

DECEMBER 2007

The total budget of the project is €3,5 million with the contribution of the EC of €2, 8 million.

The project has an expected duration of 36 months, starting at the 1st of January 2007 and ending at the 31<sup>st</sup> of December 2009.

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## MOTIVATION &amp; OBJECTIVES

- Improve - Quality of Life.
- Assist - In daily Activities.
- Facilitate & Improve Social Contacts.
- Increase the length of time of home stay before moving to an institution.

## A WEARABLE SYSTEM SUPPORTING SERVICES TO \*ENABLE\* ELDERLY PEOPLE TO LIVE WELL, INDEPENDENTLY AND AT EASE

Welcome to the first edition of the ENABLE Newsletter. ENABLE is designed to provide a better quality of life for elderly people and people with visual impairments, which may impact on their daily activities.

This Newsletter is designed to share the activities of each partner and also stimulate further interest in the outcomes among potential investors and SIGS.

The current partner list consists of 10 partners from 5 European countries all with an outstanding experience in differing fields, all driven by a common interest in issues related to the elderly population of the EU.

Within the project, we concern ourselves with certain impairments which today has a major impact on the

quality of life on the elderly person themselves, the people around them and also on the services provided by social services.

The most common dementia symptoms include loss of memory, confusion, and changes in personality, mood and behavior. Dementia usually affects older people and becomes more common with age. About 6 in 100 of those over the age of 65 will develop some degree of dementia, increasing to about 20 in 100 of those over the age of 85. Dementia can develop in younger people but is less common, affecting about 1 in 1,000 of those under 65.

([www.nhsdirect.nhs.uk](http://www.nhsdirect.nhs.uk))

In addition people with visual impairments and also people suffering from physi-

cal disabilities will be able to benefit from the expected project outcome.

A Newsletter will be published every six months and will look to include updates, feedback and comments from all who receive and



have an interest in this project.

For further information please contact

[kareem@e-isotis.org](mailto:kareem@e-isotis.org)

## WHAT IS THE 'ENABLE' PROJECT

ENABLE is a project to develop a personal, user centred system, based upon a mobile phone, that will provide a range of services for use by older persons in or out of their home.

Innovative use of technology to promote independence based upon existing

technologies but which does not require significant alterations and adaptation to homes as with 'SMART HOME' technologies. Also this is designed for use outside of the home.

The project is designed to create independence within daily tasks and activities for

the user and improve the quality of life of the user and the people involved in their care.

For further information please visit the following website:

[www.enable-project.eu](http://www.enable-project.eu)

## PROJECT OBJECTIVES

The project will develop a personal, user-centred enabling system, with services, for use by an elderly person in or out of the home, to mitigate the effects of any disability and to increase quality of life:

- independence, autonomy, mobility, communications, care and safety;
- Based on a distributed open platform, enabling other services to be added by third parties, by “plugging” into defined interfaces;

Platform includes a mobile phone, enabling the user to go visiting, shopping and general recreation,

whilst maintaining contact for help and services.

**Problems of everyday living to be addressed include:**

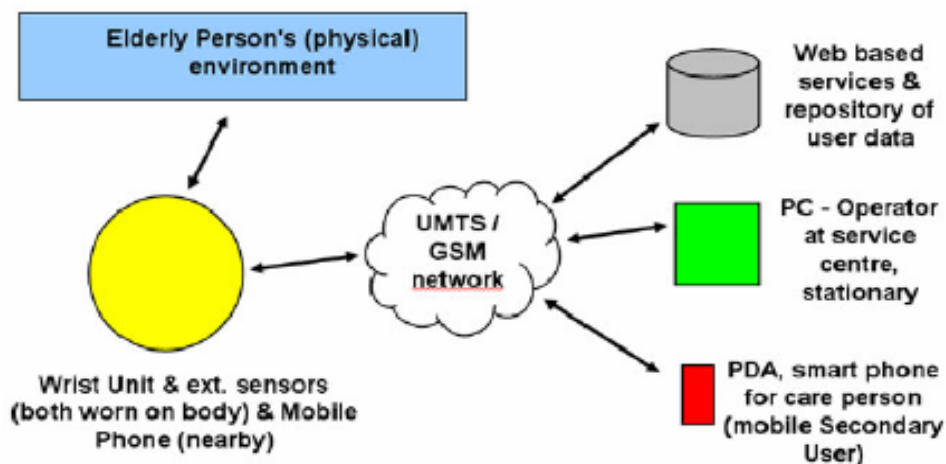
- using the phone;
- raising the alarm in emergency to get help; being monitored for health conditions, a fall, or sign of distress, with automatic raising of alarm;
- labelling of medicine, and reminding;
- turning things on and off around the house, and checking their status, e.g. for cooking.

