D4.4 Use cases configurator - Demonstrator

Deliverable D4.4		
Authors and institution	UNIVPM: Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel	
Date	M26	
Dissemination level		
PU	Public, fully open, e.g. web	PU
CO	Confidential, restricted under conditions set out in Model Grant Agreement	
CI	Classified, information as referred to in Commission Decision 2001/844/EC	

Document change history			
Date	Version	Authors	Description
09.01.2023	V1.0	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	First Draft of Content and Structure
12.01.2023	V1.1	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	Chapter 1
17.01.2023	V1.2	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	Chapter 2
20.01.2023	V1.3	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	Chapter 3
24.01.2023	V1.4	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	Chapter 4
26.01.2023	V1.5	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	Chapter 5, Annexes 1, 2, 3
01.02.2023	V1.6	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	Chapters 6, Annexes 4 and 5, Executive Summary
03.02.2023	V1.7	Keiko Homma (AIST)	Review
08.02.2023	V1.8	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	Update of the document, Chapter 7
17.02.2023	V1.9	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	Update of Annexes 3 and 5
24.02.2023	V2.0	Riccardo Naccarelli, Sara Casaccia, Gian Marco Revel (UNIVPM)	Last Updates in the whole document
26.02.2023	V2.1	Rainer Wieching (USI)	Finalization of the document

Disclaimer

E-VITA – European-Japanese Virtual Coach for Smart Ageing

E-VITA (EU PROJECT NUMBER 101016453)

WP4 – Standards, Norms & Interoperability

D4.4 – Use cases configurator - Demonstrator

Editors: Riccardo Naccarelli (UNIVPM), Sara Casaccia (UNIVPM), Gian Marco Revel (UNIVPM)

Work-package leader: UNIVPM, JQA

Copyright notice

Executive Summary

D4.4 *Use cases configurator – Demonstrator* describes the Use Cases Configurator developed within WP4 by T4.2 – Use cases configurator.

The Use Cases Configurator is a software component of the e-VITA platform which has the aim of identifying the optimal configuration of the sensor network and coaching devices based on user's needs and requirements.

The Use Cases Configurator is designed to be used by the technical installers, pilot implementers, formal caregivers, project partners, etc., in the design phase of the e-VITA system.

The inputs for the configurator are the needs and requirements of the user arising from use cases defined by WP2 and WP3, personal information, and information about the living environment and sensors acceptance. For the development of the first prototype of Use Cases Configurator (described in D4.3 *Use cases configurator – Prototype*), we focused on the health-related use case "Let's Do Physical Activity!". This prototype version has been updated following a redesign phase after analysing feedback from wave 1. This document describes the updates made to the prototype version of the configurator that led to the release of the tool demonstrator at M26.

Table of Contents

Lists of Figures and Tables

Acronyms and Abbreviations

Acronym/Abbreviation	Explanation
ADL	Activities of Daily Living
API	Application Programming Interface
CO_2	Carbon Dioxide
D	Deliverable
GUI	Graphical User Interface
HR	Heart Rate
HRV	Heart Rate Variability
IEQ	Indoor Environmental Quality
INRCA	Istituto Nazionale di Ricovero e Cura per Anziani
M	Month
ML	Machine Learning
SpO_2	Blood Oxygen Saturation
T	Task
TOHOKU	Tohoku University
UCC	Use Cases Configurator
UNIVPM	Università Politecnica delle Marche
USI	University of Siegen
WP	Work Package

1. Introduction

This document is the updated version of D4.3 *Use cases configurator – Prototype*, which served as the basis for updating the functionalities of the prototype of the Use Cases Configurator (UCC) to release a demonstrator at M26.

The deliverable describes the updates made to the configurator prototype trough a redesign phase based on feedback from users of the wave 1 experiments and provides a user manual in the different languages of the countries involved in the project.

The deliverable is organized into 7 Chapters, including Introduction, Conclusion, Future Updates and Exploitation Plan. Chapter 2 explains the role of the UCC in e-VITA and provides a brief description of the steps taken towards its prototype version. Chapter 3 presents the feedback from wave 1 considered in the redesign phase outlined in Chapter 4 below. Chapter 5 describes the UCC demonstrator's functionalities, versions, interfaces, content and technologies considered.

2. Use Cases Configurator and its role in e-VITA

The Use Cases Configurator (UCC) is a software component of the "Visualization and end-user applications" layer of the e-VITA platform defined in D7.4 *e-VITA Platform Architecture – Final Version*. This layer provides the visualization capabilities for the overall data of e-VITA platform and end-user applications to enable them to use the platform services. In this context, the role of the UCC is to offer to technical installers, pilot implementers, formal caregivers, project partners, etc. an interface that allows to translate the preferences, needs and goals that the user expects to achieve, in the optimal configuration of the sensor network and coaching devices to be installed.

As described in D4.3 *Use cases configurator – Prototype*, the need to identify the sensor network and coaching devices according to the user's needs and requirements lead to the development of the UCC (Figure 1). Focusing on creating a smart living environment suitable for the older adults, the UCC considers not only user preferences, but also the minimisation of costs and the number of sensors without losing measurement accuracy. In this way, users have a service tailored to their needs and preferences. Optimizing the sensor network avoids negative feedback from e-VITA users in relation to the use of multiple sensors and allows for a low implementation cost.

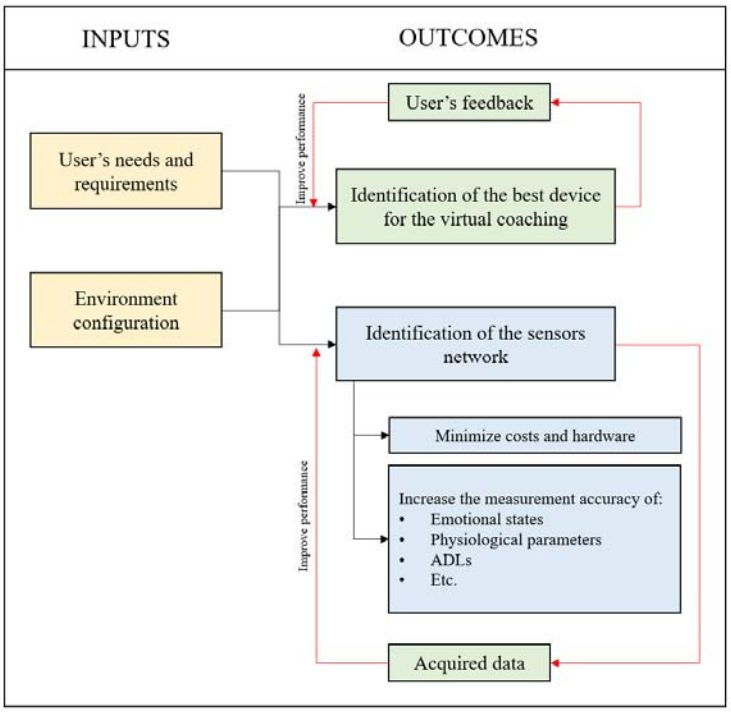


Figure 1. UCC conceptual diagram from D4.3 Use cases configurator – Prototype.

Developed in Python language, the UCC provides a graphical interface to obtain information on which sensors and coaching devices will constitute the e-VITA system from the information, preferences and goals selected by the user. Figure 2 provides an overview of the workflow that allows the configurator to provide its output. The inputs for the configurator are needs and requirements of the older adults arising from use cases defined by WP2 and WP3, information about the living environment (rooms in the house), sensors acceptance (wearables, non-invasive stationary sensors) and personal information (gender, age, religion, etc.). These data are processed by the configurator in such a way as to provide the optimal configuration of the sensor network for the specific use case, following the optimization results presented in D4.6 *Sensing technologies to monitor behaviors, emotions and physiological parameters – Final Version*, as well as identify the best device for virtual coaching.

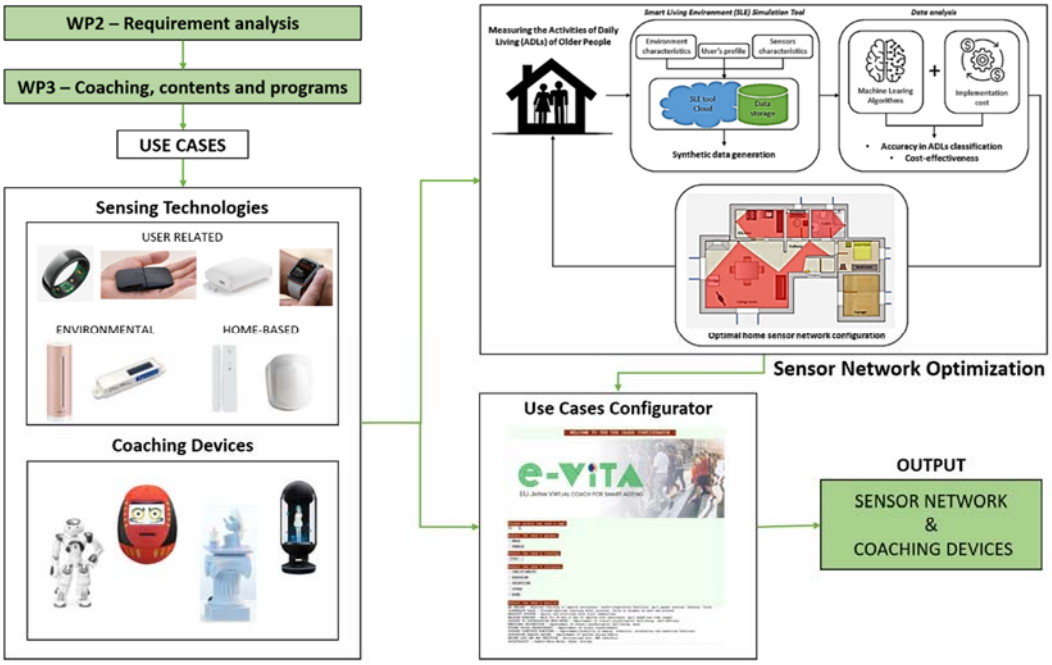


Figure 2. UCC workflow overview.

Sensing technologies and coaching devices are thus classified based on inputs, to provide a complete and integrated sensor network capable of identifying user behaviours, physiological states and emotions and identify a coaching device accepted by the end-user.
As the configurator is a tool designed to be used by the installer of the network of sensors and coaching devices within the home of the older user or in care organizations, the UCC component was integrated within the e-VITA platform by exposing its functionality through a REST API easily accessible directly from the e-VITA Dashboard.

2.1 Prototype

The first prototype version of the UCC has been released at M13 and is described in D4.3. The development of the configurator tool took several steps:

1. Initially, an in-depth analysis of the results of WP2 and WP3 was conducted to understand the needs and goals of older users. The use case "Let's do physical activity!" was chosen for the development and description of the UCC prototype, given the completeness of the description obtained in D3.2 *Report on indicators and practices facilitating the maintenance of good health*.
2. The inputs for the UCC prototype were identified based on the preferences and information of older users which emerged from the workshop between the technical partners (WP4,5,7) and the content partners (WP3,6,8), and based on the needs and goals of older users which emerged from the selected use case.
3. The characteristics and capabilities of the sensors and coaching devices of the e-VITA platform were analyzed to match the inputs to sensing technologies and coaching devices.
4. The UCC prototype was developed in Python language as a Graphical User Interface (GUI) through which various options regarding preferences, end-user goals and home environment information could be selected.
5. An executable program of the UCC prototype and a user guide were created.
6. The UCC prototype was tested during wave 1 by the e-VITA platform installers and project partners to obtain feedback (collected through a dedicated questionnaire) on its use and to get opinions on possible modifications.

3. Wave 1 Feedback

The UCC prototype has been tested during the pilot study (wave 1) that took place between February and July 2022 in several European countries (France, Italy, Germany) and in Japan. We provided users (pilot implementer, technical installers, caregivers) with a questionnaire (see Annex 4) and a user manual (see Annex 5) translated into several languages. Table 1 shows the feedback obtained by the users in the test centres of Italy, Germany, and Japan.

Thus, the redesign phase of the configurator has been carried out starting from feedback emerging from the wave 1 experimentation.

Table 1. Feedback on UCC from users (pilot implementer, technical installer) during wave 1 collected via questionnaire.

Test centres	Use of the configurator evaluation (0-5)	Interface	Encountered any problems?	Opinions/ Suggestions
Italy	5	Extremely friendly	No	A hobby room could be added
Germany	4	Extremely friendly	No	The cost of installation could be shown
Japan	4	Extremely friendly	No	None

The technical installers and pilot implementers, following the results presented in the table, found the use of the configurator really good, with an extremely friendly interface, and encountered no problems when using it. The suggestions received were implemented in the final version of the UCC and concerned the addition of a room to consider activities performed as hobbies by the end-user and showing the cost of different configurations of the proposed sensor network.

Table 2 shows some of the end-users' information acquired through the UCC during wave 1. In addition to the number of end-users per test centre and general information (mean age, gender, living situation), preferences emerged regarding the use of wearable and static sensors, and the preference of the type of supporting device are reported.

Table 2. End-user information and preferences acquired by the UCC during wave 1.

