COST

European Cooperation **in the field of Scientific** **and Technical Research** **- COST -** _____	**Brussels, 24 May 2013**

COST 023/13

MEMORANDUM OF UNDERSTANDING

Subject :   Memorandum of Understanding for the implementation of a European Concerted Research Action designated as COST Action IC1303: Algorithms, Architectures and Platforms for Enhanced Living Environments (AAPELE)

Delegations will find attached the Memorandum of Understanding for COST Action IC1303 as approved by the COST Committee of Senior Officials (CSO) at its 187th meeting on 15-16 May 2013.

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MEMORANDUM OF UNDERSTANDING
For the implementation of a European Concerted Research Action designated as

COST Action IC1303
ALGORITHMS, ARCHITECTURES AND PLATFORMS FOR ENHANCED LIVING
ENVIRONMENTS (AAPELE)

The Parties to this Memorandum of Understanding, declaring their common intention to participate in the concerted Action referred to above and described in the technical Annex to the Memorandum, have reached the following understanding:

1. The Action will be carried out in accordance with the provisions of document COST 4154/11 "Rules and Procedures for Implementing COST Actions", or in any new document amending or replacing it, the contents of which the Parties are fully aware of.

2. The main objective of the Action is to promote interdisciplinary research on Ambient Assisted Living (AAL), through the creation of a research and development community of scientists and entrepreneurs, focusing on AAL algorithms, architectures and platforms.

3. The economic dimension of the activities carried out under the Action has been estimated, on the basis of information available during the planning of the Action, at EUR 68 million in 2013 prices.

4. The Memorandum of Understanding will take effect on being accepted by at least five Parties.

5. The Memorandum of Understanding will remain in force for a period of 4 years, calculated from the date of the first meeting of the Management Committee, unless the duration of the Action is modified according to the provisions of Chapter IV of the document referred to in Point 1 above.

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A. ABSTRACT AND KEYWORDS

Ambient Assisted Living (AAL) is an area of research based on Information and Communication Technologies (ICT), medical research, and sociological research. AAL is based on the notion that technology and science can provide improvements in the quality of life for people in their homes, and that it can reduce the financial burden on the budgets of European healthcare providers. The concept of Enhanced Living Environments (ELE) refers to the AAL area that is more related with the Information and Communication Technologies.

To design, plan, deploy and operate, an AAL system often comprehends the integration of several scientific areas. The Architectures, Algorithms and Platforms for Enhanced Living Environments (AAPELE) COST Action addresses the issues of defining software, hardware and service architectures for AAL, on studying and creating more efficient algorithms for AAL, particularly those related to the processing of large amounts of data and of biosignals in lossy environments, and on the research of protocols for AAL or, with more detail, on studying communication and data transmission protocols for AAL.

This Action aims to promote interdisciplinary research on AAL, through the creation of a research and development community of scientists and entrepreneurs, focusing on AAL algorithms, architectures and platforms, having in view the advance of science in this area and the development of new and innovative solutions.

Keywords: Enhanced Living Environments, Ambient Assisted Living, Internet of Things, Health Informatics, Personalised Healthcare, Complex Data Management.

B. BACKGROUND

B.1 General background

The population projections for Europe 2008-2060 reveal a notable increase in elderly population. According to Eurostat (2008), in 2010 the elderly population EU27 (over 65 years) corresponded to 17.4%, while as early as in 2060, it is expected to correspond to 29.5%. The population over 80 years of age in 2010 were 4.6% and it is expected to correspond to 12% in 2060 (Eurostat, 2008). Societies are looking for alternatives to augment current care capabilities and focus is being placed on extending healthcare facilities virtually to the home, requiring innovative use of Information and Communications Technologies (ICT) to increase the effectiveness of this dispersed care model. In Europe, healthcare services are mostly a responsibility of its member states and the healthcare

budget often accounts for a significant proportion of each state's overall expenditure.

The scope of this COST Action will be ICT applied to Ambient Assisted Living (AAL), comprising: telecommunications, robotics, sensors, networks, algorithms applied to telecommunication protocols and information management, imaging and vision, resource scheduling, data capture and care community access delivering standards in assessing quality of care (intervention and result), evaluation of care recipient interactions and wellness over time. Throughout this document we refer to AAL meaning the ICT area of AAL.