**For a person with dementia:**

- knowing where you are, and what to do;
- recognising somebody at the door to let them in;
- being found if wandering.
- For somebody with poor eyesight: shopping for things and subsequently identifying them;
- checking details in small print. writing text for messages; reading text from messages.

The aim of the project is to develop an open and highly accessible reference architecture, to which subsystems and services can be seamlessly added according to particular needs of elderly people and their carers.

The Figure below gives an idea of how the flow of the information used to monitor people wearing the device will work.



General View of Enable System: Elderly Person wearing a wrist unit and mobile phone. The system enables direct interaction with the environment and via the network the contact to web based services, service centre operator and a care person.

Connection, Bluetooth or using mobile internet technology (UTMS, 3G or GPRS).

This will be preinstalled as a network in the house for when the user is at home, and switch to external networks once they leave their premises.

It is planned to run over either a wireless internet

## TARGET AUDIENCE

### **1. Elderly Community**

The most important audience that ENABLE will have to reach is the elderly community.

By 2025, 25% of the European population will be over 60, this target audience is immense and is growing. They are also to become the main users of ENABLE services.

### **2. Gerontology Society**

The participating end-users organisations, such as ZIVOT 90, e-ISOTIS, and Vzw Cassiers Wzc, will get in close contact with the ESA Research Network on Ageing in Europe, as the gerontology research centres have been undertaking considerable research on e.g. predicting falls via the comparison of postural sway, reaction time, the Berg balance scale and the Activities-specific Balance Confidence (ABC) scale for comparing fallers and non-fallers. Hence, they are likely to be interested in ENABLE, which will be presented to them. In addition, the aim is to publish articles in gerontology journals and newsletters.

### **3. Doctors & Medical Personnel**

Currently, medical staff in elderly homes or outpatient nurses are often confronted with emergency situations that could have been less complicated and hazardous had there been adequate warning systems.

Falls are in fact a serious problem for hospitalised elderly. Several studies estimate that 25% to 84% of all adverse events in health care agencies were due to falls (Hendrich, 1988; Morse, Prowse, Morrow, & Federspiel, 1985; Swartzbeck & Milligan, 1982), and the incidence of falls varies according to the presence of fall prevention measures (Agostini, Baker, & Bogardus, 2001).

### **4. Research Community**

The scientific and research community, represented by the University of Reading, EIWH (European Institute of Women's Health), Kompetenznetzwerk Informationstechnologie zur Förderung der Integration von Menschen mit Behinderungen (KI-I), and Vienna University of Technology (TUW) will be interested since TUW will transfer the knowledge gained during the project to education and training activities of young researchers and students.

### **5. Telemedicine Providers**

Telemedicine and telehealth service providers are seeking to provide better services by improving preventive care, as this will bring about the greatest benefit to users and reduce the burden of healthcare costs. One of the major aspects of ENABLE research is to determine the significance of

detectable conditions that could lead to falls and use the detection criteria to alert the provider of the likely propensity for a fall. Other conditions are also being investigated, such as conditions that could lead to a stroke.

### **6. SME's in Assistive Technology**

These SMEs will be crucial in further developing the ENABLE findings. In the consortium, this target audience is represented by Code Factory which will promote the ENABLE project via presentations at assistive technology conferences and exhibitions. The eventual goal is to commercialize the results of the project in order to produce a viable end-user product.