Test centres	Number of end-users	Age (mean)	Gender		Lives alone?		Wearable acceptance		Support device preference		Non-invasive stationary sensors acceptance	
			Male	*Female*	*Yes*	*No*	*Yes*	*No*	*Smartphone*	*Tablet*	*Yes*	*No*
Italy *(INRCA – Ancona)*	6	67.6	4	2	1	5	4	2	6	0	5	1
Germany (*USI – Siegen*)	3	72.3	2	1	1	2	3	0	3	0	3	0
Japan *(TOHOKU – Sendai)*	3	69	1	2	2	1	2	1	1	2	3	0

As can be seen, most older adults accept the installation of non-invasive static sensors in the home more easily than wearables (e.g. in Italy one third of users do not want a wearable). The preferred support device for the European users of the test (Italians and Germans) seems to be the smartphone, while in Japan the tablet is more popular. Finally, we note that, especially in Italy, older adults live in multi-residential contexts (wife and husband), information to be taken into account when analysing and processing the data acquired by the environmental and movement sensors above all.

4. Redesign Phase

The redesign phase has been conducted starting from users' feedback emerging from the wave 1 experimentation and it introduced the following updates:

1. Two versions of the UCC have been developed for the final release: one dedicated to use in Japan (in Japanese) and one dedicated to use in Europe (in English). In addition, the user manual was translated into several European languages (Italian, French, Spanish, German, Dutch) and in Japanese.
2. New user goals have been integrated.
   The UCC prototype considered the following users' goals related to the Health Coaching domain:
   - BE TRAINED - Physical training to improve resistance, cardio-respiratory functions, gait speed, posture, balance, force.
   - COUNTERACT FALLS - Focused physical training after injuries, falls or surgery on gait and posture.
   - MOBILITY OUTSIDE - Sports and activities with local communities.
   - WALKING EVERYDAY - Walk for 30 min at day to improve your resistance, gait speed and step length.

   The UCC demonstrator improved the prototype by considering the following goals:
   - MONITORING - Monitoring the home environment and user behaviour.
   - PHYSICAL TRAINING AND FALL PREVENTION - Physical training to improve resistance, posture, balance and muscle strength.
   - MOBILITY OUTSIDE - Sports and activities with local communities.
   - WALKING EVERYDAY - Walk for 30 min at day to improve your resistance, gait speed and step length.
   - SUPPORT TO PSYCHOLOGICAL WELL-BEING - Improvement of overall psychological well-being, self-efficacy.
   - EMOTIONAL RECOGNITION - Improvement of overall psychological well-being, mood.
   - FOSTER SOCIAL RELATIONSHIP - Improvement of social connectedness.
   - SUPPORT COGNITIVE FUNCTIONS - Improvement/stability of memory, attention, orientation and executive functions.
   - SUPPORTING HEALTHY EATING - Improvement of healthy eating habits.
   - WEIGHT LOSS AND BMI REDUCTION - Personalized diet, BMI reduction.
   - SPIRITUALITY - Comfort/Wise Words, Tales, Stories.
3. The UCC included the economic aspect by considering the costs of the different technical configurations of the e-VITA platform to be installed.
4. A hobby room has been added to take into account the end-user's leisure activities, but only in the European version of the UCC, since the different composition of Japanese (smaller) houses sees hobbies performed in the other rooms, whereas in Europe you can find houses with dedicated hobby rooms.
5. In providing the output, the UCC considered the results obtained in the study on the optimization of the home sensor network configuration carried out by UNIVPM in T4.3 and described in D4.6 *Sensing technologies to monitor behaviors, emotions and physiological parameters – Final Version*.
6. The graphical interface was revised and modified to be even clearer and more user-friendly, and the output section dedicated to installation tips was finalized.

The final version (demonstrator) of the UCC was integrated into the e-VITA platform and released at M26.

Table 3 compares the features and functionalities of the prototype version delivered at M13 and those of the demonstrator delivered at M26.

Table 3. Comparison of UCC versions.

	Prototype (M13)	Demonstrator (M26)
Language	English	English Japanese
Use cases domains	Health Coaching	Health Coaching Daily Activities Social Connection
User goals	Be trained Counteract falls Mobility outside Walking everyday	Monitoring Physical training and fall prevention Mobility outside Walking everyday Support to psychological well-being Emotional recognition Foster social relationship Support cognitive functions Supporting healthy eating Weight loss and BMI reduction Spirituality
Sensors	Delta Dore DMB TYXAL+ Delta Dore DO TYXAL+ NETATMO Smart Indoor Air Quality Monitor NEU XB-01 Smartwatch OURA Ring	Delta Dore DMB TYXAL+ Delta Dore DO TYXAL+ NETATMO Smart Indoor Air Quality Monitor EnOcean ETB-RHT EnOcean ETC-PIR EnOcean ETB-OCS NEU XB-01 Huawei Band 7 OURA Ring uSkin pillow
Coaches	NAO Gatebox DarumaTO SanTO	NAO Gatebox DarumaTO CelesTE Google smart speaker
Functionalities	Installation tips	Installation tips Implementation costs of different setups

The language used for the prototype version is English, while for the final release of the UCC two distinct versions have been provided: a Japanese one for the Japanese users, and an English one for the European users. The two versions differ not only in language, but also in the sensors that make up the sensor network, as will be described in Chapter 5.

5. Demonstrator

This chapter describes the UCC demonstrator, in particular the technologies considered, the functionalities, the different versions developed, the interfaces, and the contents.

5.1 e-VITA Platform: Sensing Technologies and Coaching Devices

The sensors and coaching devices that make up the e-VITA platform are shown in Table 4. The sensing technologies and coaching devices are described in detail in D4.6 *Sensing technologies to monitor behaviors, emotions and physiological parameters – Final Version* and D4.8 *Coaching devices for the different use cases – Final Version*, respectively. The UCC selects one or more sensors and coaching devices from those identified in Table 1 based on the data to be acquired and coaching services to be provided in relation to the use case and inputs. Furthermore, due to the lack of some sensors on the Japanese market, these were replaced with equivalent sensors. For measuring environmental parameters, the EnOcean ETB-RHT was identified as the Japanese substitute of the Netatmo Smart Indoor Air Quality Monitor used in Europe, while for monitoring the home environment and user behaviour, the EnOcean ETC-PIR and ETB-OCS sensors were identified as the Japanese alternatives of the Delta Dore DMB TYXAL+ and DO TYXAL+ sensors used in Europe.

Table 4. Description of the sensors and coaching devices of the e-VITA platform.

Name	*Type*	*Description*	*Main functionalities*
NETATMO Smart Indoor Air Quality Monitor 	IoT Device/Sensor	Device for measuring environmental parameters. → *for European use only*	It measures temperature, humidity, atmospheric pressure, noise, CO_2 level of the environment. It connects to a Wi-Fi network allowing measured data to be stored and visualized.
EnOcean ETB-RHT 	IoT Device/Sensor	Device for measuring environmental parameters. → *for Japanese use only*	It measures temperature and humidity of the environment.
DELTA DORE DMB TYXAL+ 	IoT Device/Sensor	Device for monitoring the home environment and the user behaviour. → *for European use only*	Smart motion sensor that provides ON/OFF state upon detection of user motion. The sensor can be used with a gateway connected to any dedicated platform.
DELTA DORE DO TYXAL+	IoT Device/Sensor	Device for monitoring the home environment and the user behaviour. → *for European use only*	Smart sensor providing ON/OFF state upon detection of door opening/closing. The sensor can be used with a gateway connected to any dedicated platform.

EnOcean ETC-PIR 	IoT Device/Sensor	Device for monitoring the home environment and the user behaviour. → *for Japanese use only*	Smart motion sensor that provides ON/OFF state upon detection of user motion. The sensor can be used with a gateway connected to any dedicated platform.
EnOcean ETB-OCS 	IoT Device/Sensor	Device for monitoring the home environment and the user behaviour. → *for Japanese use only*	Smart sensor providing ON/OFF state upon detection of door opening/closing. The sensor can be used with a gateway connected to any dedicated platform.
OURA Ring 	IoT Device/Sensor	Smart ring device to track sleep patterns and physiological parameters of the user.	Parameters monitored during sleep: Resting HR, HRV, Respiratory rate, Sleep timing, duration, and quality. Parameters monitored during daytime: activity levels, calories, steps, inactivity time, HR, HRV. Since there is no screen on the ring, the collected data can be accessed on the mobile app (iOS or Android).
HUAWEI Band 7 	IoT Device/Sensor	Wristband that tracks physiological parameters of the user.	Parameters monitored: HR, HRV, SpO2, activity level, step, calories, sleep duration, sleep quality, etc.
NEU XB-01 	IoT Device/Sensor	Compact device that measures brain activity of the user while worn on the forehead.	Brain activity is measured using NIRS technology and the brain's rate of blood flow change is measured using weak near-infrared light. Data is transferred via Bluetooth in real-time to any smartphone or tablet.
uSkin pillow 	IoT Device/Sensor	Smart pillow.	The smart pillow is used to monitor the sleep of the older users by means of built-in force and temperature sensors.

NAO robot 	Coaching device/Robot	Softbank NAO 5 and NAO 6 humanoid interactive mobile robot.	Robot platform that allows multimodal natural language interaction and robot autonomous movement.
CelesTE 	Coaching device/Robot	Prayer companion designed for Christian Catholic users.	It tells the story of today's saint, reads the Bible, answers by citing a quote, a verse of the Bible, a prayer, and it prays together in turns. The communication is based on speech, movement, touch, and lights.
DarumaTO 	Coaching device/Robot	Social companion robot designed for Japanese and Chinese users.	It provides printed reminders and interacts with the user via speech and touch sensing.
Gatebox 	Coaching device/Hologram	Hologram like device that projects characters with which the user can interact.	Internal sensors such as a camera and a microphone allow the user to converse with the projected character. It connects to the Internet via a wireless LAN. With infrared rays and Bluetooth, it can also be connected to household appliances and other devices.
Google smart speaker (Nest Hub – Nest Mini)  Google Nest Mini 2nd Gen (without screen)  Google Nest Hub 2nd Gen (with screen)	Coaching device/Smart speaker	Smart speaker with Google vocal assistant. The choice of device type is left to the end-user: - device with screen and speaker (Google Nest Hub) - device with only speaker (Google Nest Mini)	The interaction takes place between the user and the Google Assistant integrated in the device. Requests made by the user to the device are forwarded to Rasa, the e-VITA Dialogue Manager, so that the response is processed by the e-VITA virtual coach.

5.2 European version

5.2.1 Input Screen

Figure 3 shows the UCC input screen through which it is possible to enter information and select options regarding the end-user and the home environment.

Figure 3. UCC European input interface.

The input elements shown in the initial screen of the UCC are listed and explained below.

Personal information

- Age
- Gender
- Country

General end-user information stored in the e-VITA platform.

- Religion

Cultural aspects play an important role in making decisions on outputs. Cultural environment and religion are indeed aspects to consider when choosing a coaching device. In fact, there is a difference between Europe and Japan, less within European countries. From the results of D6.5 *Design Case Studies to Support End-User Appropriation* of the living lab experiments in Japan, Germany and France, and of the wave 1 some considerations regarding this issue emerged. The coaching devices identified are the NAO robot, the Gatebox hologram, the theomorphic robots DarumaTO and CelesTE, and the Google Smart Speaker. While NAO, Gatebox and Google products are commercially available, DarumaTO and CelesTE are newly developed devices in the e-VITA project. DarumaTO is a social robot that resembles a traditional Buddhist and Shinto doll called Daruma, while CelesTE is an interactive angel statue intended to be a prayer companion for older Catholic Christians. DarumaTO is mainly used in Japan or at least for Shinto and Buddhist end-users, while CelesTE is designed for Christian end-users who want a spiritual companion. Other devices such as Gatebox, NAO and Google are used regardless of region and culture but based on user preferences.

- Living situation

The living situation refers to the residents living in the home. In fact, the older user may or may not live alone, if we think of a husband-wife couple, for example. The UCC thus asks to choose between a housing situation with only one resident or one with several residents. The selection made is stored so that the number of residents is taken into account when processing the data acquired via the installed motion sensor network.

Goals

Table 5 shows the sensors, coaching devices and applications associated with each of the goals of the use case domains considered in the UCC. There is a differentiation between Europe and Japan due to the different market availability of the devices. As well as differing in language, the two versions have dedicated sets of sensors from which the configurator derives its output.

Table 5. Technologies related to the use case goals for Europe and Japan.

