Virtual and Augmented **E**nvironments and **R**ealistic User **I**nteractions **T**o achieve Embedded **A**ccessibility Design**S**
http://veritas-project.iti.gr/

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Editorial Newsletter N° 8

The VERITAS project, which developed, validated and assessed tools for built-in accessibility support at all stages of ICT and non-ICT product development, is finishing in December 2013. This last newsletter focuses on the VERITAS achievements and forward looking plans. With this last issue we hope to improve awareness of what has been done so far and to provide a basis to build on and create synergies with other stakeholders and initiatives in the future. We also bring news in the area of accessibility, which all contribute to creating more inclusive societies. We are happy to share the outcomes and exploitation plans of our project, which aim to ensure that future products and services are being systematically designed for everyone.

Enjoy the reading and do not hesitate to contact us to work together to improve accessibility and equal opportunities in Europe!

Each issue is available in accessible PDF format via:

http://veritas-project.iti.gr/category/dissemination/newsletter/index.html

A newsletter about:
- ➢ Project outcomes
- ➢ Current policy developments
- ➢ Upcoming events
- ➢ Relative initiatives

Upcoming Events
Funka Accessibility Days
8-9 April 2014
Stockholm, Sweden
International Conference on Universal Design (UD2014)
16-18 June 2014
Lund, Sweden
DRS2014
16-19 June 2014
Umea, Sweden

Farewell message from VERITAS co-ordinator

After four years of extensive and intensive research the VERITAS project terminates. The consortium designed innovative tools for product development in many industrial areas from construction to computer games. And we could prove that the implemented simulation and design experience methods are valuable and appropriate tools for designing better and more inclusive products.

These are good achievements. There is, however, still a way to go to implement an inclusive design culture in European industry. Further projects and endeavours are needed to convince stakeholders and to implement the tools in industrial processes.

We thank our newsletter readers and followers for their interest in VERITAS and for accompanying us on our steps towards a more accessible world.

Dr. Manfred Dangelmaier

VERITAS project coordinator
Head of Business Unit Engineering Systems
Fraunhofer IAO

The VERITAS achievements

Researching tools for inclusive product development, VERITAS addressed five different product domains including automotive, smart living, offices, infotainment/games, and personal health care. The technical core of the VERITAS outcome is an Open Simulation Platform. This platform allows for studying the interaction of a virtual impaired user with virtual product models and to verify their accessibility early in the development process.

VERITAS user models are based on literature data but also on VERITAS' own tests. The models take into account motor, perceptual and cognitive impairments. Even multiple conditions can be simulated. VERITAS user models were harmonized with those of other inclusion projects of the 7th Framework Programme, the VUMS project cluster. The result of the cluster work was a standardization proposal which was provided to standardization bodies and groups form implementations in standards on user models.

Besides numerical simulation with graphical representation of the results VERITAS supports virtual product experience by using virtual reality technology including haptic devices. Designers can thus experience their designs through the eyes of a user with cataracts or feel the problems of operating a gas hob with the tremor of a Parkinson patient.

VERITAS did not only propose and implement such tools. They were tested with designers from the various product domains. And they were also verified by comparing the simulation results with the experience of impaired users. This approach led to confirmed knowledge and confidence in VERITAS results.

But the project did not stop at that point. Thorough cost-benefit analyses were carried out and exploitation plans were elaborated. VERITAS has identified 15 assets for exploitations originating from the projects' work. Among them are methods, i.e. for assessing the comfort of powered two-wheeler riders and systems like the multi-sensorial measurement platform for impairment data acquisition. Most of them are however software systems around accessibility engineering by user simulation and design experience.

Two examples illustrate how the consortium will proceed. User models for accessibility evaluation by VERITAS were integrated in the 3D CAD manikin RAMSIS. This simulation software by VERITAS partner Human Solutions is widely applied in ergonomic engineering in the automotive industry around the globe. The application showcases how VERITAS contributes to the evolution of existing design and engineering tools.

The second example stems from the construction industry. In their so-called "Bauherrenkino" VERITAS partner Bauunion 1905 uses virtual technology to facilitate the interior planning process of family homes involving their clients in the customization process. With VERITAS Bauunion 1905 succeeds in offering an added value for their customers. In a first step towards the clients Bauherrenkino+ they are now able to experience their future family home interiors with the eyes of an aging person. This service is highly appreciated because prospective decisions related to ageing and accessibility have become essential for Bauunion clients in recent years.

The consortium will carry on to exploit VERITAS results in future research activities but also in industrial application and implementation.

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VERITAS in ICT 2013 Exhibition

The ICT exhibition is considered as the Europe's biggest digital technology event with almost 5000 people attending. The event took place from 6th to 8th of November, 2013 and the VERITAS project could not miss such an opportunity of depicting its technological results.