### **7. SME's - Sensing Applications**

The market for the elderly is a very lucrative one. The elderly population is growing fast with a constant pace. ABATEC feel committed to make a contribution to help people with impairments while it constantly works on research & development to launch new products in this particular market segment.

### **8. Committees & Organizations**

ETSI (European Telecommunications Standards Institute),

CEN (Comite Europeen de Normalisation) and CENELEC (European Committee for Electrotechnical Standardisation) are active in developing technology relevant to ENABLE.

### **9. Media**

Specialised media, particularly the ones addressing elderly people, will be highly interested in the outcomes of the project. Mass media can portray elderly people's abilities concerning cognition, physical strength, stamina, health, sociability, personality and work capability negatively. Television and other form of public aimed media are not so negative and we aim to capitalise on this portrayal.

For these reasons, the target group should consist of journalists working close and being friendly to elderly people.

The information media require is of a very cohesive and explanatory type and will be conveyed in a fascinating way, so that they will be interested to promote ENABLE project. To sum up, the main purpose of mass media is to inform stakeholders, not to foster cultural diversity and social harmony. It is therefore essential to choose carefully the channels of diffusion.

## PARTNER RECOGNITION



Established in 1986 the Research Group for Rehabilitation Technology (fortec) forms a leading centre of expertise for Rehabilitation Engineering and Assistive Technology in Austria. Fortec's expertise is in R&D of assistive devices for disabled and old people mainly in the areas of alternative and augmentative communication, smart living environments, user interface design, mobility support, system evaluation and validation and ethics regarding involvement of vulnerable persons. [www.is.tuwien.ac.at](http://www.is.tuwien.ac.at)

Docobo Ltd is a UK healthcare solutions provider, involved in the management and prevention of Long Term Conditions (LTC, formally known as chronic diseases).

*Towards a better quality of life™*

Docobo Ltd, is a UK company accredited to EN13485. established in 2001 from a consortium of clinicians and technologists. Docobo has been in the forefront of development of systems for the management of patients with Long Term Conditions in their own homes. A range of

products and services are provided including the doc@ HOME ® service for the management of chronic disease and the HealthHUB™ for collecting physiological, quality of life and life style data; data transfer and receipt of messages permit effective and efficient management of patients in their own homes

**Kompetenznetzwerk Informationstechnologie zur Förderung der Integration von Menschen mit Behinderungen (KI-I)**The



aim of the KI-I is the improvement in the life of people with disabilities and elderly people using information and communication technology (ICT). The KI-I can be seen as a turntable and innovation stock exchange in this area. The KI-I builds a bridge between fundamental research, application and teaching. It offers institutions and companies support in executing projects in the area of ICT to support the integration of people with disabilities in society, education and work. [www.ki-i.at](http://www.ki-i.at)

ZIVOT 90



**Zivot 90** CZZIVOT 90 is the National Czech Association that represents elderly people's interests and needs.

The main goal of the association is to create conditions for exchange, storing, dissemination of experiences, knowledge and proficiency regarding older people and we strive for improvement of the quality of life of older people so nobody need to be ashamed for his/her age. Our main programme is "Home is at Home". It is a summary of services which seek to support older people, especially those among them who are lonely and socially disadvantaged, as well as people with disabilities, in their homes, their natural environment.



Conveniently located in Northern Europe in the trendy Estonian capital Tallinn, Artec Group OÜ conceptualizes, designs and manufactures user-friendly electronics for the environmentally-aware millennium.

Established in 1998 by entrepreneurial electrical engineers with a flair for ergonomics and industrial design, Artec set the trend for what would become the Estonian high-tech sector's motto: simply brilliant! Artec Group provides all the services needed to cover for an electronic product's complete production cycle, from product idea to final product – all under the same roof. This includes conceptualization, electronic design, mechanical design and manufacturing. It is precisely this unique combination of services that favorably positions Artec Group as the leading North European original design manufacturer (ODM)

## PARTNER RECOGNITION



Cardionetics Ltd., was founded in 1995 as a result of technology transfer from Brunel University. The aim of Cardionetics is to bring about commercial benefits from research into neural computing applications in the field of electrocardiography.

