AAL PROGRAMME	**PETAL**

1. General Meeting Agenda

Date: **27.28.9.2018**
Location: Albia building https://goo.gl/maps/LcFCvKNKotq, Bilbao
C/ San Vicente, 8, 6th floor. Dpt. 8

Objectives:	1. Welcome 2. Review progress and planning for each WP 3. Deliverable preparation 4. Trial planning 5. Management, administrative and financial aspects

Participants: Apollis (Hermann Atz), Fondazione Santa Lucia (Nerisa Banaj), CNR (Fabio Paternò, Carmen Santoro, Marco Manca + Sadi), ANA Aslan (Mircea Marzan + Andrei Voicu), Ideable (Iñaki Bartolome + Gonzalo + Unai), Bartenbach (Lisa-Marie Neier + Johannes)

9:15	**Agenda, objectives of the meeting**	**CNR**

Current phase of the project
Overview of the meeting goals by the coordinator
Deliverables should be finalised asap

9:30	**D3.1 Architectural specification + demos**	**CNR/Ideable**

-For the trials we plan to use a new context manager, which is able to save the history of the events (Context History)
-Some first communication between Ideable app and the platform has been done: Ideable is now able to interpret actions
-In next days we should also integrate events generated by the Ideable app

Problems in another project during the trial
-*Problems with communications with lights*
-Mqtt seems more stable
-*Problems with localisation*
-beacons identifying the place: when the user passes by (the user has an app and uses a smartphone) s/he is located. However it is not very realistic to think that users bring with them all

the time their mobile devices. Then we looked at smartwatches (possible battery issues – to be reloaded every night?)

- Camera-based systems assume on sufficient level of light, not very reliable

In PETAL we plan to identify the user at room level, or even detect that a user is in a part of the room

Integration with GREAT luminaire: The main feature of this luminaire is the light intensity (light therapy)

Integration with Ideable app:

- Openhab should run inside the home, not outside the home
- Openhab will be connected with internet
- 2-3 scanners in a flat
- Some beacons could be on the door, others on the pill box
- Scanner detects the beacons and send info to openhab via wifi
- We need machine learning to understand the position of the user based on RSSI because e.g. walls can interfere with signals
- We can move the Adaptation Engine in the gateway directly (there is tomcat) and there will be some synchronisation points in which rules contained in the openhab gateway are sent to the adaptation engine

Open point: Smartwatches vs. scanners to identify where the user is

Ideable has also identified some further sensors they want to explore

- iBS01G Beacon for moving/vibration detection.
- iBS01H: Beacon with magnet sensor (Hall IC) for open/close detection

[…]

Lights: we use Philips hue lamps (1 lamp in each room) and 1 GREAT luminaire in the 'common room' (1 GREAT for each home)

We need soon to define the sensors that we want to consider

Hermann: 3 points to consider

-How open/close we want to be (we need to provide a number of possibilities and then the user will decide)

-Cost of the technologies (smartwatches, great luminaire)

-How much effort we need to have the system works at the first time (the deployment) – we do not need to change the electric system just plug and position, configure

Each partner needs to have a technical contact point

11:15	Technical Integration between platform and cognitive stimulation application	CNR/Ideable/All Partners

Openhab runs in the gateway (small computer equipped with raspberry) in the home. Openhab has also a visual editor

Demo of ideable showing the triggering of a rule using openhab (the sending of events is simulated) showing the turning on of a lamp

Interation of openhab with actions

For lights, the configuration for the field trials will be that there will be one Philips hue in each room and in the 'common room' there will be 1 Great luminaire. We have to ask people which is their common space

Hue:
Light intensity color temperature
Fading effect on hue depend on the model (but it is native)
Time is not supported natively
Unit of lights: lux. However, people do not think in terms of lux and then in the rule editor we should provide some qualitative specification (e.g. high, low light, dark, etc.)