Publications in the field of AAL show that most of the authors try also to generalize their proposals into frameworks and layered models. The analysis of the deployment of a complete AAL interoperable framework within Europe is incomplete, therefore there is a correspondingly small number of solutions for AAL applications in many European countries. This COST Action will gather members from many different countries and, by effectively networking these researchers from otherwise non-overlapping disciplines, will allow such analysis to be performed, and will facilitate novel research by the rapid porting of technologies from related disciplines into AAL applications and subsequent grants. Therefore, instead of focusing on a single research problem or a single research area, the COST Action will focus on promoting the interchange of ideas between researchers from different scientific backgrounds on the subject of AAL. A COST Action in this area is the most appropriate mechanism to foster this network of scientists and Small and Medium-sized Enterprises (SME), mostly because of its informal nature, and because it does not require a formal statement of joint research, thus allowing the creation of an open space where ideas can be discussed freely, allowing for innovative approaches to new and known research problems.

References: Eurostat (2008), "Population projections 2008–2060 –From 2015, deaths projected to outnumber births in the EU27 almost three times as many people aged 80 or more in 2060 (STAT/08/119)", Press release of 25.07.2012.

B.2 Current state of knowledge

Ambient Assisted Living (AAL) area presents innovative solutions that improve the quality of life of elderly and disabled people. This very diverse set of solutions continues expanding, putting together a very comprehensive set of knowledge. Yet, a transversal problem in many countries is the user adoption ratio for these technologies. On one hand, even simple technologies with high potential for user benefits, as the Google Health platform, were discontinued due to poor user usage ratios. On the other hand, a disconnect set of medical devices, user sensors and data bases fails to deliver a comprehensive and integrated solution that truly enables a solution for a user's health and

living improved care.

In an ideal AAL scenario, ubiquitous communication requires seamless mobility while integrating a multitude of sensors and actuators, and the assurance of quality of experience for the user, at both ends of the system, the user-end and the care service provider-end. Much work exists on user mobility, however, there is a clear lack of solutions which can dynamically adapt to the context of the user taking into consideration his location and behaviour. In addition, solutions that aim at getting user information for monitoring and action are mainly focused on a single sensor within a certain well-known environment, which clearly fail to address the ideal scenario where multiple sensors and actuators need to be associated with user context and location.

Some of the knowledge on current issues that will be studied in this COST Action Work Groups is presented below. The COST Action is supported by the partners that are already working in: 1) Analysis of medical data; 2) Mesh networking; 3) Quality of Service (QoS) and Quality of Experience (QoE) as well as capacity planning analysis; 4) User behaviour analysis and network traffic classification; 5) e-Healh and mobile health; and 6) AAL in specific cases.

Recent European projects and other scientific works are focused on improving the independent living of older people with AAL solutions.

B.3 Reasons for the Action

There are multiple reasons to set up a COST Action on Algorithms, Architectures and Platforms for Enhanced Living Environments in the context of the Information and Communication Technologies (ICT). First and foremost, due to the extreme specialization of science and scientists, there is currently no opportunity to discuss subjects that need or could benefit from an inter-disciplinary approach. The mechanisms of COST are exactly what is necessary to gather around AAL scientists from different ICT areas. This network of scientists and enterprises does not currently exist in Europe. At present time there is only one place where many of the stakeholders in the AAL domain meet: the annual AAL Forum. The one taking place in Lecce, Italy, in Sept. 2011, attracted some 600 scientists, employees from care organizations, policy makers and companies. In 2012, the forum has taken place in Eindhoven, The Netherlands, where some 800-900 participants were expected. Therefore, the research community is growing, but a permanent network is missing now. This COST Action will try to contact with many national and international bodies that are interested in AAL and look for common flexible solutions that might be easily implemented in the market. As immediate benefits, it can be expected that the network of experts from different fields of the ICT area studying AAL will bring new approaches to research problems, from which new and

innovative solutions will most likely rise. The participation of several European Small and Medium-sized Enterprises (SME), some of which are part of the proponents of this COST Action will also allow that the work developed is devised, when adequate, by an entrepreneurial point of view, and thus, practical solutions will probably be developed. It is also expected that joint patents will be submitted.