The Company was directly supported by the UK government's department of trade and industry (DTI), through a competitive bidding process for a SMART award (Small -to- Medium size enterprises, Research in Technology) and SPUR (Support for Projects Under Research), and by a grant from the British Heart Foundation.



The University of Reading is one of the top 20 most research-intensive universities in the UK, a major contributor to the knowledge economy, and is internationally recognised for the excellence of its teaching on a broad range of subjects.

Research is perceived as a priority and evolving partnerships with local health care trusts, social services departments, schools and colleges will guarantee growth and development. Its research group focuses on health care and social care research.



CODE FACTORY is a Spanish programming company which was created in 1998. From that year on the company has grown, selling their products at an international level and adapting themselves to the new technologies with the main aim to have stable and high quality products.

Our company consists currently of young and dynamic international people, among them programmers, sound technicians, graphical designers, etc. The main activity of Code Factory is the creation of mobile phone software for the blind and vision impaired people. These products are currently distributed in more than 55 countries worldwide.

[www.codefactory.es](http://www.codefactory.es)



**e-ISOTIS** The scope of e-ISOTIS is to support the People with Disabilities and older persons to overcome the existing barriers and to experience an Information Society Open to Impairments (ISOTIS). It brings together people with disabilities and members of the ICT (Information Communication Technology) community from the whole globe. It co-operates closely with National Associations of People with Disabilities as well as with Universities, ICT companies and public authorities in many EU countries. e-ISOTIS is a dynamic and evolving unit, rapidly developing and due to its highly professional, motivated, and devoted staff its reputation is gradually growing.



It offers its services to elderly able bodied or not, with physical and or physiological problems. It offers 100 "living areas" provided by 2 departments: Department "De twee Linden": offering a living space adapted to the elderly that have a beginning or advanced form of dementia.-Department "De afdeling Watervliet": offering a living space to the elderly with physical needs.

In this respect, the RVT Cassiers has invested in recent years in advanced technologies and is on the look out for new systems that can improve the life of the elderly themselves, however also increasing the manageability of the elderly home.

[www.cassierswzc.be](http://www.cassierswzc.be)

## ENABLE SURVEY—HOW DO OLDER PEOPLE FEEL ABOUT ENABLE

The University of Reading has put together a team who has lead the primary investigation of users view of ENABLE. It is always important in any project to look at the target market and ensure that the product/service matches the needs of the group.

The surveys were conducted in Four EU member states (Austria, Belgium, Greece And UK) and took sample groups from across these four countries. Each group consisted of people from a range of ages and health status. From fit and healthy people aged 55 and

above to older more fragile individuals, also it was decided to include carers, and health/social care professionals, to understand the impact this would have on their daily working lives.

The focus groups were detailed and questions broke down each potential outcome from a successful ENABLE study. The survey included emotive questions (How do you feel), practicality questions (How would this benefit you), Acceptability questions (would you allow yourself to use such a service) and also the level of important per function.

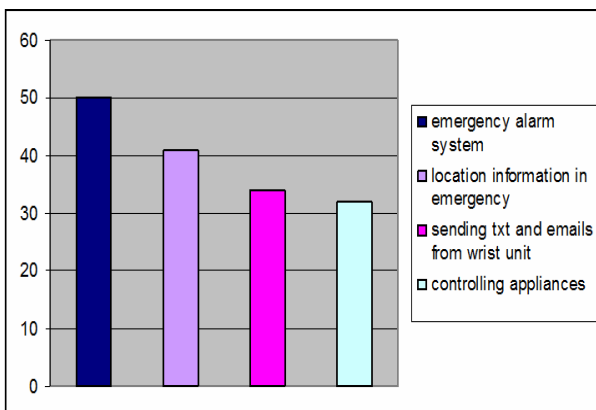
From the results, it was decided that the project will involve user trials to help develop and test prototypes and also use the same samples in the evaluation stages of the whole system.