The ICT-2013 demonstration focused on the existing research prototypes and toolkits of the VERITAS project. The main target visitor-groups were ICT and non-ICT product developers and designers, accessibility experts and evaluators, public bodies and private organizations, as well as users with disabilities. Additionally, the demonstration aimed to illustrate the disabled user modeling methodology of VERITAS. The visitors had the possibility to see how structured user models can be utilized so as to simulate their behavior in simple virtual

Figure 1: The VERITAS ICT-2013 booth

environments. Moreover, virtual user models were utilized, in several demonstration scenarios, to assess the accessibility of sample ICT and non-ICT products. The visitors were given the opportunity to see how the parameters and characteristics of different virtual disabled users affect the simulation and its results.

Demonstrations included several application tools, which performed automatic accessibility assessment based on simulating the behavior of avatars interacting with virtual product prototypes. These prototype

Figure 2: The visitors are getting instructions on how the Parkinson's tremor simulator is working

scenarios included the ergonomic evaluation of car interior designs, wheelchair navigation through hospital spaces, as well as cognitive and vision impairment simulation of interaction with graphical user interfaces, etc. Moreover, a custom-made device that simulated various tremor patterns was also presented. This device could be attached to the visitor's hands and applied forces which emulated the Parkinson's tremors.

After being informed by the various booth-posters explaining the VERITAS project, the visitors could focus on the VERITAS virtual user modeling system. They were introduced into structured virtual user and task models that represented the capabilities of disabled virtual users. Visitors could see how these models are utilized in an indicative simulation scenario so as to assess the accessibility of a sample ICT application. Finally, several videos about the VERITAS platform tools and the projects' results were displayed through a large monitor during the demonstration.

Integrated CAE solution for motorcycle rider comfort evaluation presented in 2013 LMS automotive User Conference

Digital human modelling is used in the Automotive and Powered Two Wheeler (PTW) industry for (physical) ergonomic design of cars and motorcycles. Currently available models and environments allow, among others, for simulation of basic human perception (e.g. visual) and interaction with the environment (e.g. reach) but do not concern the vibrational comfort of PTW riders.

Within the VERITAS project, LMS and Piaggio have been cooperating for the development of digital models based on VERITAS Virtual User Models for ergonomic design of PTWs focusing on rider vibrational comfort. The outcome of this collaboration has been a method based on simulation that can be used to objectively evaluate the vibrational comfort during normal ride with a PTW using a detailed three-dimensional virtual "Rider – PTW Model Assembly" developed in LMS Virtual.Lab Motion and validated through a experimental test campaign.

The obtained results have been disseminated at several scientific and industrial events. Furthermore, LMS is also using its marketing organisation to reach out to the industrial public and promote this new technology at events organised by LMS, like for example the 2013 LMS Automotive User Conference, in Munich, Germany. This event has been focusing on Smart simulation and testing for optimized mechatronic system's design; it has been an industrial forum, where many Automotive manufacturers and suppliers have been present, to share and discuss key challenges and latest developments in their work domains. As such, this event has provided an excellent opportunity to also expose the new technology LMS has developed in collaboration with Piaggio for virtual rider comfort assessment, covering the link between the virtual and experimental worlds and therefore also demonstrating how to meet the economic challenges of bringing to market products "faster" and "better", by integrating virtual product development within a complex physical manufacturing process.

At the 2013 LMS Automotive User Conference, besides a joint presentation with Piaggio, also a booth has been set up, where the interested attendees have had the opportunity to take a deep dive into the technology, and to discuss the technical details. For more information: Pieve, M.; Erdélyi, H.: "Integrated CAE solution for motorcycle rider comfort evaluation", 2013 LMS European Vehicle Conference, Munich, Germany, October 29-30, 2013 (http://www.lmsintl.com/lmsconferences).

Figure 3: Snapshots from 2013 LMS automotive User Conference

CRF workshop "High Comfort and usability in automotive"

VERITAS partner CRF will organise on the 13th December a 1-day workshop focused on high-accessibility solutions for automotive interiors. This event will be held in CRF site, Orbassano, Italy and CRF and Piaggio will show their results within VERITAS activities. The target audience are engineers and designers that work on present and future solutions for interiors.

For more information you can contact Stefano BERNARD (CRF) at stefano.bernard@crf.it.

VERITAS innovation used in local project of healthcare administration

During the VERITAS project the Trento unit had the opportunity to collaborate with Dr. Guandalini, responsible for the information and assessment of assistive technologies - ABILITA at the Rehabilitation Hospital "Villa Rosa" of Pergine. The collaboration consisted in the optimization of clinical protocols for the VERITAS measurements and in recruiting volunteers for the experimental campaign held in Trento in November 2011. Furthermore, together with two colleagues of the same University, this collaboration led to the definition of a special proposal for the local healthcare administration: "AUSILIA", a new facility to enable autonomy after rehabilitation.

AUSILIA will be an innovative hospital laboratory to support the design of domestic environments empowered with ad hoc automation equipments.