Amazon Web Service (AWS) in-between that is connected with kwido mementia and with context manager

Aws lambda collects info and send info (once a day, since the info is processed by psychologists one per day or even one per week)

Mementia is not designed to send info in real time

According to how the user performs the exercises, the application adapts

Issue: the emotional status is only self-reporting. Is there any other way to derive emotional data from users? E.g. user image face expressions whether there is some outstanding emotion. However, when people are concentrated on cognitive exercises they do not express much emotions

Lights can activate people; they do not make people feel better (emotional status). If they are tired, they can be activated

Nerisa: The questions about how user feels should be asked before the training otherwise the answers could be too related to the training itself

Combine aspects related to the cognitive status of the user and aspects related to the environment

11:45	**D1.3a Usability and accessibility (in-lab) evaluation of personalization rule editor**	APOL/All Partners

Tests took place at: Apollis, Fsl, Ana, Bartenbach,

In total 35 usability tests: 25 in italy (15 in bolzan and 10 in rome); In Romania 5; In Austria: 5

Some issue in the questionnaire: some question was very specific: are you a caregiver for MCI? Some people answered NO even though they were caregivers for elderly

Disappointment of users who found quite limited opportunities in the rule editor to create rules

In Austria issues were in the natural language description some terms were in English and other in German (mixed) (case1), in other case (case2) some rules of the German gramma required changes in words (e.g. verb form: infinitive vs. present) and in word order, which were not yet supported in the editor

Solution for case1: The issue about mixed terms was that there are some static parts and some dynamic parts in the description of the houses. For instance the “User” is quite static, the “Technology” and the “Environment” parts are dynamic because one device can be connected, disconnected, moved, etc. We should translate (in different languages) the terms that come from the Context Manager

Possible solution for case2: use an external service translating the English sentence in different languages

Issues connected with the combination of AND and OR –up to now the mix between two different Boolean operators is not yet supported (e.g. parenthesis)

Gap between the conceptual level and the practical use; For the simple rules there is no problem, the problems come when they have to use the rule editor

We need to populate the rule editor according to the (house of the) specific user. There are some Rest services to register the room, the devices, the users etc

When we want to use the rule editor for a particular user at the beginning you need to ask this Rest service about e.g. the rooms associated with the considered user, or the devices associated with the specific user

This configuration for the moment is being done programmatically (there is no visual editor)

14:00	**D3.3a Personalizable Lighting System** Including integration with the platform	Bartenbach

Deliverable more or less finished

The definitions of customisations and personalisations have been proposed by bartenbach
However, from the reported definition it seems that personalisation implies machine learning
Personalisation and machine learning – it seems that personalisation necessarily imply machine learning. Bartenbach will change properly to be clear with the EC

User decision may not be that effective in the long term

From bathroom to bedroom using light stripes, with lights not disturbing the sleep - Luxometeres

Take some ‘light dosage’ if you do not go outside

If they stay at home for too much and it is sunny outside please take your light shower outside

It would be better to activate before saying them to do something

In order to have some effects, we should put lights included in the platform in all the rooms otherwise if we do not cover some rooms we can loose the control on such rooms (the elderly moves within the house)

Bartenbach will send to cnr the great luminaire for tests

Action@cnr: remove the document change log from the template

15:30	**D3.2a Monitor and Behaviour Analysis** (what do we want to monitor and analyse ?)	Ideable/All Partners

The gateway is like raspberry but more complete (tomcat, java), is like a computer

Temperature, intensity of light, motion, humidity, motion (for objects or for users) (see deliverable), e,g. medication box, door or user motion

Openhab is open source – a lot of support - Many developers – written in java
Support hue Philips family

Ideable will communicate the information about the cognitive level not in real time (as it does not change very often)

Sensors that could be integrated in the platform:

Air Humidity
Light detection
Position/room
Going in/out from house
Gas leaks
Position+time
Weather
Motion in obejcts (pill box)
Cognitive/emotional status door& window
Date/time
Fitbit (steps)
Smartwatch (heart rate)

16:00	**D4.1a Demonstrator and Field Trial Preparation** What we do before starting the trials	ANA/All Partners

The demonstrator (lights+ rule editor, sensors, openhab) will be described at a high level and then reference will be done to the various deliverables (more technical)

Face recognition: If we want to analyse the images of the person to detect emotion we need to have user consent that the image will go to the cloud to be analysed, as in the tablet this is not still possible (i.e. processing the image locally is very difficult). Tablet is the most used device by elderly. With tablet is not possible, with laptop could be possible

How we will treat the data (consent, encryption of data, ethics). The cloud could be a problem for ethics – we should be very precise about e.g. where the image will be kept, whether we will use 3rd party libraries (e.g. Microsoft, ibm)

Recruiting criteria
Elderly recruited should have wifi also able to connect outside

Every pilot should have one technical, local contact point

- ➔ Find a technical contact point. This contact point will not need programming experience, but e.g. after reading a manual (which we'll prepare) s/he will go to the houses and place the sensors, configure the rule editor, etc.