	Europe			*Japan*		
Goal	*Sensors*	*Coaching devices*	*App*	*Sensors*	*Coaching devices*	*App*
Monitoring *Monitoring the home environment and user habits.*	Delta Dore DMB TYXAL+ Delta Dore DO BL TYXAL+ Netatmo Smart Indoor Air Quality Monitor	NAO robot Gatebox Google smart speaker	-	EnOcean ETC-PIR EnOcean ETB-OCS EnOcean ETB-RHT	NAO robot Gatebox Google smart speaker	-
Physical training and fall prevention *Physical training to improve resistance, posture, balance and muscle strength.*	Huawei Band 7/Oura Ring	NAO robot Gatebox Google smart speaker	Exercise chatbot	Huawei Band 7/Oura Ring	NAO robot Gatebox Google smart speaker	Exercise chatbot
Mobility outside *Sports and activities with local communities.*	Huawei Band 7/Oura Ring	-	Exercise chatbot	Huawei Band 7/Oura Ring	-	Exercise chatbot
Walking everyday *Walk for 30 min at day.*	Huawei Band 7/Oura Ring	-	Exercise chatbot	Huawei Band 7/Oura Ring	-	Exercise chatbot
Support to psychological well-being *Improvement of overall psychological well-being, self-efficacy.*	Huawei Band 7/Oura Ring	NAO robot Gatebox Google smart speaker	-	Huawei Band 7/Oura Ring	NAO robot Gatebox Google smart speaker	-
Emotional recognition *Improvement of overall psychological well-being, mood.*	-	NAO robot Gatebox Google smart speaker	-	-	NAO robot Gatebox Google smart speaker	-
Foster social relationship *Improvement of social connectedness.*	-	NAO robot Gatebox Google smart speaker	Social platform	-	NAO robot Gatebox Google smart speaker	Social platform
Support cognitive functions *Improvement/stability of memory, attention, orientation and executive functions.*	NEU XB-01	NAO robot Gatebox Google smart speaker	ABC App	NEU XB-01	NAO robot Gatebox Google smart speaker	ABC App

Supporting healthy eating *Improvement of healthy eating habits.*	-	NAO robot Gatebox Google smart speaker	Nutrition chatbot	-	NAO robot Gatebox Google smart speaker	Nutrition chatbot
Weight loss and BMI reduction *Personalized diet, BMI reduction.*	-	NAO robot Gatebox Google smart speaker	Nutrition chatbot Exercise chatbot	-	NAO robot Gatebox Google smart speaker	Nutrition chatbot Exercise chatbot
Spirituality *Comfort/wise words, tales, stories.*	-	DarumaTO	-	-	CelesTE	-

All health-related goals require the older user to wear a sensor to track and monitor physiological parameters, activity level, distance walked, calories burned, and cardio-respiratory indices (HR, HRV, SpO_2). The choice of the device for measuring these parameters are left to the users, which can choose the Huawei Band 7 or the Oura Ring based on their preferences. The aim is to monitor the user throughout the day and with particular attention during training sessions. The exercise chatbot helps users to carry out their training by showing them exercise videos and providing all the support they need to perform the exercises correctly and achieve their goals. Older adults often deal with lack of initiative and become passive over time, which leads to less physical activity. This scenario is so based on the need for physical activity and the stimulation of this activity. The exercise chatbot and the virtual coach advice the user to do physical activity. The nutrition chatbot is a platform that assists the user in healthy eating through dynamic, multimodal and personalised interaction. The system provides dietary recommendations and tracks the user's food intake and nutritional behaviour to promote a healthy lifestyle, support healthy eating, weight loss and BMI reduction.

In the broader framework of monitoring the home environment and the behaviour of the user, a series of non-invasive static sensors are suitable for that purpose. A network of motion (Delta Dore DMB TYXAL+/EnOcean ETC-PIR) and door (Delta Dore DO BL TYXAL+/EnOcean ETB-OCS) sensors can detect the presence of a moving person in a room, which provides information on the occupancy of rooms and the movement of occupants from one room to another. This information can be of interest as a complement to the wearable sensors, especially when they are forgotten or under load. The sensor network can be further improved by integrating an air quality monitoring sensor (NETATMO Smart Indoor Air Quality Monitor/EnOcean ETB-RHT). Through the measured data, the virtual coach can provide alerts on the air quality, for example informing the user when it is necessary to open the windows for air recirculation, or specific advice on the optimal times for the execution of the exercises based on the temperature, humidity, and CO_2 level of the indoor environment. The e-VITA coach thus can provide feedback and advice to older people to improve the Indoor Environmental Quality (IEQ) in the living environment and subsequently their well-being and comfort perception using human-coach conversation techniques.

For the support of cognitive functions, the NEU XB-01 is recommended, which is a small device able to monitor brain activity and which, combined with the ABC app, is able to improve memory, attention, orientation and executive functions through the execution of proposed cognitive exercises.

To improve the social connectedness of the older user the proposed social platform can be used. The platform is able to communicate various activities to the user based on their interests (e.g. physical activity with friends)

and put them in contact with others in order to create a network of people who share interests and keep in touch.

The support device for the management and configuration of the e-VITA virtual coach and for the use of the application for the achievement of various goals is provided to the end-user, who will choose whether to use a smartphone or a tablet according to their preferences.

The theme of spirituality can be addressed using DarumaTO and CelesTE. DarumaTO is a social robot resembling a traditional Buddhist and Shinto doll called Daruma, while CelesTE is an interactive statue of an angel designed to be a prayer companion for older Catholic Christians. Both have the function of providing comfort/wise words, tales, stories.

Emotional recognition for the improvement of the general psychological well-being and mood of the older user is performed by means of expression recognition algorithms and/or voice interaction with the coaching device.

Environmental setting

- Number and types of rooms

The environmental setting affects the sensor network configuration, i.e., the number and type of sensors that needs be installed. The UCC prototype asks the user to specify which are the rooms composing the house and provide their number. In providing the optimal configuration of the home sensor network, the UCC considers the results obtained in the study carried out by UNIVPM in T4.3 and described in D4.6. To ensure better user acceptability without losing measurement accuracy, the methodology proposed in that study allows to optimize the configuration of the motion and door sensor network by simulating human activities, and thus sensor activations, in the reconstructed environment using a simulator and by analyzing the datasets generated using ML algorithms to classify Activities of Daily Living (ADL).

Preferences

- Wearable sensors
- Stationary sensors

User preferences entered in the UCC cover the use of wearable sensors and stationary sensors. Indeed, the end-user may or may not be inclined to use wearable sensors or to install sensors in the home. Based on a yes/no answer, the UCC considers the use or non-use of these sensors in the configuration of the e-VITA sensor network.

- Support device

Users can choose to use either a smartphone or a tablet, depending on their preferences, as a support device for managing and configuring the e-VITA virtual coach and for using the different services and applications. The list of suitable models of smartphones and tablets is provided in D4.6.

- Sleep monitoring

Another choice concerns the preference for sleep monitoring. Indeed, the user can monitor various parameters during sleep using wearable devices (e.g., smartwatch) or static sensors, such as the uSkin pillow, a smart pillow developed in the project (description in D4.6).

5.2.2 Output Screen

Figure 4 shows an example of sensor network for the Cognitive training use case related to the Health coaching domain. The UCC, choosing from available technologies and considering the results of sensor network optimisation, identifies the appropriate set of sensing and coaching devices to acquire data and provide appropriate services to achieve the user's goal. In this case, the devices selected are the NEU XB-01 (and its ABC App for cognitive training), the support device (smartphone) needed to run the ABC App, and the Gatebox, NAO and Google smart speaker coaching devices. The type of coaching device is left to the end-users according to their preferences and the cost of the selected configuration (indicated in output by the UCC).

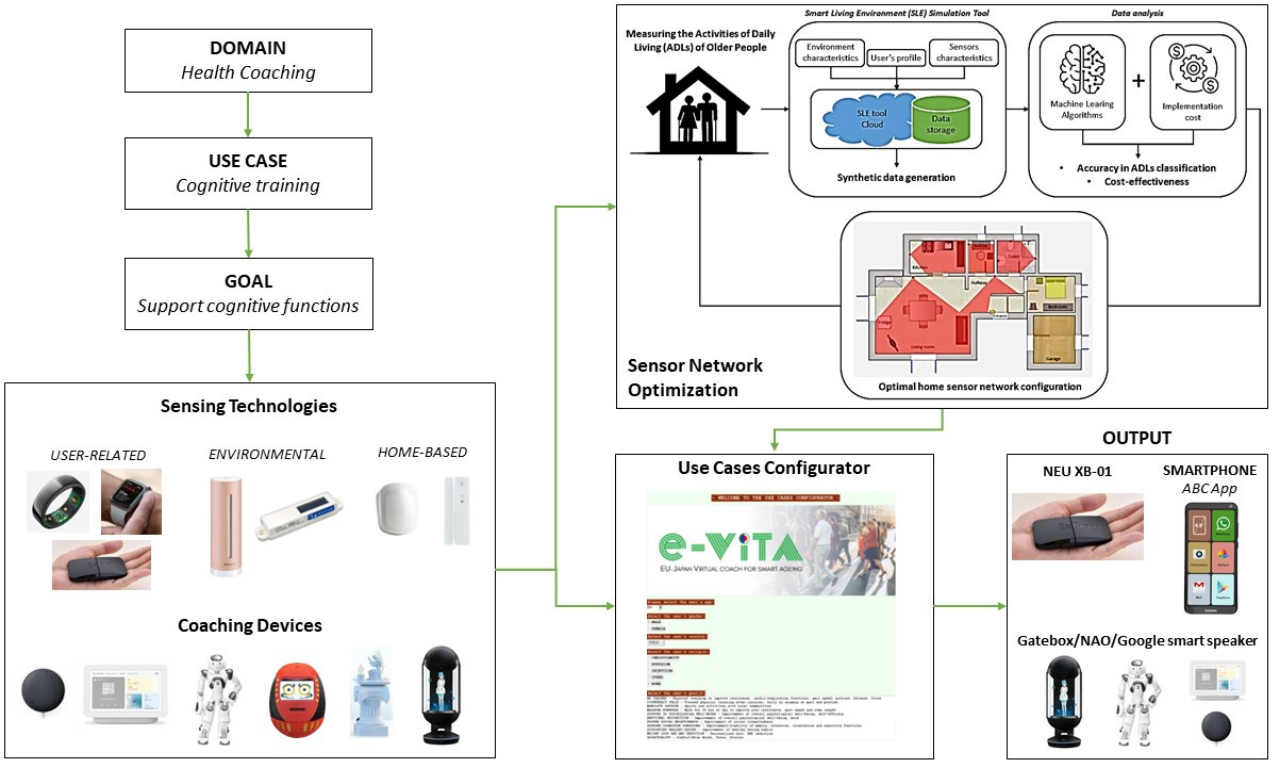


Figure 4. Example of sensor network and coaching devices identification for Cognitive training use case of the Health coaching domain.

Figure 5 (next page) shows the output provided by the UCC for the above example of sensor network identification for the cognitive training use case.

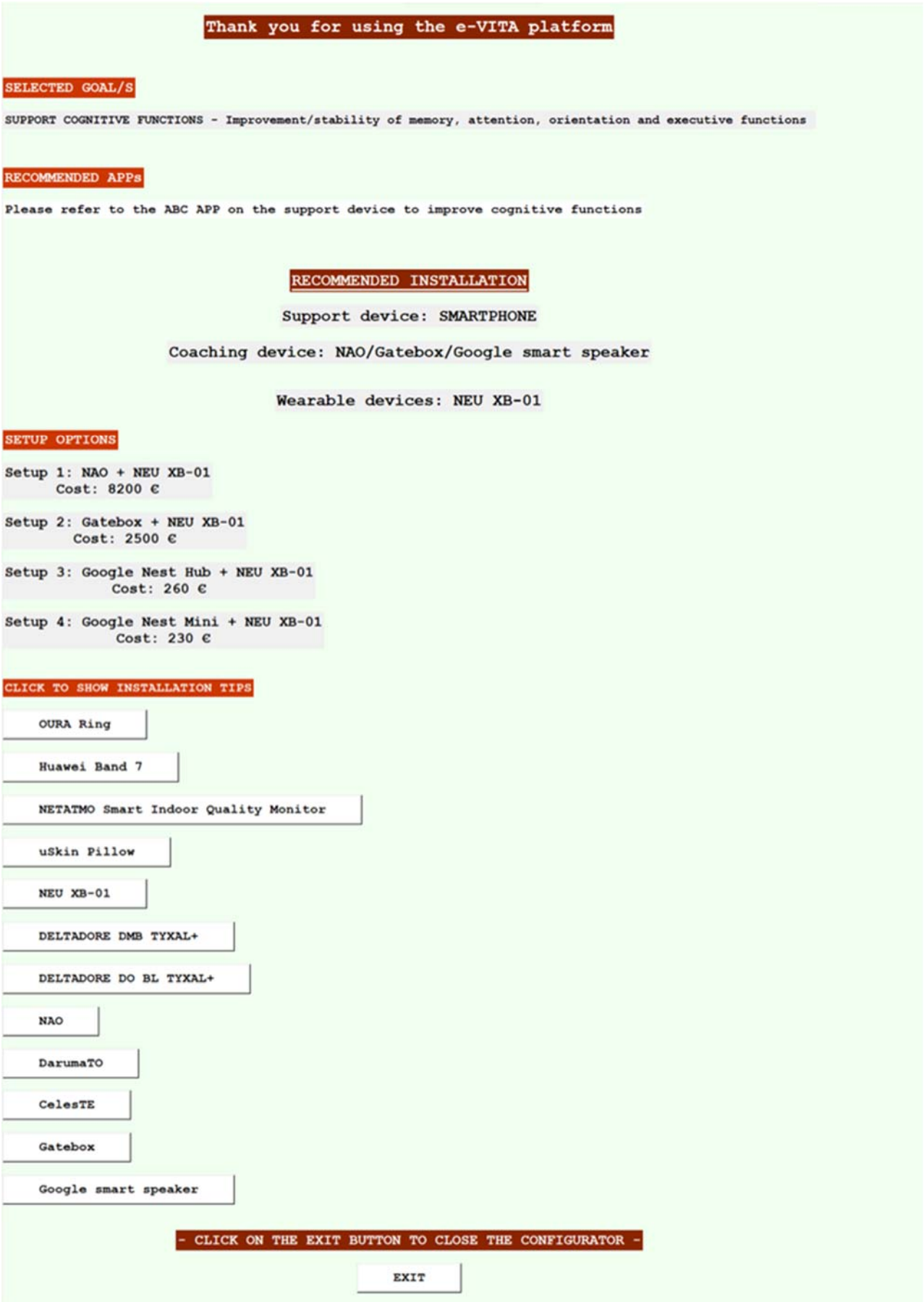


Figure 5. UCC European output screen showing the SELECTED GOAL/S, RECOMMENDED APPS, RECOMMENDED INSTALLATION and SETUP OPTIONS for the recreated example.