Some of the results relating to the surveys can be found below. For further information please contact

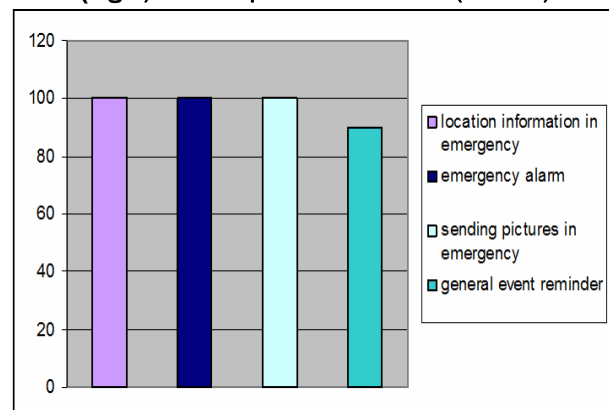
Professor Christina Victor;

[c.r.victor@reading.ac.uk](mailto:c.r.victor@reading.ac.uk)

(Fig 1) Most Important Functions (UK)

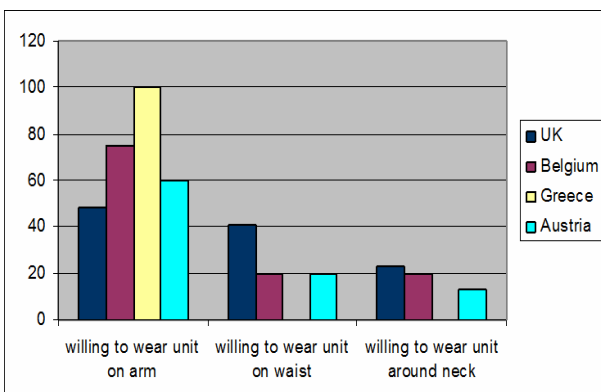


(Fig 2) Most Important Functions (Greece)

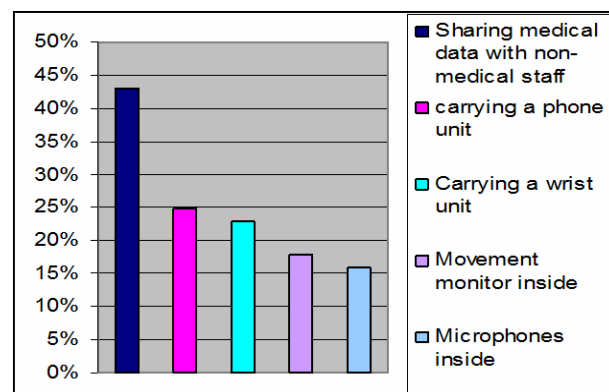


Here is a snap shot of some of the results from the survey. Fig 1 and 2 relates to cross country studies, showing a comparison between the UK and Greece regarding the most important functions perceived by the focus groups. Interestingly, the Greek focus group saw three out of the four functions as important as each other, compared to a sliding scale in the UK market. Social acceptant is quite important to all the groups as each states a preference in how they would wish to wear the device, also it is possible to see what barriers to use may exist, which may be due to self image or personal belief in how would the device really benefit the user.

(Fig 3) Acceptability Of Wearing (Enable) Device



(Fig 4) Barriers to Personal Use



## POTENTIAL FUNCTIONS OF EXISTING TECHNOLOGIES

- A telephone and alarm service which can be used away from home.
  - A GPS service which will be used to locate a wondering or lost person
  - A fall prevention and health status detection system which will recognise warning signs for various health implications.
  - A centrally controlled remote system which will be used to access electronic devices and appliances in the home, in an emergency situation
  - An identification system which can assist people with visual impairment to deal with small print
  - A service which will remind the user when to take their medication and assist in general daily activities.
- Such functions will provide help provide a more independent, higher quality standard of living for the target groups. The ENABLE device will be an integral part of daily life and activities. By reducing the risk of falling and fractures this will reduce the burden of carers, family and friends and also reduce the burden on primary and secondary health services. ENABLE will look to work closely with social services to improve health care provision. Also by improving such areas, it will help elderly people spend more time at home, independently, rather than in a care home. Such small steps can breath life back into someone who may have previously had to rely on resources provided by other people.