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9:00	**D4.2a Field trials paln** What we do after starting the trials	SLF/All Partners

Review of the current draft of the deliverable
Battery of psychological tests for elderly to be done before and after the field trial
MDB battery, Stroop test,…
Also some tests to be submitted to caregivers
We also want to improve the sleep – also tests on quality of sleep

Hermann: the person can have acute disease, can have dies in their family, something happens in their life (big events like e.g. acute sickness, someone might die in the family). If we have just such data (and not anything else), and we do not have control group, what should we expect from such data, how can we interpret them?

It is not perfect, it is not a clinical trial (more controlled) it is a field trial, there is some noise and confounding factors on which we do not have much control

Maybe it would be a good idea to register any big event in the life of the elderly (put some more questions?)

Or maybe it could be even better to ask directly to caregivers and elderly about their quality of life (and even compare the answers) Did they use it? Did they enjoy?
Collect the perception of users about the solution.

We can better focus on the cognitive level and not much on a broader, qualitative assessment of quality of life

Hermann: from a scientific point of view we cannot prove any cause-effect relationship

It is an evaluation in the wild, more difficult than a clinical trial

It could be the basis for future, more in-depth studies

Qualitative interviews – to talk to people involved

In theory also mci elderly can create the rules, but it depends on the person

Tablet (for end users):
It could be better to add a launcher on the tablet (when they turn on the table it comes out the petal application, with also a link to the rule editor) and also have remote control of this device if some specific problem occurs

Caregivers – they should receive notifications

Sms
Mail
notification

We plan to integrate the rule editor with a Sms platform

In the end we will have 3 persons:
1 (main) contact person (from partner responsible of the field trial), which coordinates:
A technician
A person with care expertise

9:30	**D2.2a Dissemination plans**	CNR / All partners

Linkedin; Twitter account; Facebook

AAL has a twitter account – we can use it to make them aware of the dissemination

Poster; Booth; Leaflets + flyers
Workshop – but not focused on the project
Next week we will put the new version of the web site online

10.00	**D2.3a Exploitation plans**	Bartenbach / All partners

Discussion of the deliverable draft
Some possibilities to go to the market
Target groups: Why also younger people can use the rule editor?
Our product needs some configuration, some consultancy, difficult to be thought as an out-of-the-box product.
Vtt is a consultant that works for aal. We (as a project) can ask for a business session with VTT, specifically for our project

Who is going to be the market leader for our project?
We can have different partners for different business goals
Maybe each partner can be responsible for their part, and then have agreements for the whole solution
Each company has its own business model canvas and then there is a general model canvas

10:45	**Management (Deliverables planning …)**	CNR/All partners

We should start trials in January (see gant chart) month 16

Next meeting: 21-22 January starting at lunch time h 9 (people travel the Sunday evening)
Trials will start the first week of February

M18 (march) probably we will have the mid-term review

Next point: finalise deliverable
Complete version of the deliverable
A couple of persons read and review the deliverable (1 day), 1 day to complete the version

Deliverables complete by next Thursday 4
Friday review 5
Monday 8 final version uploaded on dropbox
Then Cnr will send to the aal

List of reviewers per deliverable:
D1.3a (carmen+mircea)
D2.2.a (inaki + lisa bartenbach)
D2.3a (inaki + Fabio)
D3.1 (ideable + Johannes)
D3.2a (Fabio+ Hermann)
D3.3a (carmen + nerisa)
D4.1a (nerisa+ Fabio)
D4.2a (ana + Hermann)

The deliverables should be the core of the mid-term review

Management situation:
CNR+Apollis: (Italian research ministry): no contract yet
Ideable: they have the contract, they received the money
Ana: contract + money
Bartenbach: got the first payment and need to provide report for bartnebach activity
Fsl: they have the contract but they are waiting for the payment

Ana needs to buy equipment this year otherwise they will lose the money

Action@all: Each partner presenting slides should put the slides on dropbox