As can be seen, the UCC output screen consists of five areas:

- SELECTED GOAL/S, showing the goals selected during the input phase by the installer based on the end-user's preferences.
- RECOMMENDED APPS, which show applications and services that can help the end-user achieve his/her goal or that are necessary for the proper functioning of specific devices.
- RECOMMENDED INSTALLATION, showing the optimal sensor network selected by the UCC according to the use case. The sensor network indicated by the configurator consists of:
    - support device
    - coaching device
    - sensors (static and/or wearable devices)
- SETUP OPTIONS, showing the available configurations of the sensor and coaching device platform and their costs. In this way, the user can select the configuration to be used according to the expense he or she wishes to incur. The intention is to adapt the network of sensors and coaching devices to the needs and possibilities of the user, who may in fact be reluctant to use very expensive devices. Annex 1 shows the table indicating the costs of the devices of the e-VITA platform.
- INSTALLATION TIPS, in the form of clickable buttons for each of the e-VITA platform's sensor and coaching devices, provide advice to the technician on the installation. Annex 2 shows the installation recommendations provided in the European version of the UCC.

5.3 Japanese version

The Japanese version of the UCC differs from the European version not only in language, but, as mentioned above, also in the set of sensors used to achieve some of the goals considered (Table 5). Figure 6 shows the input screen of the Japanese version of the UCC. The installation recommendations provided by the Japanese version of the UCC can be found in Annex 3.

Figure 6. UCC Japanese input interface.

5.4 Stand-alone executable programme and platform integration

The UCC was designed to be used by the technical staff responsible for installing the platform of sensors and coaching devices within the homes of older adults or in care organizations. To ensure that it can be used without being subject to any dependencies, a stand-alone UCC executable file was created. In this way, two UCC executables are provided, one for the European version and one for the Japanese version.
Furthermore, the UCC tool is integrated within the e-VITA platform, exposing its functionality through a REST API accessible from the e-VITA Dashboard.

6. Conclusion

D4.4 describes the updates made to the UCC from the release of the first prototype (presented in D4.3) to the demonstrator released at M26.

To come up with the final version of the configurator, we went through a redesign phase based on user feedback from the wave 1 experiments. In addition to the implementation of new functionalities, the extension of sensor and coaching technologies, and the updating of the graphical user interface, two versions of the UCC were created: one specifically for Japan and one for Europe, differing not only in language, but also in the sensors used.

D4.4 is therefore intended to be an explanatory document of the updates made to the configurator (Table 3, Table 6) and to provide a user manual (see Annex 5) in the different languages of the countries involved in the project.

Table 6. Features of UCC versions compared (green: fully implemented; yellow: partially implemented; red: not implemented).

Features		Prototype	Demonstrator
Version	European		
	Japanese		
Tool development	Stand-alone executable programme		
	Integration into e-VITA Dashboard		
Contents	Use cases domains		
	User goals		
Technologies	Sensors		
	Coaching devices		
Functionalities	Sleep monitoring preference		
	Recommended Apps		
	Installation tips		
	Installation costs of different configurations		
	Sensor network optimization		

7. Future Updates and Exploitation Plan

The UCC will undergo an update process that ensures that all new sensors and coaching devices added to the e-VITA platform are integrated into the tool. This will ensure that the tool follows the evolution of the e-VITA system in future developments so that the user will always have up-to-date software.

Beyond this project, it is planned to extend the UCC by implementing an AI component that will allow the dynamic use of user feedback for self-learning. The rule-based logic process will adapt and learn from users' feedback regarding their preferences for using sensors and coaching devices. In this way, adaptation based on changing user preferences over time will be possible. The configurator will then be exploited in the process of implementing sensor technologies and coaching devices that support and provide services to the older people in the smart home, helping the designer identify the sensor network that best fits the user's needs and preferences.

This software is owned by UNIVPM and is distributed confidentially within the project. Being integrated into the e-VITA platform, the tool will be distributed under the UNIVPM licence included in the e-VITA system. The UCC and the expertise developed within the project will be used for consulting in the fields of buildings (smart homes) and cities (both industries and Public Administration), as well as for future new projects. Interested parties who would like to use this software outside the e-VITA system can contact us to arrange an appropriate licence.

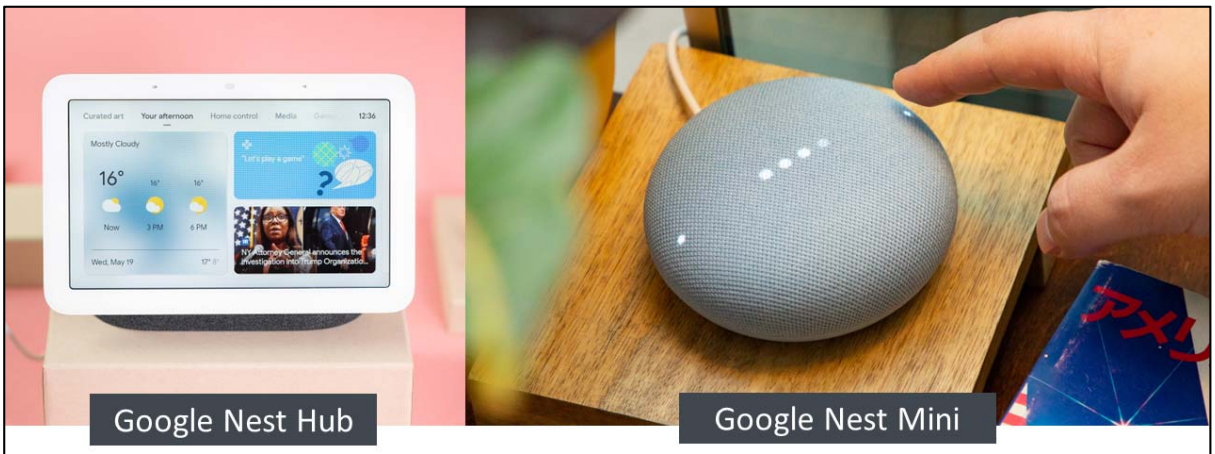
Annexes

Annex 1: e-VITA Platform Device Cost Table

Device	Cost (€)	Cost (¥)
Oura Ring	314	44475
Huawei Band 7	50	7080
Netatmo Smart Air Quality Monitor	100	-
EnOcean ETB-RHT	-	17300
NEU XB-01	200	28000
uSkin pillow	1400	200000
Delta Dore DMB TYXAL+	186	-
Delta Dore DO BL TYXAL+	135	-
EnOcean ETB-OCS	-	12800
EnOcean ETC-PIR	-	30600
NAO	8000	1133084
Gatebox	2300	325760
CelesTE	1170	163800
DarumaTO	1170	163800
Google Nest Hub	60	8500
Google Nest Mini	30	4250

Annex 2: Configurator Tips – European UCC version

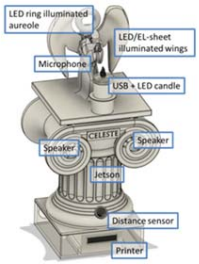
Coaching devices



GOOGLE Smart Speaker

Place the Google smart speaker in a comfortable raised position (e.g. on a table) in the main room of the house to increase and simplify user interaction.

CeleSTE

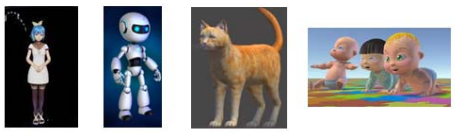


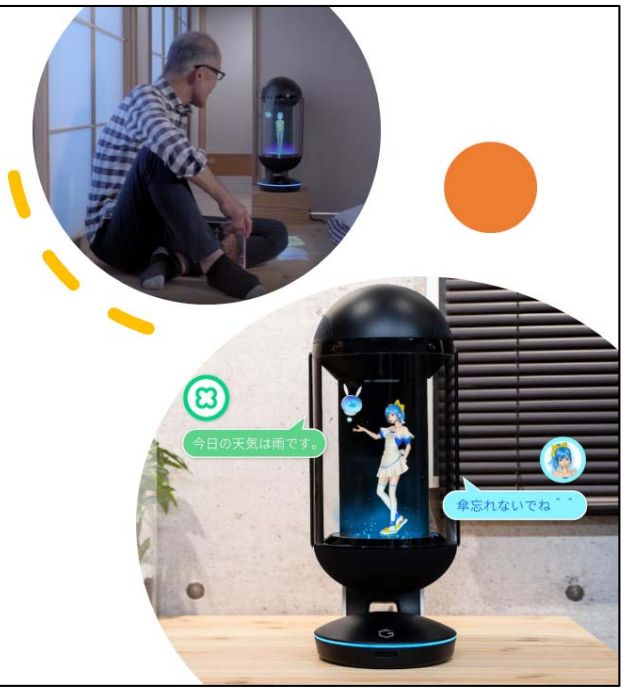
Place CelesTE in a comfortable raised position (e.g. on a table) in the main room of the house to increase and simplify user interaction.

GATEBOX

Place the GATEBOX in a comfortable raised position (e.g. on a table) in the main room of the house to increase and simplify user interaction.

Avatar characters can be selected by the user.





NAO

Place the NAO robot on the floor and instruct the user to maintain eye contact when interacting with NAO, stand in front of it, use short sentences and speak loudly and clearly so as not to speak too fast at the same time.

DarumaTO

Place DarumTO in a comfortable raised position (e.g. on a table) in the main room of the house to increase and simplify user interaction.

Sensing technologies

DELTA DORE DMB TYXAL + Motion Sensor

DELTA DORE DMB TYXAL + motion sensors should be installed in the rooms recommended by the configurator.

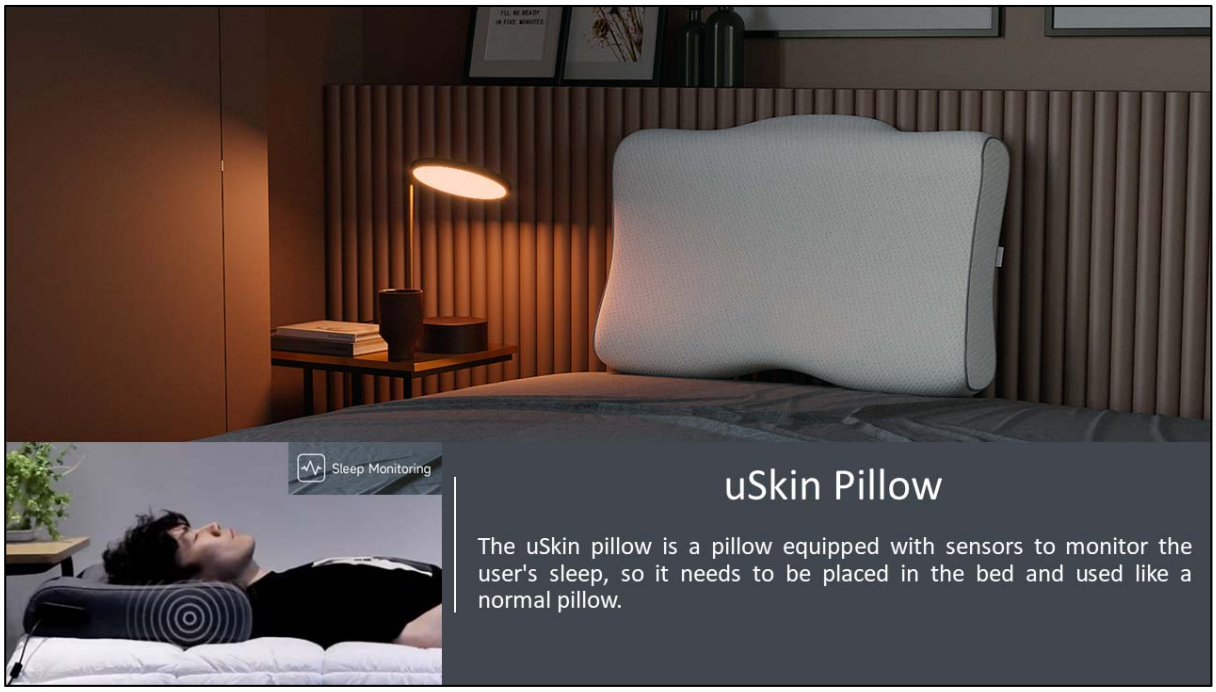
- It is recommended to install the sensor at least 1.5 m above the floor.
- It is advisable to avoid installing the sensors near doors or windows and to ensure that the sensors are not obscured by them.