## Biomedical Sensors

In particular they are considering the following “proposed initial devices”, quoting from their proposal document:

- Mobile or stationary Blood Pressure monitors
- Weight scales
- Pulse Oxymeters
- Glucose meters
- Temperature sensors
- Bed and positional sensors
- Calorie counters
- Pedometers

- Heart rate monitors

Using features such as Bluetooth, it will remove the need for wires trailing the user and If bio-sensors were to have Bluetooth, the data could be sent wirelessly to the mobile phone, analysed, and, if an anomaly shows, an emergency call can be made.

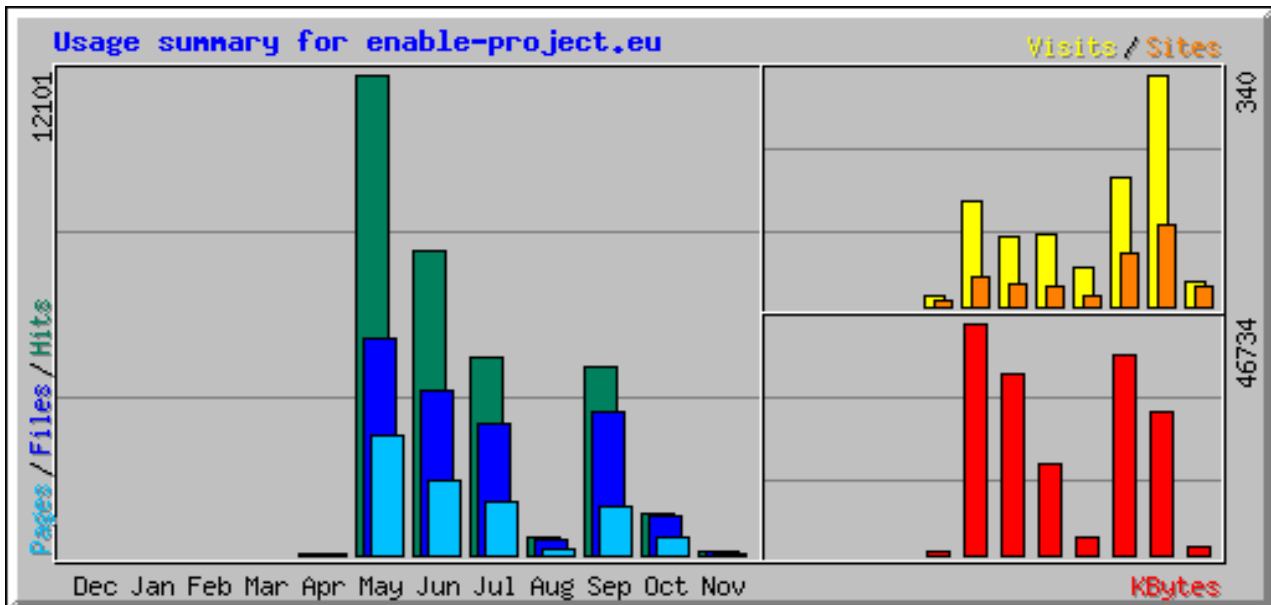
Implementation of Bluetooth is advancing, and it is now possible

to have a Bluetooth system sharing a microprocessor with a powerful real-time operating system (RTOS), allowing applications to run alongside.