Regarding the benefits at large, and taking into consideration the deliverables foreseen in the Memorandum of Understanding, these relate in particular with the scientific development of the AAL and ICT joint area, the development of a PhD curriculum, and the subsequent grant proposals generated by research initially fostered within the COST Action, among others.

The COST Action will be mainly aimed to the European economical / societal needs, and to further the scientific knowledge in Europe in this area. As previously stated, the objective of this COST Action is to expand the knowledge in the area of AAL, in particular, the knowledge in the use of ICT in AAL. This will allow the creation of novel AAL solutions, which, in partnership with the interested European companies, will be researched, prototyped and tested within the COST Action. The strategy to conquer these objectives is to develop actions that will allow the creation of a cross-research facilitating environment. The Working Groups, as detailed in this document, will carry out these actions. The Working Groups organization is also detailed, in a manner that is dynamically adjustable to changes in the members of the COST Action, but also in a manner that maximizes the throughput of each of the Working Group members.

B.4 Complementarity with other research programmes

This COST Action aims to act in a complementary manner to existing European Union programmes within the AAL discipline, which are focussed on delivery of specific scientific outputs, overcoming well-defined challenges local to each consortium. The COST Action aims to facilitate wider communication between researchers in disparate fields within AAL, and within disciplines that touch on AAL, to bring about the "pump priming" collaborations that will lead to further large-scale EU proposals within the next round of AAL funding.

There are many existing programmes in disciplines related to AAL in which technologies are being developed, which the COST Action will allow its participants to "port" into the AAL arena. For example, within analytics and bio-signal processing, the United Kingdom (UK) Engineering and Physical Sciences Research Council (EPSRC) and Welcome Trust fund an £8M programme at Oxford for a "Centre of Excellent in Personalised Medicine". This centre, in which one of the applicants is involved, has generated much work in biomedical signal processing and e-health

informatics when applied to tele-health data collected within the UK healthcare system. These techniques are suitable for deployment within the AAL field, but the COST Action is required in order to flesh out collaborations and perform the initial research work with European partners before larger projects may be initiated. Similarly, the UK healthcare system, via the NIHR (the UK NHS Institute for Health Research), funds clinical trials at Oxford for developing and evaluating signal processing algorithms for the care of patients in their own homes, after discharged from the hospital. These platforms are open-source, and will form the basis for research collaborations with European partners, if the COST Action is established in order to facilitate the initial work that is required.

The AAL Joint Programme supports R&D projects in this domain. The AAL sixth call for proposals aims at the development of ICT-based solutions which enable older adults to continue managing their paid or voluntary occupation, while preserving their health and motivation to remain active. Some members of COST community aim to contribute to this initiative.

Specific areas of cooperation between the AAL Joint Programme and this COST Action are as follows:

- PhD Schools and STSMs will allow young researcher mobility and cross research actions among researchers involved in both programmes;
- this COST Action, by not being limited in its scope to a single defined research agenda, will allow the cooperation, extension and the crossed research of the AAL Joint Programme initiatives, if viewed as necessary by the Management Committee;
- the research groups and Working Groups within this COST Action will submit proposals to the AAL Join Programme;
- finally, but not only, this COST Action will allow researchers and industry not connected to the AAL Joint Programme to participate in this area within the COST Action framework.

Other national initiatives received funding to research and develop specific AAL solutions. This is the case of Portugal's TICE.Healthy, a program that joins universities and companies, seeking to "(...) develop, integrate and test innovative technological approaches that will serve as a basis for new products and services for markets linked to the aspect of "Health and Quality of Life.""

The COST Action will invite the partners in these projects, which are by definition scoped to a national level, to allow the dissemination of results and good practices among the COST community. Again, the opportunity of having an Europe wide community of researchers will allow the maximization of the national programs' results.

C. OBJECTIVES AND BENEFITS

C.1 Aim

The main goal of this Action is to promote interdisciplinary research on Enhanced Living Environments (ELE), through the creation of a research and development community of scientists and entrepreneurs, focusing on AAL algorithms, architectures and platforms, having in view the advance of the science in this area and the development of new and innovative solutions.