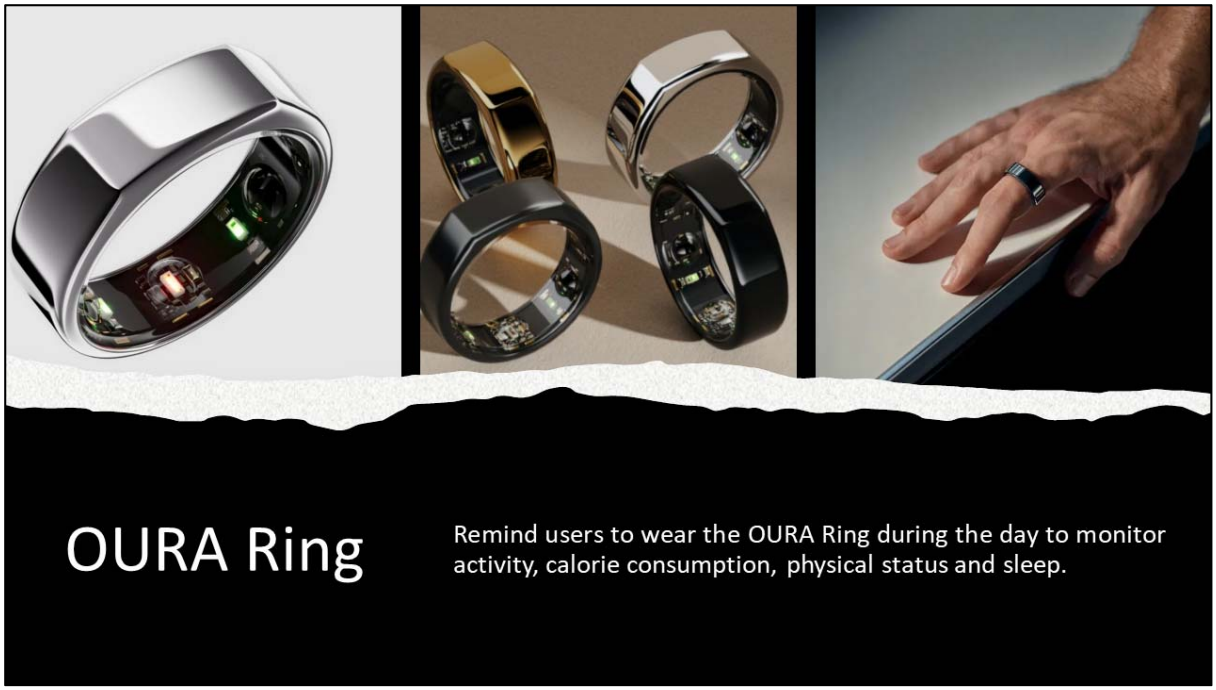
DELTA DORE
Smart is the new power

DELTA DORE DO BL TYXAL + Door Sensor

It is recommended to install DELTA DORE DO BL TYXAL + sensors on the entrance door(s) and fridge/food storage door(s).

DELTA DORE
Smart is the new power


Sleep Monitoring
uSkin Pillow
The uSkin pillow is a pillow equipped with sensors to monitor the user's sleep, so it needs to be placed in the bed and used like a normal pillow.


OURA Ring
Remind users to wear the OURA Ring during the day to monitor activity, calorie consumption, physical status and sleep.


Netatmo
Healthy
NETATMO
Smart Indoor Air Quality Monitor
It is preferable to install the NETATMO Smart Indoor Air Quality Monitor in the main room of the house (e.g. living room) or wherever the user spends most of the time during the day.


NEU XB-01
The NEU system allows brain training to be tailored to the user by attaching the XB-01 sensor to the head and using the dedicated ABC App available on smartphones and tablets.
• The compact sensor can be used to measure brain activity.
• The level of brain training can be adapted to the level of difficulty appropriate to the person using the system.
• It only takes 5-10 minutes a day!
• A new brain exercise is released in the app every month.
• Brain training is automatically recorded, so that the results and status of training can be seen at a glance on the app.
ExBrain
NeU
6÷1
1+2
6÷2
ExBrain®

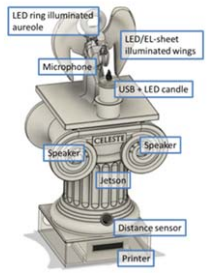
Annex 3: Configurator Tips – Japanese UCC version

Coaching devices

GOOGLEスマートスピーカー

ユーザーが話しやすくなり対話が増えるよう、Googleスマートスピーカーをよく使う部屋のじゃまにならない高い場所（例えばリビングのテーブルの上）に置きましょう。

CeleSTE



ユーザーが話しやすくなり対話が増えるよう、CelesTEをよく使う部屋のじゃまにならない高い場所（例えばリビングのテーブルの上）に置きましょう。

GATEBOX

ユーザーが話しやすくなり対話が増えるよう、**Gatebox**をよく使う部屋のじゃまにならない高い場所（例えばリビングのテーブルの上）に置きましょう。

キャラクターはユーザーが選択することができます。





NAO

NAOロボットを床に置き、ユーザーに以下のことを伝えましょう。

NAOと対話するときは、

- NAOと目を合わせましょう
- NAOの前に立ちましょう
- 短い言葉を使い、大きな声ではっきりと話しましょう
- 早口で話さないようにしましょう

DarumaTO

ユーザーが話しやすくなり対話が増えるよう、DarumaTOをよく使う部屋のじゃまにならない高い場所（例えばリビングのテーブルの上）に置きましょう。

Sensing technologies

ENOCEAN ETC-PIR 人感センサー

ENOCEAN ETC-PIR人感センサーは、コンフィギュレーターが推奨する部屋に設置することをお勧めします。

- センサーは地面から1.5m以上の高さに設置することが望ましいです。
- ドアや葉っぱの近くにセンサーを設置するのは避け、ドアや葉っぱでセンサーが見えなくならないようにすることが望ましいです。

ENOCEAN ETB-OCS ドアセンサ

玄関ドアやキッチンの冷蔵庫・食品庫のドアにENOCEAN ETB-OCSセンサーを設置することをお勧めします。


Sleep Monitoring
uSkin枕センサー
uSkin枕センサーは、ユーザーの睡眠をモニターするセンサーを搭載した枕なので、通常の枕と同じように頭をのせてご使用ください。


OURAリング
活動量、消費カロリー、体調、睡眠などをモニターするために、日中Ouraリングを装着するようユーザーに促します。

ENOCEAN ETB-RHT
温度・湿度センサー

ENOCEAN ETB-RHTは、温度と湿度を測定するセンサーです。家のメインルーム（リビングルームなど）や、日中ユーザーが最も長い時間を過ごす場所に設置することをお勧めします。

NEU XB-01

このセンサーを頭に付け、スマホ・タブレットで使用できる専用アプリで脳トレを行うことで、使用する人に合った脳トレができるシステムになっています。

- 小型センサーで脳の活動を測ることができる
- 脳の活性度や脳トレの結果に合わせて、使用する人に合った難易度の脳トレができる
- 所要時間は1日5～10分だけ！
- 毎月新しい脳トレがアプリに配信される
- 脳トレの結果が自動的に記録されるので、トレーニングの成果や状況がアプリ上で一目でわかるようになっています。

Annex 4: Use Cases Configurator Questionnaire

English

Use Cases Configurator Questionnaire

1. How do you evaluate the use of the configurator?

0	1	2	3	4	5

2. How user friendly is the software interface?

Extremely friendly	☐
Moderately friendly	☐
Not very friendly	☐
Not friendly at all	☐

3. Have you encountered problems using the software?

4. Which fields do you think should be added in the configurator interface?

5. Which fields do you think should be removed in the configurator interface?

6. Do you think the inputs are appropriate? Which ones would you modify?

7. Do you think the outputs are appropriate? Which ones would you modify?

8. Please indicate in your own words the areas where we need to improve.

Japanese

ユーザーアンケート

1. コンフィギュレーターの使用感はどのように評価されていますか？

0	1	2	3	4	5

2. ソフトウェアのインターフェースは使いやすいか？

非常に親しみやすい ☐
適度なフレンドリーさ ☐
あまりフレンドリーではない ☐
全くもってフレンドリーではない ☐

3. ソフトウェアを使用する上で、問題が発生したことはありますか?

4. コンフィギュレーターのインターフェースに追加・削除すべき項目は？

5. 入力は適切だと思いますか？どれを修正しますか？

6. 出力は適切だと思いますか？あなたならどれを修正しますか？

7. 改善すべき点をお書きください。

Annex 5: Use Cases Configurator (UCC) User Manuals

English

The use of the UCC is aimed at technical installers, pilot implementers, formal caregivers, and project partners in the initial phase of the implementation of the e-VITA system.

To use the UCC it is necessary to launch the "UCC.exe" application on your PC or access it via the e-VITA Dashboard.

After doing this, the UCC input screen will open.

Scrolling down the screen you will find questions asked by the configurator and selectable options.

The user must select the various options and enter information relating to the end-user's expectations, needs and preferences, and aspects related to the environmental setting.

At this point, to make the UCC process the selected inputs to form a use case, press the COMPUTE THE CONFIGURATION button.

If, on the other hand, you do not intend to proceed with the configuration, just press the EXIT button to exit the programme.

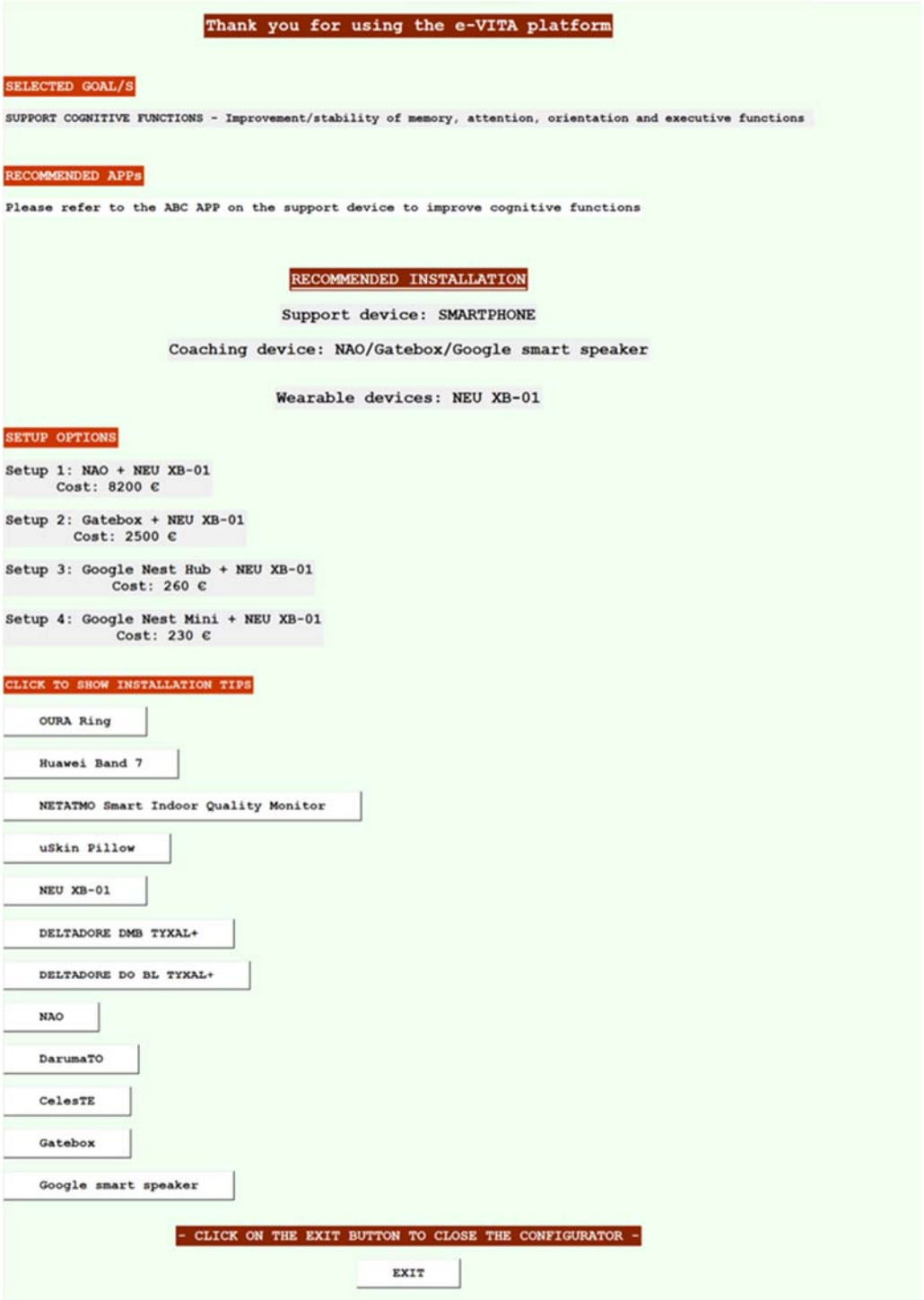
After pressing COMPUTE THE CONFIGURATION, an output window appears showing the selected goals, recommended apps, recommended installation, setup options and installation tips.

Under the heading RECOMMENDED INSTALLATION you will find the support device, the sensors and the coaching devices that the UCC recommends to install to make up the e-VITA platform for the defined use case.

