



Deliverable 9.5: Project Website

30/07/2015

AIDE

Adaptive Multimodal Interfaces to Assist Disabled People in Daily Activities

Project number: 645322

Start of the project (duration): February 1st, 2015 (36 months)

Research and Innovation Action

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LEIT Pilar KET ICT

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Dissemination Level	
PU Public	X
PP Restricted to other programme participants (including the Commission Services)	
RE Restricted to a group specified by the consortium (including the Commission Services)	
CO Confidential, only for members of the consortium (including the Commission Services)	



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List of reviewers

Issue	Date	Implemented by	Control of Changes
v.0.1	16/07/2015	UMH	Deliverable redaction
V1.0	30/07/2015	UMH	Final version approval

Indicate any document related to this deliverable (report, website, ppt etc) and give file name

DOCUMENT NAMES

QUALITY ASSURANCE PLAN
DISSEMINATION PLAN



TABLE OF CONTENTS

EXECUTIVE SUMMARY 4

1. WEBSITE STRUCTURE AND CONTENTS 5

 Main page 5

 Consortium description 6

 Management Structure..... 6

 Scientific Structure and Work Packages description 7

 Deliverables and Publications 7

 Events..... 8

 Media Centre 8



EXECUTIVE SUMMARY

The main aim of the present document is to show the [AIDE website \(www.aideproject.eu\)](http://www.aideproject.eu) structure and strategy.

During the first six months of the project, the AIDE project website has been created and the initial contents have been uploaded. This website is under constant development and updated on a day-to-day basis with news and event announcements related to the ICT field.

All the consortium members will contribute actively to the maintenance and constant updating of the website. Apart from volunteer contributions with external news, event announcements, etc., the partners will make an especial effort to publish in the website any piece of news related to the AIDE project. When the news makes reference to future events where the project is going to be represented, the information will be published with sufficient anticipation and shared through the project's social networks to increase their dissemination.

For more detailed information about Website contents and Dissemination Strategy, please refer to the AIDE Dissemination Plan (D9.1)



1. WEBSITE STRUCTURE AND CONTENTS

The main structure of the website consists of the following elements, which can be accessed by tabs placed on the top of the site:

MAIN PAGE

Main page provides the overview of the project, events iCalendar, Twitter add-on and RSS channel link

The AIDE concept goes beyond the current state of the art in using a novel modular multimodal perception system to customize an adaptive multimodal interface towards disabled people needs. The multimodal interface will analyse and extract relevant information from the identification of residual abilities, behaviours, emotional state and intentions of the user, from analysis of the environment and from context factors. Finally, the human-machine cooperative system will be designed in accordance with specific user needs. A series of applications for the AIDE system have been identified across several domains in which disabled people could greatly benefit:

- 1. Communication:** The main objective is to improve the communication of severely disabled people for social autonomy. The user will be assisted in communicating with his/her relatives and friends. Communication will be provided by using standard Internet services, such as email, Skype and whatsapp and standard social networks (i.e., Facebook and Twitter). The developed system will provide support for web browsing as well.
- 2. Home Automation:** The goal is to allow severely disabled people to interact with the devices present at their smart home environments. In short, the user will be supported by AIDE multimodal interaction system in daily activities, such as turning lights, radio and television off and on, answering or initiating telephone calls, lock or unlock a door, closing or opening drapes, changing environmental settings and in medical emergency situations.
- 3. Wearable robots for assisting in ADL:** adaptively and dynamically modify the level of assistance provided by the intelligent robotic exoskeleton in accordance with specific user needs.
- 4. Entertainment:** Severely impaired people have reported that participation in normal entertainment activities, like playing a computer game or watching a movie, is an important need. Thus, a main objective is to support the user in playing computer games, in expressing his/her feelings, in playing music and/or engaging in painting and so on.