C.2 Objectives

From a wider point of view, the COST Action community will jointly pursue the following objectives:

1. Research on specific AAL problems related to ICT, having in view the development of new and innovative solutions that are driven by the interest to produce marketable technological solutions that may be easily user adopted;

2. Broaden the research activities of the COST Action community in a research friendly environment while allowing more countries and different types of organizations to contribute to the AAPELE COST Action;

3. To create an ELE scientific research area.

The secondary objectives, represented by some of the expected deliverables, include:

*   organization of three scientific workshops, ideally in collaboration with the IEEE (Institute of Electrical and Electronics Engineers), the IET (Institution of Engineering and Technology), the ACM (Association for Computing Machinery) or IFIP (International Federation for Information Processing), coinciding with one of the Management Committee (MC) meetings each year after year 1;

*   organization of winter or summer schools for PhD students in years 2, 3 and 4 of the COST Action, taking advantage of local research specializations in algorithms, devices, and platforms to give students the widest possible scope to contribute towards future EU research;

- promotion of at least 5 Short-Term Scientific Missions (STSM) in the first year, and of 7, 10 and 12 STSMs in the following years;

- creation of a website to support the communication and the management of the Action, to host a Science and Technology Radar tool and newsletter, to host a Innovation Harvesting tool, and to maintain a mailing list of researchers for active discussion of on-going research topics in AAL.

C.3 How networking within the Action will yield the objectives?

All the activities within COST Action will be done by the Action partners and members, thus the means necessary to pursue these objectives will be made available by the Action members. However, the main research results will come from cross-research and from the STSMs. The resources involved in STSM research will be made available by the hosting institutions and, to some extent, by COST STSM grants.
The networking mechanisms to be implemented to achieve the objectives can be summarized as follows:

- Action MC Meetings and Technical Meetings will be organized by the Action partners. Here the research topics can be freely presented and discussed, ongoing research can be tested for viability and constructive criticism, and STSMs can be sought and offered;

- Scientific Workshops will be collocated with international conferences as well as with MC meetings. The workshops will serve to present the COST Action research results;

- STSM will be done at partnering organizations;

- The web site will allow the community to keep contact and maintain the flow of information in the periods between the COST Action meetings and Workshops;

- Periodic e-mail Newsletters will encourage partners activities;

- The PhD Schools will allow junior researchers to meet and discuss relevant topics within the AAL scientific area;

- The creation of the workshops will allow 3rd party validation of the research developed in COST Action not only during the Action but also beyond.

C.4 Potential impact of the Action

The potential impact of the Action can be summarized as follows:

- A critical mass of researchers from different scientific backgrounds will work together for 4 years, creating lasting professional (and personal) bonds;

- The "Ambient Assisted Living" concept will be broaden by means of the COST Action fostered research and studied in detail from different perspectives;

- Data from medical, network, protocol experiences will be collected and exchanged; This data, after properly anonymized, will be made available to the at-large research community in a public data repository;

- Statistical tools for data analysis will be created and tested;

- End-user profiling will be performed;

- Protocol and platform applicability analysis will be studied;

- The proposed AAL platform will be created, simulated and studied in different scenarios;

- User profiling will be achieved. This will allow QoS and QoE analysis and more precise AAL resources capacity planning.

As this COST Action joins scientists and entrepreneurs, it is expected that results from the research can be translated into commercially viable solutions.

C.5 Target groups/end users

The main target group is the research community in AAL. This community will benefit from an inclusive, coherent, cross-disciplinary Action such as this here presented.

Another interested group for this Action are network operators that can customize their services over their platforms and get services ready for the market.

Most of the participants in this Action have been researching with the operators in their countries and will promote the Action to them. Local service customization can be achieved in cooperation with operators.

The main end-users of the Action are elderly people in different countries as well as people with specific needs. Their profiles will be created based on the profiles of people from different cultural backgrounds.

The main consumers of the service might be also other organizations (public or private) that support people with specific needs. These are non-profit organizations of elder or ill people, public organizations that work under support of government etc.

The ultimate beneficiaries of this COST Action will be the European citizens who will reap the benefits of better AAL solutions.