This gives a great opportunity for miniaturisation of the wrist unit, which fit inline with the expected outcome of the ENABLE project

# Website Launch

Fig 1 & Fig 2



Summary by Month										
Month	Daily Avg				Monthly Totals					
	Hits	Files	Pages	Visits	Sites	KBytes	Visits	Pages	Files	Hits
<a href="#">Nov 2007</a>	14	13	9	7	31	1809	36	45	65	70
<a href="#">Oct 2007</a>	33	31	14	10	120	29047	340	441	970	1047
<a href="#">Sep 2007</a>	163	124	42	6	78	40426	188	1243	3603	4752
<a href="#">Aug 2007</a>	15	12	4	1	16	3339	56	125	379	466
<a href="#">Jul 2007</a>	159	105	43	3	29	18479	105	1348	3284	4955
<a href="#">Jun 2007</a>	272	148	66	a	34	36618	102	1859	4164	7639
<a href="#">May 2007</a>	417	187	104	5	44	46734	154	3037	5448	12101
<a href="#">Apr 2007</a>	2	1	1	0	8	831	14	18	21	38
<b>Totals</b>						<b>177283</b>	<b>995</b>	<b>8116</b>	<b>17934</b>	<b>31068</b>

## Website Information and Data Analysis

The ENABLE website has seen a large number of hits since its launch in April 2007. Fig 1, is a graph showing the number of hits the website has received and how these hits relate to files accessed and page impressions. Referring to the table above it shows a

detailed report, breaking the number of hits down to an average daily rate. The following page, shows the how the website is found, whether it be via a search engine or direct website input. What is apparent is that with the right promotion, ENABLE has the poten-

tial to reach a wide audience. Interest in this project is already very high and is going from strength to strength. Therefore the question must be asked 'what else can be done to maximize its potential'. The website is a fantastic medium to promote what ENABLE

will do, how it will do it and for whom it will provide this improved quality of life. The website has been updated recently to improve the usability and accessibility. For more information regarding the website please contact:

[Kareem@e-isotis.org](mailto:Kareem@e-isotis.org)

# Website Launch (Cont)

## Top Ten Search Referrals for www.enable-project.eu (

#	Hits		Referrer
1	3441	11.00%	- (Direct Request)
2	590	1.9%	<a href="http://www.google.com/search">http://www.google.com/search</a>
3	155	0.5%	<a href="http://mp3skylines.com">http://mp3skylines.com</a>
4	62	0.2%	<a href="http://www.e-isotis.org/projects.php">http://www.e-isotis.org/projects.php</a>
5	62	0.2%	<a href="http://www.e-isotis.org/projects_more.php">http://www.e-isotis.org/projects_more.php</a>
6	62	0.2%	<a href="http://www.google.be/custom">http://www.google.be/custom</a>
7	62	0.2%	<a href="http://www.google.co.in/search">http://www.google.co.in/search</a>
8	62	0.2%	<a href="http://www.google.co.uk/search">http://www.google.co.uk/search</a>
9	62	0.2%	<a href="http://www.google.gr/search">http://www.google.gr/search</a>
10	31	0.1%	<a href="http://search.live.com/results.aspx">http://search.live.com/results.aspx</a>

## Top five keyword searches used to find www.enable-project.eu

Top 5 Keyword Searches			
#	Hits		Search String
1	3	37.50%	enable eu project
2	2	25.00%	enabled eu project
3	1	12.50%	bridge eu project 6th framework programme
4	1	12.50%	enable wearable system supporting services elderly
5	1	12.50%	physical activity programmes in flanders belgium

## Further Website Information and Data Analysis (Cont)

Google still provides the main source of hits as a search engine, however a large proportion of users actually type in the website directly. This may be due to a number of reasons, but mainly because such people would have directly received some information regarding the project and the website.

This presents us with an excellent opportunity to improve the quality of the keyword search mechanism and further promote the website and ENABLE project via search engines.

What is proposed over the coming months is to look at ways to increase the traffic and also enrich the current information available on the website.

For further information or if you would like to pass suggestions, please contact:

[kareem@e-isotis.org](mailto:kareem@e-isotis.org)

## WORK PACKAGE AGREEMENTS

- **WP 1 - (Management)**

Management and coordination of the work of the partners in order to achieve maximum information flow and optimum technical results. In addition provide technical leadership and steer the activities at WP level through WP leaders, coordinating inter-WP flow.