CONSORTIUM DESCRIPTION

Consortium



List of participants

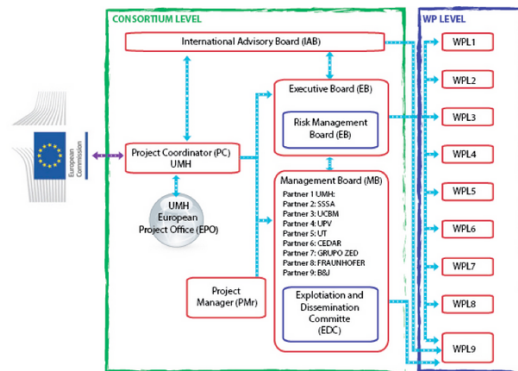
1 (Coordinator)	Universidad Miguel Hernández Nicolás García-Aracil (nicolas.garcia@umh.es)
2	Scuola Superiore Santa'Anna
3	Univesita Campus Bio-medico di Roma
4	Universidad Politécnica de Valencia
5	Universität Tübingen
6	Cedar Foundation
7	Zed Worldwide S.A.
8	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.
9	B&J Adaptaciones



May 25th, 2015

MANAGEMENT STRUCTURE

Management Structure



The partners of the Consortium have been carefully selected in order to provide the AIDE research team with a solid set of scientific competences adequate to the level of ambition of the project. They are accustomed to work cooperatively, and all of them have been involved in previous European Projects.

The Consortium has chosen the following main bodies to implement the organisational structure of the project:

- The overall Project Coordinator (PC) will be implemented by the Project Partner UMH, to provide the necessary support for project management reporting activities to the European Commission;
- The Management Board (MB) will act as the strategic decision-making body of the Consortium;
- The Executive Board (EB) will act as the supervisory body for the project execution. This board shall report and be accountable to the Management Board; The individual Work package Management Teams (WMT) will be in charge of managing all day-to-day activities, including technical work and reporting to the Executive Board.
- The International Advisory Board (IAB) will include senior members of the consortium and a few external members of high scientific relevance in the international research scenario. The IAB will provide the PC with consultancy on technical and management activities for further empowering the efficiency of the project coordination and management.

project management structure is presented in Figure.

May 5th, 2015

Each Work Package Leader will be in charge of her/his team. The work package teams may subdivide tasks to one or more partners in the Consortium. An overview of the consortium



SCIENTIFIC STRUCTURE AND WORK PACKAGES DESCRIPTION

This section shows the content of each Work Package and its distribution between the different phases of development of the project.

Scientific Methodology & WPs

The AIDE project is divided into 5 phases. Each project phase will be performed by one or more Work Packages (WPs). In the following paragraphs, the scheduled phases, a brief description of the WPs, their objectives and responsible partners will be described.

Phase I. AIDE system specifications

Involving target end users in research and development (R&D) from the very beginning is critical to ensure development of devices and services that are close to the market and most likely to be adopted and used. In this phase, it is the ambition of the consortium to use quantitative tools for example the EQSD (standardized measure of health outcome (<http://www.nurolog.org/home.html>)) or Physiological Impact of Assistive Devices.

Phase I is mainly associated with WP2 led by URM in close collaboration with CF. CF will be focused on assessing the needs, regulations and requirements of end-users, defining appropriate scenarios and managing ethical values. URM will be focused on translating values into a concept design and defining the general and specific requirements as well as expected performance objectives for all systems, sub-systems, interactions and components of the AIDE system. In addition, it is noticeable that Task 2.5 in WP2 will be active from month 6 to the end of the project and focus on evaluations and usability tests, ergonomics, technology acceptance and user experience with mock-ups and prototypes of the system. All relevant components will be tested with end-user groups at partnering institutions in the UK and Spain. This task is of paramount importance to safeguard usability, ergonomics and user experience and to maximise technology acceptance later in the process.

The expected outcomes of this phase will be: 1) the overall characterization of the AIDE system and technical specifications of its individual components; 2) the definition of ethical guidelines for active user involvement in design processes and requirements for security and liability issues; 3) the definition of the "product quality assurance plan"; and 4) the specification methodologies and scopes of testing, test procedures, guidelines and the expected results for successful validations and iterations in the R&D activities with specific focus on usability and ergonomics.