D. SCIENTIFIC PROGRAMME

D.1 Scientific focus

The scientific areas that are important to a comprehensive and integrated approach to AAL and focused in this Action are:

1. Medical data analysis;

2. Statistical evaluation of medical data;

3. Self-similarity analysis of AAL data;

4. Sensor analysis together with protocol analysis;

5. Requirements analysis and profiling of the AAL end-users;

6. Platforms, protocols, architectures, technology analysis for AAL;

7. Quality of Service analysis;

8. Quality of Experience analysis;

9. Capacity planning analysis;

10.	Activity of daily living (ADL) detection;

11.	Context-aware architecture for AAL;

12.	Mobile health services and applications for AAL;

13.	Open calls for new research topics.

These scientific areas map to the Work Groups as follows:

Work Group	Scientific focus (item number)
Sensor Networks and Communication Infrastructure for AAL Services WG	4, 6, 10, 11, 12, 13
Requirement Analysis and Profiling WG	1, 4, 5, 6, 7, 8, 9, 10, 12, 13
Protocol and Platform Analysis, QoS, QoE, Capacity Planning WG	4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Medical Data Acquisition and Algorithms WG	1, 2, 3, 4, 10, 12, 13
User Interaction WG	1, 4, 5, 6, 10, 11, 12, 13
Mobile AAL Applications and Communications WG	1, 4, 5, 6, 8, 11, 12, 13

The most important research tasks to be deployed by the Work Groups are:

- to design and test a communication infrastructure that can integrate devices (sensors, actuators, computers, mobile devices, etc.) from an AAL service perspective;

- to research on a set of requirements for different scenarios on AAL solutions;

- to research on QoS, QoE, capacity planning, traffic and access quality of AAL platforms;

- to research on personalized, intelligent algorithms for AAL;

- to research on user interfaces and Human-Machine communication with special focus on elder or disabled users;

- to study communication protocols for medical devices that are mobile, including mobile AAL applications.

The research tasks are detailed in section D.2. The research work for these tasks will involve the researchers of the different members' research groups.

The participating academia and research institutes will foster this research in its respective laboratories.

D.2 Scientific work plan methods and means

From a wider perspective, the work plan in this Action includes, but is not bounded by, the following actions:

- Research on personalized healthcare, intelligent algorithms for AAL, algorithms for geo-localization and/or spatial-reference, algorithms for context-aware computing systems, self-similarity and fractal algorithms on AAL data and algorithms addressing issues such as privacy and portability of medical data;

- Research on machine learning algorithms (based on Bayesian methods for performing robust inference in noisy, realistic patient data). The COST Action partners are currently performing AAL-based clinical studies in which data are being collected on which to train these algorithms. The COST Action will facilitate collaboration for maximum exploitation of these rich datasets in furthering research into suitable algorithms - such as Gaussian processes, variational Bayesian methods, etc.;

- Research on new medical devices such as bio-signal monitoring devices, home monitoring devices, and alarm devices (including movement detectors, pressure and motion analysers);

- Intelligent data-analysis algorithms will be considered that can perform patient monitoring in the home automatically and that do not generate large numbers of false alarms when used in practice;

- Development of an unified communication infrastructure for ambient assisted living and smart home services, including integration of smart phones, home gateways and sensor networks, and efficient network and service management;

- Research of communication protocols for medical devices that are mobile, including issues regarding devices with multiple interfaces (each associated with different priorities and costs);

- Research on mobile AAL applications;

- Research into the development and integration of sensors and nano-sensors with AAL solutions and devices to develop "smart clothing" and "smart homes", e.g., textile sensors and electrodes, and piezo-resistive sensors;

- Research on techniques that favour the adoption of AAL solutions and methodologies by users;

- Research on the economical and societal impact of AAL solutions;

- Research on the socio-psychological aspects of AAL. The Action will output with profiling of typical behaviour from information and communication point of view;

- Research on complex event processing and multimedia middleware to manage distributed multimedia data streams generated by biomedical sensors;

- Research of intelligent data-analysis algorithms that can perform patient monitoring in the home automatically, that do not generate large numbers of false alarms when used in practice. AAL-based clinical studies are performed in which data is being collected in order to train these algorithms; the COST Action will facilitate collaboration for maximum exploitation of these rich datasets in furthering research into suitable algorithms - such as Gaussian processes, variational Bayesian methods, etc..

- Information gathering and sharing in the partnering countries;

- Research of behavioural profiling and end-users and sensors;

- Research of common tools and analytical solutions by simulations. Research of the vitality and practical applicability of the solutions;

- Research on Quality of Service, Quality of Experience, capacity planning, traffic and access quality of the platforms, and configuration/capacity management;

- Research of protocols, architectures technology transparency in time and space of the proposed solutions;

- Cooperative and individual analysis of the possible implementation. Research on the possibility for idea dissemination and market implementation;

- Research on user interfaces and Human-Machine communication with special focus on elder or disabled users;

- Cooperative and individual dissemination of the Action results.