The possible configurations for the use case and their respective costs are indicated under SETUP OPTIONS. The end-user can choose one of the configurations according to the expense he/she intends to incur.

Under the item CLICK TO SHOW INSTALLATION TIPS you will find useful information regarding the devices/sensors named in each of the buttons. By pressing the button of interest, a window will open showing the device and the installation recommendations.

At the end of the output screen, there is the EXIT button, which if pressed will return us to the initial screen of the UCC, in order to allow us to modify the previous use case by selecting different options and entering different information, or to create one from scratch, or to exit the configurator.



By clicking the EXIT button after configuration to exit the programme, the UCC will save a "configuration_info.txt" file in the same folder where "UCC.exe" is stored, which contains all the information relating to the configuration just carried out.

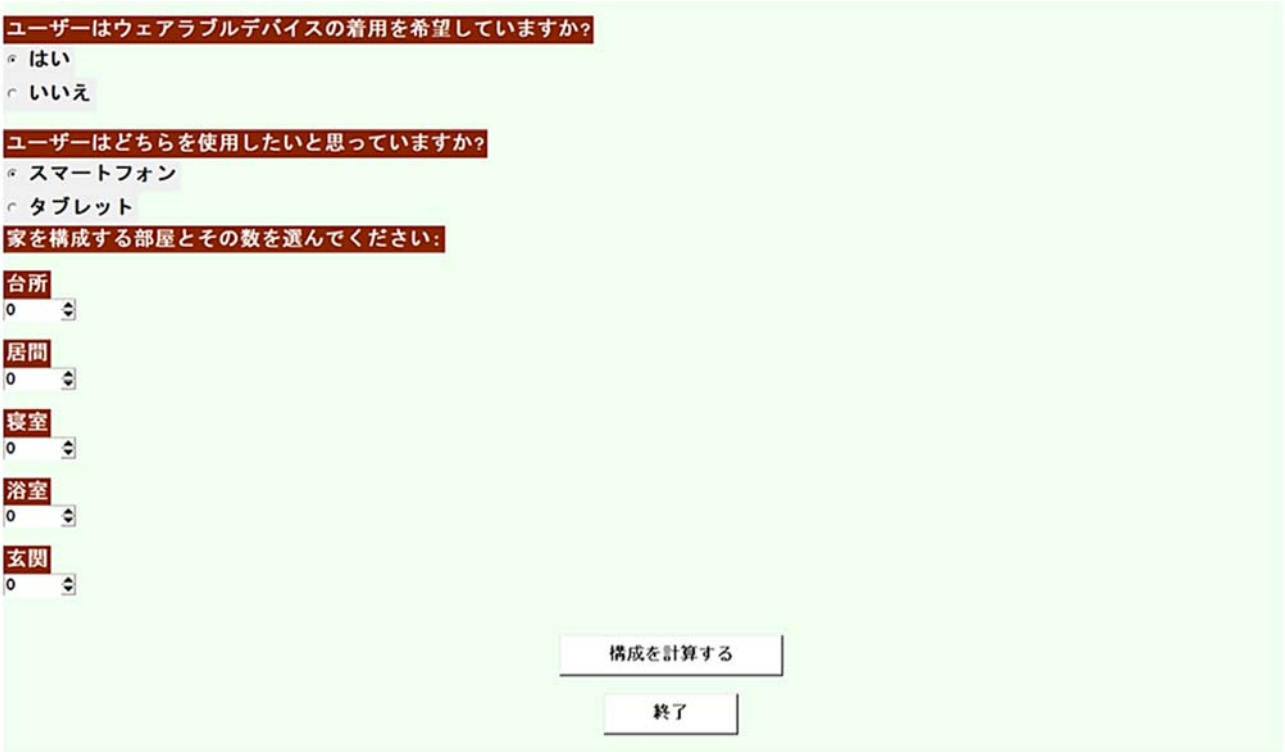
PLEASE NOTE: every time a configuration is done and the EXIT key pressed, the UCC overwrites the previous "configuration_info.txt" file. So, in order not to lose the report of the last configuration, remember to rename the file every time.

Japanese

Use Cases Configurator（ユースケースコンフィギュレーター、以降ではUCC）の使用は、e-VITAシステム導入の初期段階における技術導入者、パイロット実施者、正式な介護者、プロジェクトパートナーなどを対象としています。

UCCを利用するためには、PC上で「UCC.exe」アプリケーションを起動するか、e-VITA　Dashboardからアクセスする必要があります。

この操作を行うと、UCCの入力画面が表示されます。



画面を下方向にスクロールすると、コンフィギュレーターが質問する内容や選択可能なオプションが表示されます。

ユーザーはさまざまなオプションを選択するとともに、エンドユーザーの期待やニーズ、好みに関する情報や、環境設定に関する情報を入力する必要があります。

この時点で、選択した入力内容をUCCに処理させてユースケースを形成するために、「構成を計算する」ボタンを押します。

逆に、設定を続けない場合は、「終了」ボタンを押すだけで、プログラムを終了することができます。

「構成を計算する」を押すと、選択した目標、推奨アプリ、インストールを推奨するデバイス類、セットアップオプション、デバイス類のインストールのヒントを示す出力ウィンドウが表示されます。

「インストールを推奨するデバイス類」のカテゴリーには、定義されたユースケースに応じたe-VITAプラットフォームを構成するためにUCCが設置を推奨するサポートデバイス、センサー類、コーチングデバイスが表示されます。

ユースケースに可能な構成とそれぞれの費用は、「セットアップオプション」に示されています。エンドユーザーは、自分が負担しようとする費用に応じて、いずれかの構成を選択することができます。

「クリックしてデバイス類のインストールのヒントを表示」の項目には、それぞれのボタンに表示されているデバイス/センサーに関する有益な情報が表示されます。興味のあるボタンを押すと、ウィンドウが開き、デバイスの画像とインストールに関する推奨事項が表示されます。

出力画面の最後には終了ボタンがあり、これを押すとUCCの初期画面に戻ります。別のオプションを選択したり別の情報を入力したりして前のユースケースを変更することや、最初から作成し直すこと、ユースケースコンフィギュレーターを終了することができます。

構成設定後に 終了ボタンをクリックしてプログラムを終了すると、UCC は「UCC.exe」 が格納されているフォルダに、今実施した構成設定に関する全ての情報を含む「configuration_info.txt」　ファイルを保存します。

注意：構成設定を行い、終了キーを押すたびに、UCC は以前の "configuration_info.txt" ファイルを上書きします。そのため、前回の設定情報が失われないように、毎回ファイル名を変更することを忘れないようにしてください。

German

Die Verwendung des UCC richtet sich an technische Installateure, Piloteinrichter, formelle Betreuer und Projektpartner in der Anfangsphase der Einführung des e-VITA-Systems.

Um das UCC zu nutzen, müssen Sie die Anwendung "UCC.exe" auf Ihrem PC starten oder über das e-VITA Dashboard darauf zugreifen.

Daraufhin öffnet sich der UCC-Eingabebildschirm.

Wenn Sie auf dem Bildschirm nach unten scrollen, finden Sie die vom Konfigurator gestellten Fragen und die auswählbaren Optionen.

Der Benutzer muss die verschiedenen Optionen auswählen und Informationen zu den Erwartungen, Bedürfnissen und Vorlieben des Endbenutzers sowie zu Aspekten der Umgebung eingeben.

Drücken Sie an dieser Stelle auf die Schaltfläche COMPUTE THE CONFIGURATION, damit das UCC die ausgewählten Eingaben zu einem Anwendungsfall verarbeitet.

Wenn Sie hingegen nicht mit der Konfiguration fortfahren wollen, drücken Sie einfach die Taste EXIT, um das Programm zu verlassen.

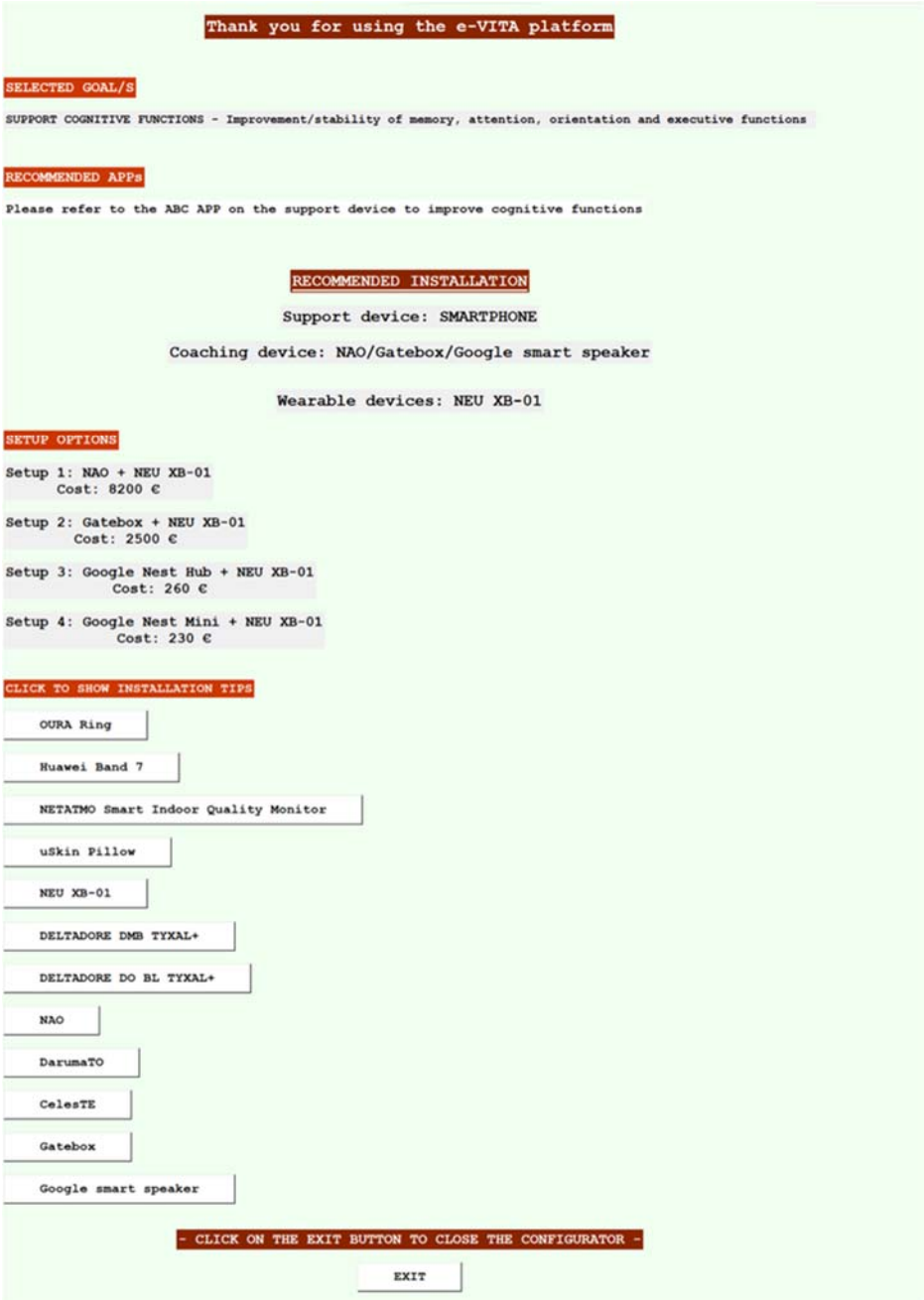
Nachdem Sie auf COMPUTE THE CONFIGURATION gedrückt haben, erscheint ein Ausgabefenster, das die ausgewählten Ziele, die empfohlenen Anwendungen, die empfohlene Installation, die Konfigurationsoptionen und die Installationstipps anzeigt.

Unter der Überschrift RECOMMENDED INSTALLATION finden Sie das Trägergerät, die Sensoren und die Coaching-Geräte, deren Installation das UCC empfiehlt, um die e-VITA-Plattform für den definierten Anwendungsfall zu bilden.

Die möglichen Konfigurationen für den Anwendungsfall und ihre jeweiligen Kosten sind unter SETUP OPTIONS angegeben. Der Endnutzer kann eine der Konfigurationen wählen, je nachdem, welche Kosten er zu tragen gedenkt.

Unter dem Punkt CLICK TO SHOW INSTALLATION TIPS finden Sie nützliche Informationen zu den Geräten/Sensoren, die in den einzelnen Schaltflächen genannt werden. Wenn Sie auf die entsprechende Schaltfläche klicken, öffnet sich ein Fenster, in dem das Gerät und die Installationsempfehlungen angezeigt werden.

Am Ende des Ausgabebildschirms befindet sich die Schaltfläche EXIT, die, wenn sie betätigt wird, zum Ausgangsbildschirm des UCC zurückkehrt, um den vorherigen Anwendungsfall durch Auswahl anderer Optionen und Eingabe anderer Informationen zu ändern, einen neuen zu erstellen oder den Konfigurator zu verlassen.



Wenn Sie nach der Konfiguration auf die Schaltfläche EXIT klicken, um das Programm zu beenden, speichert der UCC eine Datei "configuration_info.txt" in demselben Ordner, in dem auch "UCC.exe" gespeichert ist, die alle Informationen über die gerade durchgeführte Konfiguration enthält.