Phase II. Modular architecture for AIDE system

This phase will be focused on development of a modular hardware and software architecture supporting the development of the multi-modal interface. This phase comprises WP3 led by UCBM. A modular architecture will be developed based on the results of WP2. It aims to fulfil the following criteria: 1) it should be reliable, effective, valid, timely and complete; 2) it should ensure that data can be exchanged efficiently and effectively, through a standardized communication protocol; and 3) it should allow nesting and adapting the multimodal interface on the basis of the modules that are required in a specific application scenario and/or for specific user needs.

In this phase, the necessary hardware components to the implementation of an integrated hardware platform consisting of wearable and wireless components allowing the user to move freely in daily life environments will be developed, adapted and/or acquired. It should be noted that the integration of the already available robotic exoskeleton with a wheelchair will be performed in this phase. This is a critical step to complete the whole multi-modal interface. However, the risk of this task is low as the system is now fixed to an external support, which only has a weight-compensation system and it will be feasible to shift such support from the depicted arrangement into one included in the wheelchair structure.

The main expected outcome of this phase will be the preparation of the modular architecture of the AIDE system.

Phase III. Iterative development of enabling technologies

This phase will be focused on the development of enabling technologies for the AIDE system:

- 1) multimodal sensory processing for estimation of user's intention and affective state (WP4 led by IPV); 2) monitoring and understanding user behaviour and context factors (WP5 led by EKUT); and 3) developing a shared control system to contextualize the user's behaviour, intentions and affective state in the current environment and activity in order to support him/her in the control of an external applications and/or devices (WP6 led by SESA). The WPs involved in this phase (WP4, WP5 and WP6) will run in parallel and the development process will be iterative testing of usability, ergonomics, technology acceptance and user experience with mock-ups and prototypes of the system components in target end-users and redesigning them if necessary.

Phase IV. Integration and Validation

This phase will be focused on two interwoven activities: system integration (WP7 led by URM as project coordinator in close cooperation with all the partners) and experimental validation of the integrated system (WP8 led by CF, as a leading non-government organisation in UK working on delivering services to primarily physically disabled people in close collaboration with all the partners). Task 8.2 of WPs dealing with the definition of experimental protocols and recruitment of volunteers for clinical validation will be conducted in parallel with the final integration of the AIDE prototype.

The clinical validation of the AIDE prototype will be performed in the UK (CF) with 5-10 users with different pathologies who belong to the aforementioned groups of users with different residual capabilities. The participants will be selected to fit with the inclusion criteria defined in Task 8.1 having at least one participant in each of the proposed groups. The validation activities will be conducted during the last 6 months of the project to evaluate: 1) the performance, functionality, reliability, effectiveness of the AIDE system using the validation methodologies defined in WP2; and 2) the acceptability and usability of the AIDE system for assisting disabled people in different daily tasks.

Phase V. High impact dissemination and exploitation

This phase will be devoted to maximize the impact of the project results during the project and after the project. WP9 will be focused on this issue through two complementary activities:

1. dissemination and communication activities will be targeted at key stakeholders (such as public authorities, patient associations, etc.) and at the general public at large.
2. exploitation activities will be mainly tailored to develop an ecosystem of stakeholders to allow the proper marketing of the project results.

Scientific dissemination activities will be led by URM and UCBM in close collaboration with all consortium partners. URM and UCBM have strong expertise in the scientific dissemination of project results in journals, conferences and books, while some members of their teams serve or have served as General Chairs, Program Chairs, Editor in Chief in top level conferences and scientific journals.

ZED and B2 Adaptation will lead general public dissemination and exploitation activities. ZED is a large corporate group with presence in 63 countries having more than 400 million users and will use its commercial network to disseminate the results of the project to the general public and to key stakeholders.