All the data used in the research will be anonymously stored in a public repository accessible from the COST Action web site.

The research will be conducted in the scope of the foreseen Work Groups, discussed forward in the Memorandum of Understanding. The research results from the COST Action will be made publicly available to the research community at-large.

The above mentioned list results from the declaration of interests of the proposal participants at this stage, but, as the COST Actions are open by nature, allowing the adhesion of members at any stage of the Action (subject to approval and following COST regulations), the list may experience some changes and adaptations, i.e., other areas of research, either parallel or transversal to those proposed above, will be approached as collaborative partners become more familiar with the Action work focus.

The aimed milestones are described in the following table:

Milestone	Milestone objective	Milestone verification means	Milestone date
M1.1	Communication platform is online on the Internet	Web	Month 3
M1.2	Communication platform has content from the Action partners	Web	Month 6
M1.3	Requirements for AAL platforms	Report	Month 10
M2.1	End-user assessment: test group creation	Report	Month 14
M2.2	Basic AAL platform defined	Prototype	Month 20

M3.1	PhD Programme created	Report	Month 32
M3.2	End-user assessment: validation of tests on the AAL platform concluded	Report	Month 36
M4.1	AAL platform defined	Prototype	Month 40
M4.2	Standardization Activities concluded	Report	Month 47
M4.3	Final Report concluded	Report	Month 48

The scientific impact is a consequence of the expected deliverables, and includes:

- the publication of three workshop proceedings (years 2, 3 and 4);

- collaborative journal publications in journals/magazines for dissemination of the COST Action's research;

- potential collaborations with university spin-off companies and other enterprises for the transfer of resulting technology into devices that can contribute to the EU market for healthcare provision, and form the basis for clinical studies and further healthcare developments;

- development of a PhD programme in AAL that can be adapted and adopted in European Universities;

- a final report presenting results of the joint research activities.

E. ORGANISATION
E.1 Coordination and organisation

The COST Action will follow the recommended organisational features described in the "Rules and Procedures for Implementing COST Action".
The Action Management Committee will deploy four Work Groups:

- the STSM Evaluation WG;

- the Steering WG;

- the Editorial WG;

- the PhD School WG.

The STSM Evaluation WG will be responsible for the evaluation of STSM requests. This group includes the MC Chair or MC Vice-Chair and is composed of up to 5 MC members, elected at each MC meeting.

The Steering WG is responsible for the management of the COST Action, including the liaison with other programmes, and is composed of all the MC elements. The MC will elect, at its first meeting, a Chair, a Vice-Chair, a Secretary, and two Financial Rapporteurs, according to the COST Action Guidelines. The Steering WG will be responsible for the setup and management of the Action's website and the other Action tools.

The Editorial WG will include the MC Chair or the MC Vice-Chair, is composed of up to 9 members of the MC, and is responsible for the implementation of the COST Action Scientific Workshops and for the connection to the international conferences which will host the workshops. The Editorial WG will create the Technical Program Committee for each of the workshops. The Editorial WG will also be responsible for the dissemination of the COST Action results.

The PhD School WG will also include the MC Chair or the MC Vice-Chair and is composed of up to 5 members of the MC and will be responsible for the implementation of the PhD Schools. The 5 MC members will be elected at each MC meeting.

The coordination of national research will be implemented by the national coordinators who are members of the MC. It's their responsibility to extend the research network to all the interested national researchers, using the Action website as support tool. The Action website will support national mailing lists that will allow an increased communication level between the members of a national research community.

The major milestones for this Action are as follows:

- Requirements for AAL platforms;

- End-user assessment: test group creation;

- Basic AAL platform defined;

- PhD Programme created;

- End-user assessment: validation of tests on the AAL platform concluded;

- AAL platform defined;

- Standardization Activities concluded.

E.2 Working Groups

The scientific Working Groups at the starting point of the Action will be:

- Sensor Networks and Communication Infrastructure for AAL Services WG;

- Requirement Analysis and Profiling WG;

- Protocol and Platform Analysis, QoS, QoE, Capacity Planning WG;

- Medical Data Acquisition and Algorithms WG;

- User Interaction WG;

- Mobile AAL Applications and Communications WG.