BITTE BEACHTEN: Jedes Mal, wenn eine Konfiguration durchgeführt und die Taste EXIT gedrückt wird, überschreibt der UCC die vorherige Datei "configuration_info.txt". Um den Bericht der letzten Konfiguration nicht zu verlieren, müssen Sie die Datei jedes Mal umbenennen.

Italian

L'uso dell'UCC è rivolto a installatori tecnici, implementatori del progetto pilota, caregiver istituzionali e partner del progetto nella fase iniziale dell'implementazione del sistema e-VITA.

Per utilizzare l'UCC è necessario lanciare l'applicazione "UCC.exe" sul proprio PC o accedervi tramite la Dashboard di e-VITA.

Dopo questa operazione, si aprirà la schermata di immissione.

Scorrendo la schermata si trovano le domande poste dal configuratore e le opzioni selezionabili.

L'utente deve selezionare le varie opzioni e inserire le informazioni relative alle aspettative, alle esigenze e alle preferenze dell'utente finale e agli aspetti legati al contesto ambientale.

A questo punto, per far sì che l'UCC elabori gli input selezionati per formare un caso d'uso, premere il pulsante COMPUTE THE CONFIGURATION.

Se invece non si intende procedere con la configurazione, basta premere il tasto EXIT per uscire dal programma.

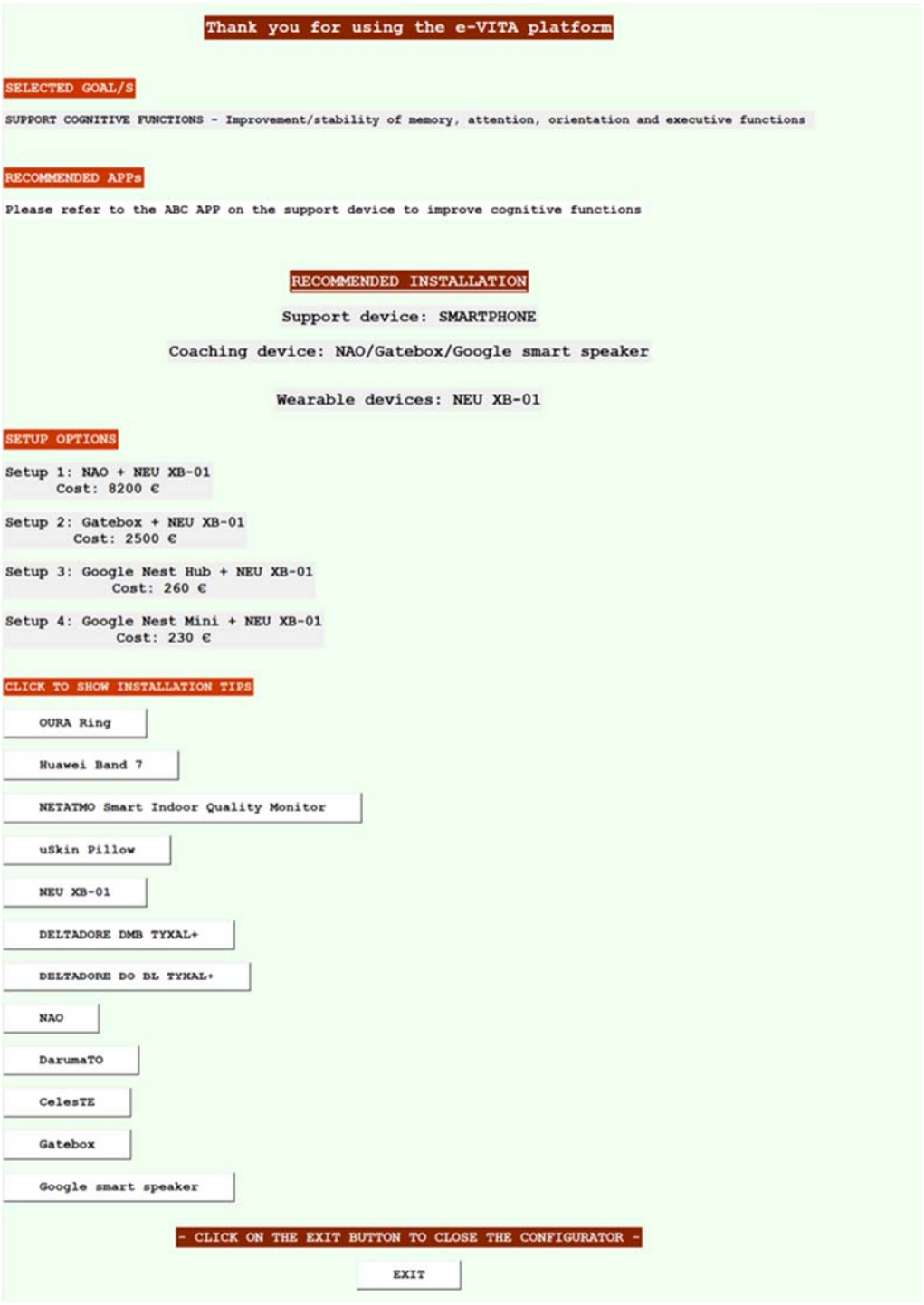
Dopo aver premuto COMPUTE THE CONFIGURATION, viene visualizzata una finestra di output che mostra gli obiettivi selezionati, le applicazioni consigliate, l'installazione consigliata, le opzioni di configurazione e i suggerimenti per l'installazione.

Sotto la voce RECOMMENDED INSTALLATION si trovano il dispositivo di supporto, i sensori e i dispositivi di coaching che l'UCC raccomanda di installare per costituire la piattaforma e-VITA per il caso d'uso definito.

Le possibili configurazioni per il caso d'uso ed i rispettivi costi sono indicati alla voce SETUP OPTIONS. L'utente finale può scegliere una delle configurazioni in base alla spesa che intende sostenere.

Alla voce CLICK TO SHOW INSTALLATION TIPS si trovano informazioni utili sui dispositivi/sensori indicati in ciascuno dei pulsanti. Premendo il pulsante di interesse, si aprirà una finestra che mostra il dispositivo ed i consigli per l'installazione.

Alla fine della schermata di output è presente il pulsante EXIT, che se premuto ci riporterà alla schermata iniziale dell'UCC, per permetterci di modificare il caso d'uso precedente selezionando diverse opzioni e inserendo diverse informazioni, o di crearne uno da zero, o di uscire dal configuratore.



Facendo clic sul pulsante EXIT dopo la configurazione per uscire dal programma, l'UCC salverà un file "configuration_info.txt" nella stessa cartella in cui è archiviato "UCC.exe", che contiene tutte le informazioni relative alla configurazione appena effettuata.

NOTA BENE: ogni volta che si effettua una configurazione e si preme il tasto EXIT, l'UCC sovrascrive il file "configuration_info.txt" precedente. Quindi, per non perdere il resoconto dell'ultima configurazione, ricordarsi di rinominare il file ogni volta.

French

L'utilisation de l'UCC s'adresse aux installateurs techniques, aux responsables de la mise en œuvre pilote, aux soignants officiels et aux partenaires du projet dans la phase initiale de la mise en œuvre du système e-VITA.

Afin d'utiliser l'UCC, il est nécessaire de lancer l'application "UCC.exe" sur votre PC ou d'y accéder via l'e-VITA Dashboard.

Après avoir fait cela, l'écran de saisie UCC s'ouvrira.

En faisant défiler l'écran, vous trouverez les questions posées par le configurateur et les options sélectionnables.

L'utilisateur doit sélectionner les différentes options et saisir les informations relatives aux attentes, aux besoins et aux préférences de l'utilisateur final, ainsi que les aspects liés au contexte environnemental.

À ce stade, pour que l'UCC traite les entrées sélectionnées afin de former un cas d'utilisation, appuyez sur le bouton COMPUTE THE CONFIGURATION.

Si, par contre, vous n'avez pas l'intention de poursuivre la configuration, il suffit d'appuyer sur le bouton EXIT pour quitter le programme.

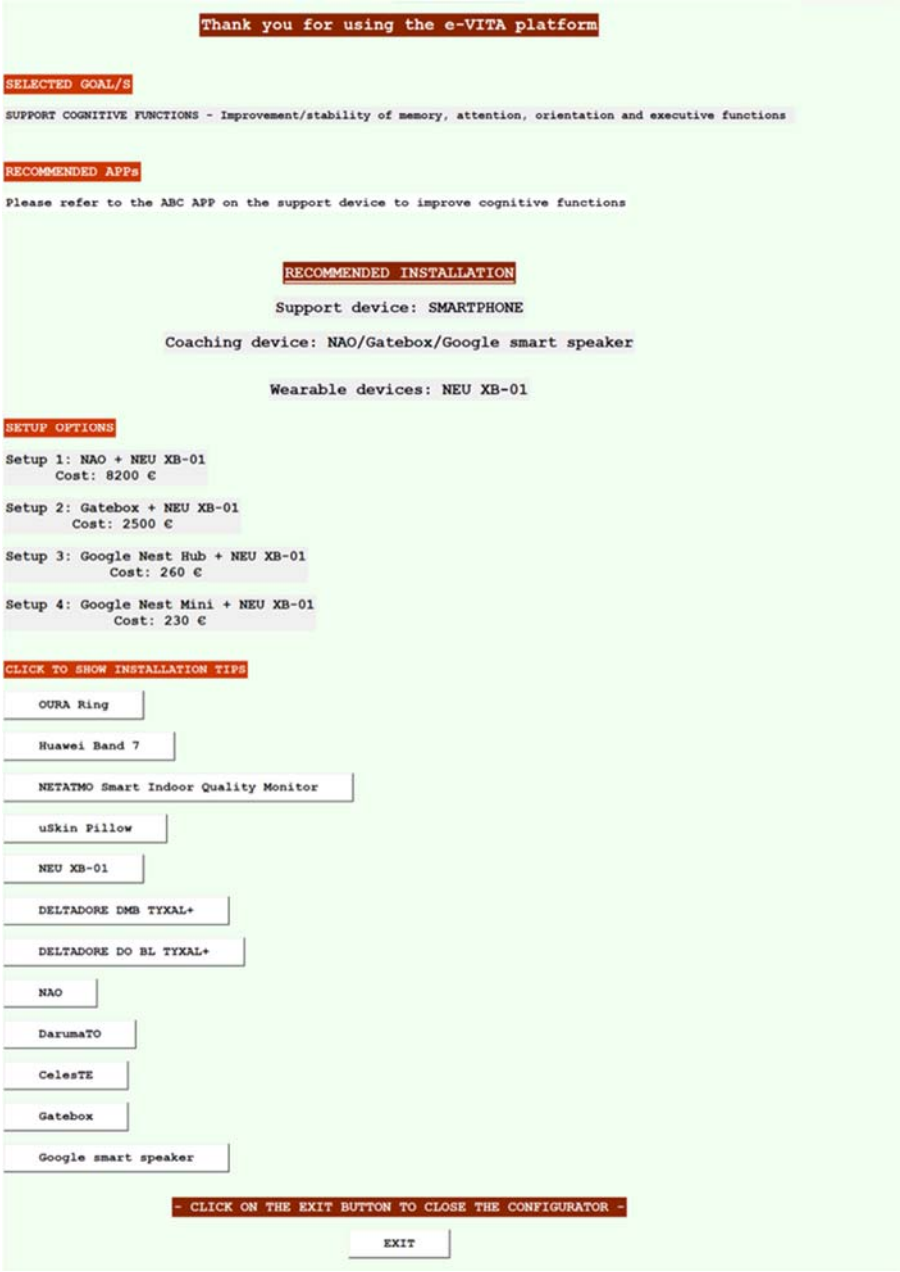
Après avoir appuyé sur COMPUTE THE CONFIGURATION, une fenêtre de sortie apparaît, indiquant les cibles sélectionnées, les applications recommandées, l'installation recommandée, les options de configuration et les conseils d'installation.

Sous la rubrique RECOMMENDED INSTALLATION, vous trouverez le dispositif d'assistance, les capteurs et les dispositifs de coaching que l'UCC recommande d'installer pour constituer la plateforme e-VITA pour le cas d'utilisation défini.

Les configurations possibles pour le cas d'utilisation et leurs coûts respectifs sont indiqués sous SETUP OPTIONS. L'utilisateur final peut choisir l'une des configurations en fonction des dépenses qu'il entend engager.

Sous la rubrique CLICK TO SHOW INSTALLATION TIPS, vous trouverez des informations utiles concernant les dispositifs/capteurs nommés dans chacun des boutons. En appuyant sur le bouton qui vous intéresse, une fenêtre s'ouvrira, montrant le dispositif et les recommandations d'installation.

À la fin de l'écran de sortie, il y a le bouton EXIT, qui, s'il est pressé, nous ramènera à l'écran initial de l'UCC, afin de nous permettre de modifier le cas d'utilisation précédent en sélectionnant différentes options et en entrant différentes informations, ou d'en créer un à partir de zéro, ou de quitter le configurateur.



En cliquant sur le bouton EXIT après la configuration pour quitter le programme, l'UCC sauvegardera un fichier "configuration_info.txt" dans le même dossier où se trouve "UCC.exe", qui contient toutes les informations relatives à la configuration qui vient d'être effectuée.