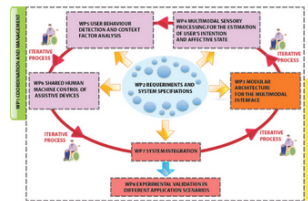
Regarding exploitation activities, ZED is particularly interested in the project results regarding high innovat

ive multimodal interfaces for mobile devices and B2 Adaptation is devoted to manufacture and commercialization of innovative products for people with disabilities. Moreover, there is as task (Task 9.7) in WP9 devoted to the involvement of leading European companies with a strong interest in the technologies developed within the AIDE project aiming at maximizing the outcome of the exploitation activities even beyond the consortium boundaries.

To summarize, the AIDE workplan is broken down in 9 WPs and each of them is divided into different tasks addressing the project general objectives. The workplan is shown in Figure 6, and it covers timescale of 36 months.

Each color is representative of a specific project phase. WP2 (in blue: Phase I) deals with the definition of end-user requirements and their translation into design requirements. WP3 (in orange: Phase II) is devoted to providing a modular hardware/software architecture suitable for further research. WP4 to WP6 (in pink: Phase III) are focused on the development of the technological modules of the multimodal interface. This project phase will be iteratively run including end user tests (Task 2.5) to refine integration of technological modules developed in the WPAE WP framework. Finally, WP8 (in red) is focused on the experimental validation of the AIDE system in a measurable and quantifiable way in real application scenarios.

WP1 and WP9 (in yellow) run along the project lifetime in parallel to the other WPs in order to ensure: i) the efficient management of the project; and ii) to maximise the impact of the project through the dissemination and exploitation of project results.



May 5th, 2015

DELIVERABLES AND PUBLICATIONS

The scientific publications related to the project and the Deliverables submitted to the European Commission will be cited here. Links to the open access publications will also be provided in this section

Deliverables and publications

PUBLICATIONS

Articles in Journals

1. *Upper-limb kinematic reconstruction during stroke robot-aided therapy*, E. Papaleo, L. Zollo, N. Garcia-Aracil, F. J. Badesa, R. Morales, S. Mazzoleni, S. Sterzi, E. Guglielmelli, Medical & Biological Engineering & Computing, April, 2015 (online)
2. *Supervised and Dynamic Neuro-Fuzzy Systems to Classify Physiological Responses in Robot-Assisted Neurorehabilitation*, Luis D. Lledo, Francisco J. Badesa, Miguel Almonacid Kroeger, Jose M., Cano-Izquierdo, Jose M., Sabater Navarro, Eduardo Fernandez, Nicolas Garcia-Aracil, Plos One (Accepted)

DELIVERABLES

- D1.1 Non-disclosure Agreement
- D1.2 Memorandum of Understanding

May 5th, 2015



EVENTS

This section will show the different events organized in the frame of the project or those where the consortium partners assist to in representation of the project.

Events

Workshop "Assistive Technologies and Neurorehabilitation", 26 Feb.



Kick-off meeting 18-19 February, 2015, Eche, Spain

The detailed agenda was:

- Welcome (2015) - Nicolás García Aragón
- Presentation of each partner (3 minutes per partner)
- General Review of Technical Work Program (2015)
- Review of Technical Work Program by the relevant WP leader.
- WP1: Requirements and System Specifications (2015)
- WP2: Modular Architecture for The Neurological Rehabilitation (University Campus, Biomimetic 20 Smart)
- WP3: Mathematical Sensory Processing for The Estimation Of User's Intention and Affective State (2017)
- WP4: User Behavior Prediction and Control for Assistive Devices (2015)
- WP5: Shared Human-Machine Control Of Assistive Devices (2015)
- WP6: System Integration (2015)
- WP7: Experimental Validation In Different Application Scenarios (2014)
- Conclusions

During this meeting, a general review of the technical work program was performed. The meeting has been mainly focused on the work program of the first year.



MEDIA CENTRE

All the materials that can be made publicly available will be placed in this section, or at least a link to the public repository where they are placed.

