FOR FRONTAL EXTRACTION IN THE EVENT OF OVERLAPPING MULTIPLE COMPARTMENTS

USEFUL SPACE

successful ageing, implicitly well-being, and it is significant in assessing individuals whose disorders are mild.

2.2 Well-being device description

The Well-being system is using wireless and built-in sensor data acquisition, together with a cloud-based platform for both remote and on-site data monitoring and consists of two major components, as Choice Reaction Time (CRT) and Galvanic Skin Response (GSR) system components.

Visual choice reaction time (CRT) tasks performance has been widely analysed to measure age-related declines in processing speed.

A GSR (Galvanic Skin Response) smart ring is used for measuring electrodermal activity accurately in a convenient, wearable form able to provide data in real time.

The elder wears the stress assessment device, a ring in our case, that analyses the evolution of his stress level. The elder can be advised to stop working, relax and/or breathe in order to diminish stress level and thus, to enhance its well-being. Stress Assessment Services evaluate specific changes of stress level and/or stress phase (excitement, stress and recovery) and usually store the data in a cloud for further offline assessments.

The Well-being system is not considered a medical device, nor intended for medical diagnosis, cure, mitigation, treatment, advice or prevention of disease.

2.3 Well-being operating steps:

1. Connect to a wireless network with the following access data:
   SSID: *issEhealth*
   Password: *1q2w3e4r*
2. Place the smart ring (GSR- **G**alvanic **S**kin **R**esponse - module) on the finger. A green indicator LED should blink once when inserting to finger: device is now working and recording and the battery is charged. When the device is removed from the finger or when the contact with the skin is lost, the green indicator LED blinks twice. When the battery is low, the red indicator LED starts to blink periodically.
3. Start the CRT (**C**hoice **R**eaction **T**ime) module by pressing for 3 second the right button. The start of the measurement is signaled by the flashing of the green color LED.
4. The end of the session measurement is signaled by the flashing of the **BLUE** color LED.
5. During the measurement session, the subject must press the left button (see Figure 4) if the LED is **RED** or **GREEN**, and the right button if the LED is **BLUE**. The session duration is 2 minutes.
   If the subject presses the wrong button, the system will wait for the correct button to be pressed. If during the CRT measurement there is no reaction from the subject for two minutes, the measurement is invalidated and the system restarts.
6. The acquired data can be accessed from the cloud: Link: http://86.122.59.60:4200/admincentre , User: **admin**, Password: **admin**

Annex: The WellBeing Monitoring System

Left button

Trichromatic
RGB *(red, green and blue) LED*

Right button

GSR component (smart ring)

- **CRT** *component;*
- *communication system component;*
- *processing system component;*
- *power supply component.*