VEUILLEZ NOTER: chaque fois qu'une configuration est effectuée et que la touche EXIT est pressée, l'UCC écrase le fichier "configuration_info.txt" précédent. Donc, afin de ne pas perdre le rapport de la dernière configuration, n'oubliez pas de renommer le fichier à chaque fois.

Spanish

El uso de la UCC está dirigido a instaladores técnicos, ejecutores piloto, cuidadores formales y socios del proyecto en la fase inicial de implantación del sistema e-VITA.

Para utilizar la UCC es necesario iniciar la aplicación "UCC.exe" en su PC o acceder a ella a través del e-VITA Dashboard.

Una vez hecho esto, se abrirá la pantalla de introducción de datos UCC.

Si se desplaza hacia abajo por la pantalla, encontrará las preguntas que formula el configurador y las opciones seleccionables.

El usuario debe seleccionar las distintas opciones e introducir información relativa a las expectativas, necesidades y preferencias del usuario final, así como aspectos relacionados con el entorno ambiental.

En este punto, para que la UCC procese las entradas seleccionadas para formar un caso de uso, pulse el botón COMPUTE THE CONFIGURATION.

Si, por el contrario, no desea continuar con la configuración, basta con pulsar el botón EXIT para salir del programa.

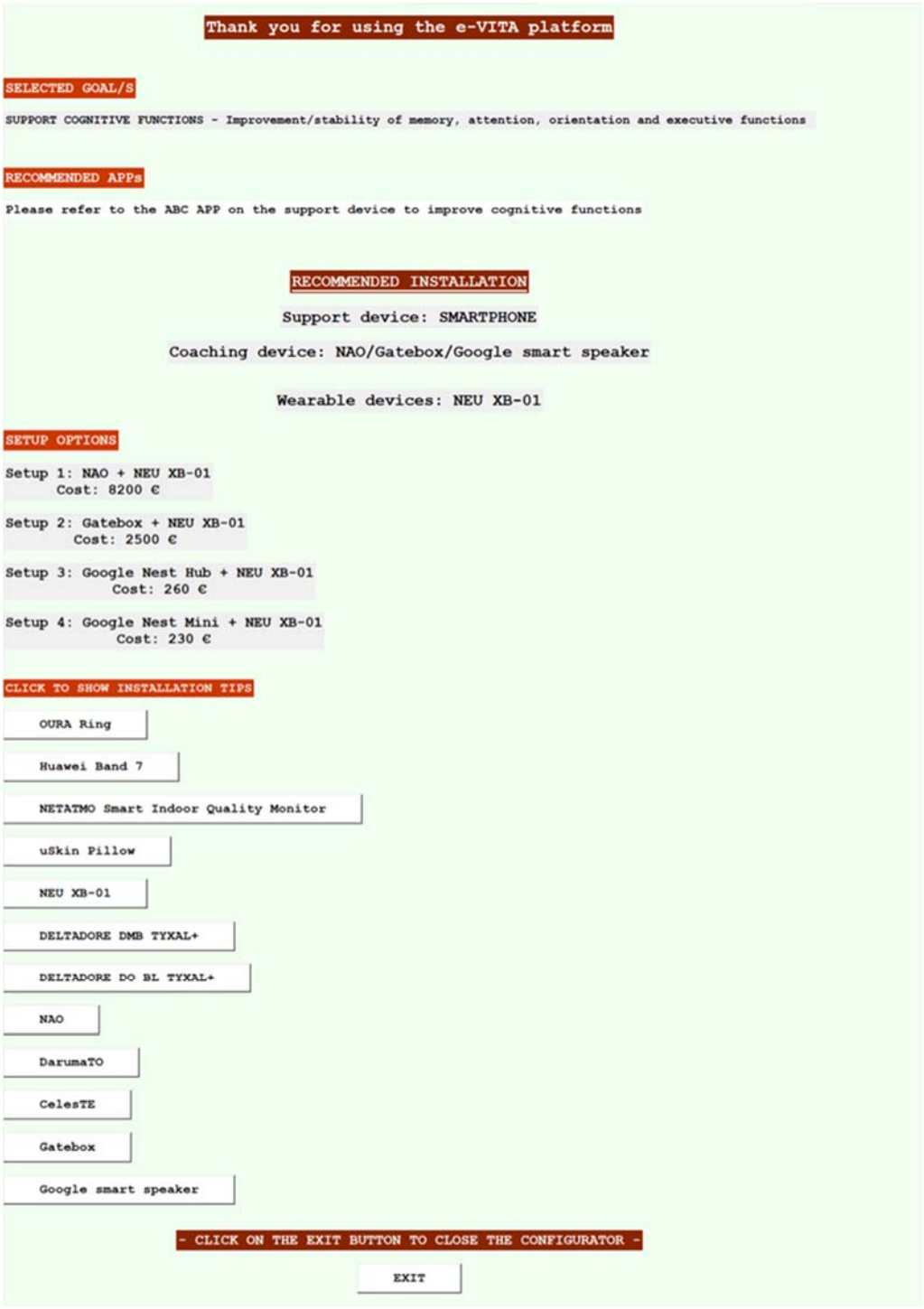
Tras pulsar COMPUTE THE CONFIGURATION, aparece una ventana de salida que muestra los objetivos seleccionados, las aplicaciones recomendadas, la instalación recomendada, las opciones de configuración y consejos de instalación.

Bajo el título RECOMMENDED INSTALLATION encontrará el dispositivo de soporte, los sensores y los dispositivos de coaching que la UCC recomienda instalar para conformar la plataforma e-VITA para el caso de uso definido.

Las posibles configuraciones para el caso de uso y sus respectivos costes se indican en SETUP OPTIONS. El usuario final puede elegir una de las configuraciones en función del gasto que pretenda realizar.

En la opción CLICK TO SHOW INSTALLATION TIPS encontrará información útil relativa a los dispositivos/sensores nombrados en cada uno de los botones. Pulsando el botón de interés, se abrirá una ventana mostrando el dispositivo y las recomendaciones de instalación.

Al final de la pantalla de salida, se encuentra el botón SALIR, que si se pulsa nos devolverá a la pantalla inicial de la UCC, para permitirnos modificar el caso de uso anterior seleccionando diferentes opciones e introduciendo diferente información, o crear uno desde cero, o salir del configurador.



Al hacer clic en el botón EXIT después de la configuración para salir del programa, el UCC guardará un archivo "configuration_info.txt" en la misma carpeta en la que está almacenado "UCC.exe", que contiene toda la información relativa a la configuración que se acaba de realizar.

ATENCIÓN: cada vez que se realiza una configuración y se pulsa la tecla EXIT, la UCC sobrescribe el fichero "configuration_info.txt" anterior. Por lo tanto, para no perder el informe de la última configuración, recuerde renombrar el fichero cada vez.

Dutch

Het gebruik van de UCC is gericht op technische installateurs, pilot-uitvoerders, formele zorgverleners en projectpartners in de beginfase van de invoering van het e-VITA-systeem.

Om de UCC te gebruiken is het nodig de "UCC.exe" toepassing op uw PC te starten of toegang te krijgen via het e-VITA Dashboard.

Hierna opent het UCC-invoerscherm.

Naar beneden scrollend in het scherm vindt u vragen die door de configurator worden gesteld en selecteerbare opties.

De gebruiker moet de verschillende opties selecteren en informatie invoeren met betrekking tot de verwachtingen, behoeften en voorkeuren van de eindgebruiker en aspecten in verband met de omgeving.

Op dit punt, om de UCC de geselecteerde inputs te laten verwerken tot een use case, drukt u op de toets COMPUTE THE CONFIGURATION.

Als u daarentegen niet van plan bent verder te gaan met de configuratie, drukt u gewoon op de toets EXIT om het programma af te sluiten.

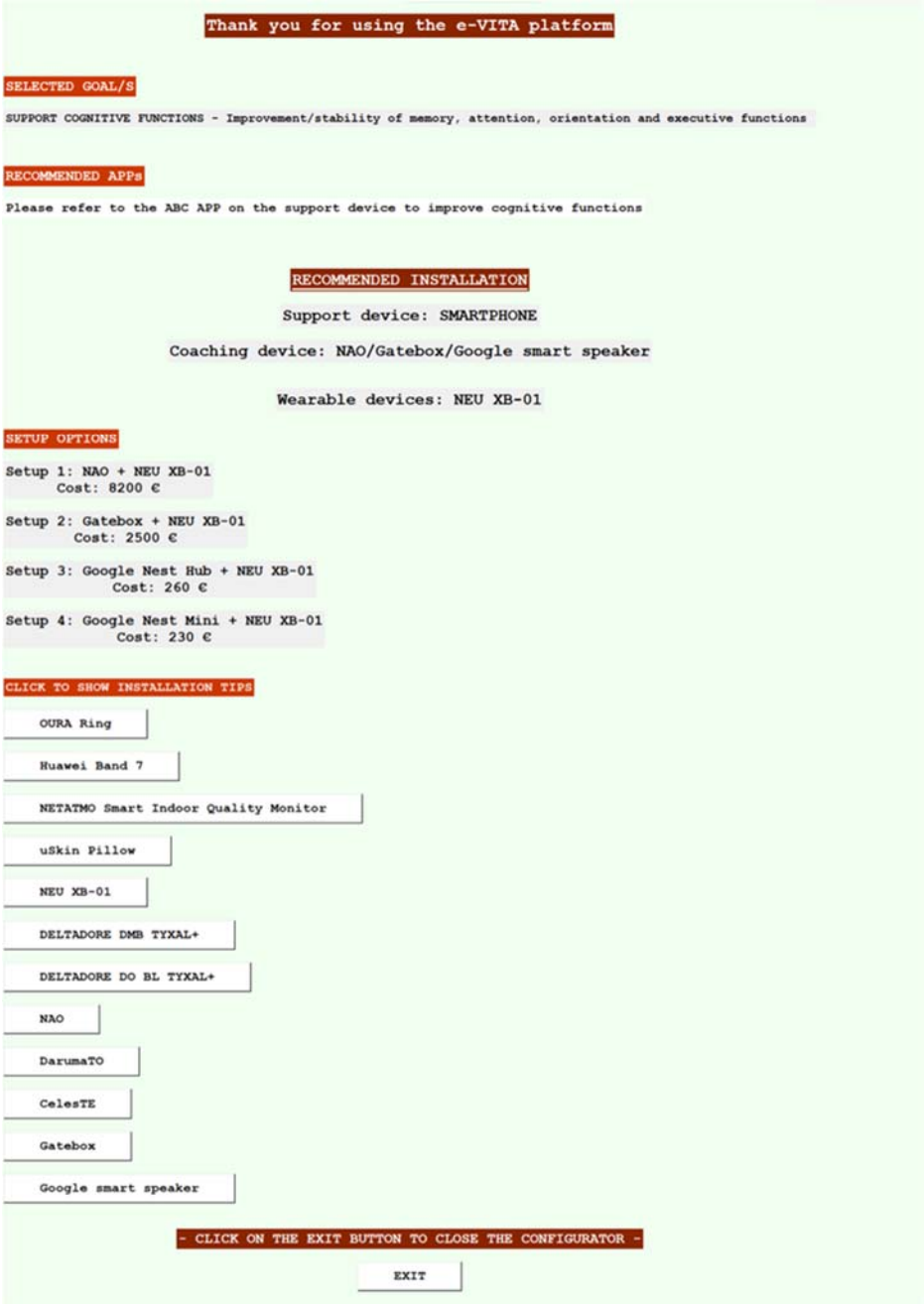
Nadat u op COMPUTE THE CONFIGURATION hebt gedrukt, verschijnt een uitvoervenster met de geselecteerde doelen, aanbevolen toepassingen, aanbevolen installatie, configuratie-opties en installatietips.

Onder het kopje RECOMMENDED INSTALLATION vindt u het steunapparaat, de sensoren en de coachingsapparatuur die de UCC aanbeveelt te installeren om het e-VITA-platform voor de gedefinieerde use case te vormen.

De mogelijke configuraties voor de use case en hun respectieve kosten worden aangegeven onder SETUP OPTIONS. De eindgebruiker kan een van de configuraties kiezen op basis van de kosten die hij/zij wil maken.

Onder het item CLICK TO SHOW INSTALLATION TIPS vindt u nuttige informatie over de apparaten/sensoren die in elk van de knoppen worden genoemd. Door op de gewenste knop te drukken, wordt een venster geopend waarin het apparaat en de installatieaanbevelingen worden getoond.

Aan het eind van het uitvoerscherm is er de knop EXIT, die ons, als we erop drukken, terugbrengt naar het beginscherm van de UCC, zodat we de vorige use case kunnen wijzigen door andere opties te selecteren en andere informatie in te voeren, of er een vanaf nul kunnen creëren, of de configurator kunnen verlaten.



Door na de configuratie op de knop EXIT te klikken om het programma af te sluiten, slaat de UCC een bestand "configuration_info.txt" op in dezelfde map waar "UCC.exe" is opgeslagen, dat alle informatie bevat over de zojuist uitgevoerde configuratie.

LET OP: telkens wanneer een configuratie wordt uitgevoerd en de EXIT-toets wordt ingedrukt, overschrijft de UCC het vorige "configuration_info.txt"-bestand. Dus, om het rapport van de laatste configuratie niet te verliezen, vergeet niet het bestand elke keer te hernoemen.