Each WG will elect a coordinator at its first meeting. The coordinator will be responsible to plan and implement the WG Actions, in view of the overall COST Action goals.

Upon the first MC Meeting, and having into consideration that this is an extremely dynamic area, other WGs may be created, after proposal of any of the MC members. Furthermore, the goals and focus of these proposed Work Groups will be fine-tuned to comply with the COST Action members' current interests. A MC member may be part of zero or more WGs. A WG may be refocused or cease its existence if the WG members propose to do so at the MC Meeting.

E.3 Liaison and interaction with other research programmes

The contacts with other research programmes will be done mostly on a person to person basis or during the organized workshops. As it is already stated above, the aim is to broaden the consortia and test the solutions' vitality with almost no risk at early stage of its development.

The COST Action will establish contacts with EU and national programmes, as mentioned before,

since many of its proponents are also members of these programmes.

The liaison and interaction will be performed by the members of the MC, according to the COST Action goals.

The COST Action will also attempt to integrate the concept of "Design for All" from COST Action 219.

E.4 Gender balance and involvement of early-stage researchers

This COST Action respects the gender balance within its 40 participants, being 33% the ratio of female participants. The Action will respect an appropriate gender balance in all its activities, and request collaborative and other partners to adopt this procedure. The Management Committee will place this as a standard item on all its MC agendas.

The Action will also be committed to considerably involve early-stage researchers and this issue will be placed as a standard item on all MC agendas.

The PhD Schools, STSMs, Workshops will involve early-stage researchers. AAL studies of this Action will include specific profiling respecting gender balance.

F. TIMETABLE

The COST Action will have the total duration of four years.

In general terms, this is the expected calendar for the Action:

Activity	Year 1	Year 2	Year 3	Year 4
MC meetings	Month 1, Month 9	Month 3, Month 9	Month 3, Month 9	Month 3, Month 9
Workshops	Month 9	Month 9	Month 9	Month 9
STSMs	5	7	10	12
Project proposals	1	1	1	1
Standard proposals	-	-	--	Month 11
Publications	10	10	10	10
Annual report	1	1	1	1
Final report				Month 12

G. ECONOMIC DIMENSION

The following COST countries have actively participated in the preparation of the Action or otherwise indicated their interest: BG, CH, CY, DE, DK, EE, EL, ES, FI, FR, IE, IT, NL, NO, PT, SE, UK. On the basis of national estimates, the economic dimension of the activities to be carried out under the Action has been estimated at €68 Million for the total duration of the Action. This estimate is valid under the assumption that all the countries mentioned above but no other countries will participate in the Action. Any departure from this will change the total cost accordingly.

H. DISSEMINATION PLAN
H.1 Who?

The results from the Action can be used by research Institutes and Academia, Standards Bodies, industry (represented by manufacturers and service providers), European level, Government, regional planners policy makers and general public bodies. Most of the bodies interested in the Action results will be supposed to participate in the AAL Forum and AAL workshops. Action partners will be looking also to the bodies that are active at national level in specific country.

H.2 What?

Different target groups will use possible different way to access COST Action results. Most probably, all of them will use the web site or view general information on a public websites of partnering bodies. Part of the Action working documents will be posted on a controlled access website only for registered end-users. They will be Action participants or bodies that subscribe for newsletters via electronic communication network (Internet discussion forum, e-mail network, etc.). Research teams will be interested in publications, state of the art reports, interim reports, case study reports, proceedings, guidelines, manuals, final reports, events: workshops, seminars and conferences organised by the MC, contributions to other national and international conferences and symposia, articles in peer-reviewed scientific and technical Journals. End-users will be looking for non-technical publications and dissemination materials. The same can be valid for non-profit organizations working in the field of AAL.

H.3 How?

The dissemination activities will be done by all partners in the Action, not only using the website and newsletters that are more specialized, but mostly on an intra-WG or person-to-person basis. Therefore, starting from the very beginning of the Action, all participants will be supposed to be in contact with their local representatives and bodies as well as with international ones. Furthermore, besides the publications in the scientific journals and conferences, partners will also publish in specific fora created in the website.