**Deliverables** - D1.1/D1.2

- **WP 2 - (User Interests)**

To steer the project to produce good results for the stakeholders and also the target group ENABLE is driven towards. WP 2 will focus on investigating issues such as acceptability and usability of the pilot devices in a variety of settings with a number of sub-groups.

**Deliverables** - D2.1/D.2.2/D2.3/D2.4/D2.5/D2.6

- **WP 3 - (Commercial Interests)**

The goal is to develop plans for exploitation of the results of the project and to establish the emphasis required for different applications and system components. This workgroup will also have the responsibility to professionally prepare the market entry and accomplish the product launch.

**Deliverables** - D3.1/D3.2/D3.3/D3.4

- **WP 4 - (Requirements for Platform, Subsystems and Services)**

To establish the detailed requirements for the subsystems and services to be implemented, integrated and evaluated in phase 1 of the project.

**Deliverables** - D4.1.1/D4.1.2/D4.1.3/D4.1.4/D4.1.5/D4.1.6/D4.1.7/D4.2.1

- **WP 5 - (Design of Subsystems and Services)**

To design the subsystems and services to be implemented, integrated and evaluated in the phase 1 of the project, such as to best meet the requirements set in WP4

**Deliverables** - D5.1.1/D5.1.2/D5.1.3/D5.1.4/D5.1.5/D5.1.6/D5.1.7/D5.2.1/D5.2.2/D5.2.3

- **WP 6 - (Implementation of Subsystems and Services)**

Implementation of the designs for the subsystems and services to be integrated and evaluated in phase 1 of the project.

**Deliverables** - D5.2.4/D5.2.5/D5.2.6/D5.2.7/D5.2.8

## WORK PACKAGE AGREEMENTS

- **WP 7 - (Integration and Test for Platform Prototype 1)**

To integrate the individual devices and software developed by the project into a complete system. System testing and delivering input for the tuning of the system to reach low resource consumption and maximum reliability.

**Deliverables** - D7.1/D7.2

- **WP 8 - (Evaluation of the platform Prototype and Services on it)**

This WP is the evaluation of the platform prototype 1 and the services towards the user requirements and towards the specification.

**Deliverables** - D8.1/D8.2

- **WP 9 - (Enhance Design of Subsystems and Services)**

The objective of this WP is to enhance the design of the subsystems and services to be implemented, integrated and piloted in phase 2, meeting the requirements arising from the evaluation in WP8 and also from WP2 and WP4 which were not met in phase 1.

**Deliverables** - D9.1.1/D9.1.2/D9.1.3/D9.1.4/D9.1.5/D9.1.6/D9.1.7/D9.2.1/D9.2.2/D9.2.3/D9.2.4/D9.2.5/  
D9.2.6/D9.2.7/D9.2.8

- **WP 10 - (Implementation and Integration for Platform Prototype 2 & Enhanced Services)**

To implement and integrate the subsystems and services enhanced from WP9.

**Deliverables** - D10.1.1/D10.1.2/D10.1.3/D10.1.4/D10.1.5/D10.1.6/D10.1.7/D10.1.8/D10.1.9/D10.2.1  
D10.2.1/D10.2.2/D10.2.3/D10.2.4/D10.2.5/D10.2.6/D10.2.7/D10.2.8

- **WP 11 - (Pilot Trials of Enhanced Services on Platform Prototype 2)**

To undertake pilot studies of the subsystems and services integrated into platform prototype 2 in order to assess the level of functionality and acceptability of the enhanced services.

**Deliverables** - D11.1/D11.2/D11.3/D11.4/D11.5

- **WP 12- (Training and Dissemination)**

This WP is designed to ensure the vision, activities and results of ENABLE are widely known and understood from a commercial, technical and scientific point of view. Dissemination, communication and full interaction between all stakeholders and partners will be the responsibility of the WP12 leaders.

**Deliverables** - D12.1/D12.2/D12.3/D12.4/D12.5/12.6/12.7