The initiative will be both a research centre and a clinical service. It will embody two apartments and a home automation laboratory in which to experiment and develop new assistive technologies for domestic spaces. The project aims to increase independence, social inclusion and safety, enable the telemetry for monitoring physiological parameters while reducing the burden of public care. Patients discharged from hospital will transit inside the apartments experiencing different assistive technologies to come out with a personalized plan for home automation solutions useful for the construction or adaptation of their living spaces. Last but not least, the permanence within the training facility of different users will enable the testing and development of new solutions in the field of home automation and customized architectural / electronics / robotics assistive technologies.

Figure 4: The AUSILIA concept to foster autonomy after clinical rehabilitation

For more information you may contact Mariolino De Cecco at mariolino.dececco@unitn.it, or Mauro Da Lio at mauro.dalio@unitn.it

VERITAS partners submit paper for DRS 2014 on the simulation of Parkinson tremor

Veritas partners Indesit and Percro submitted a paper to the 2014 Design Research Society conference, which aims to foster and support a shared design discourse and create a forum where the questions that have the potential to change the way we think and do design will be discussed and debated. The joint paper entitled *"Supporting the designers to build empathy with Parkinson people: the role of a hand tremor simulating device and of user research with end –users"* focuses on the role of the Veritas tool simulating the Parkinson tremor and about the utility of the design ethnography research which aims to study the users in their real context through fieldwork. The authors describe a research study aiming to support designers in building empathy with Parkinson end users through the introduction in the design process of a hand shaking wearable device with simulates Parkinson hand tremor. They describe the experience that designers gained by wearing the hand shaking device and the insights that they expressed towards the improvement of a specific product they tested the shaking device with, such as the gas hob. They then focus on a parallel user research with Parkinson people that was conducted in the same period in order to observe how actual users suffering from hand tremor interact with the gas hobs and the kitchen environment; which constrains they experience; which concerns they express, and eventually which design opportunities arise from the lessons gained by meeting the users. Their conclusion is that the hand tremor simulating device represents and innovative tool which temporarily can convey designers some physical effects caused by Parkinson disease where no other ways are possible nowadays, but the greater understanding of the end users, and hopefully an empathic connection, can be reached when the simulated physical impairment is informed by close observation and active engagement with actual users.

For more information you can contact Laura Boffi (Indesit) at laura.boffi@consultants.indesit.com

External news & policy developments

Winners of the Vodafone Foundation Mobile for Good Europe Awards

The winners of the Mobile for Good Europe Awards, organised by the Vodafone Foundation with the support of AGE Platform Europe and the European Disability Forum (EDF) were unveiled during a ceremony in Brussels on 5 December. The first-prize winners for each of the 4 categories are: Color ADD (accessibility) which enables colour blind people to recognize and identify colours in their

everyday lives; <u>Contigo</u> (health) which supports women with breast cancer; <u>Dyseggxia</u> (education) improving the performances of children with dyslexia; <u>Bribespot</u> (mobilizing public services) for reporting and tracking petty bribes and corruption online using an interactive map.

VERITAS partner UPM won the third place in the category of accessibility developing an app called "Simple tweet", which provides all the functionalities of social networks in an accessible and simplified way.

The list of all winners is available on the contest website at: www.mobileforgoodeuropeawards.com

Videos presenting the different projects can be viewed following: www.youtube.com/mobileforgoodeurope

The winner in each category will be awarded €30,000 prize money to further develop their project, while the second place position will be granted €15,000 and third place €5,000.

An exoskeleton to help paralysed people walk again

Euronews published a video "Exoskeletons on the march" about the EU-funded project Mindwalke.: Nineteen-year-old Marius Ciustea suffers from paraplegia after a recent skiing accident. He is now paralysed from the waist down. In recent times he has found some cause for optimism. It is in the form of a new exoskeleton, which helps him to get upright and hopefully walk. You can watch the video here: http://www.euronews.com/2013/09/30/exoskeletons-on-the-march/

EC Study on Assessing and Promoting E-Accessibility

This report presents the results and conclusions from a study on assessing and promoting e-accessibility. The main aims of the study were to take stock of the extent of e-accessibility across the EU27 countries and some third countries, as well as the policy efforts that have emerged in this area. The focus was on e-accessibility in three key domains – web, telecoms and TV.

The core objective was to benchmark the current situation in relation to e-accessibility, using an appropriate set of indicators. In addition to providing evidence that can help to inform about EU policy in this field, the results may be useful for other relevant stakeholders (at pan-European and Member State levels) in their efforts to promote progress in e-accessibility across Europe. The conceptual approach and results of the study can also contribute to the ongoing efforts to develop effective monitoring systems in the e-accessibility field in Europe. You may access the report here: http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=3163

AAL Award 2013: And the winner is… I Walk Active

19 projects were selected to be part of this award, which seeks to recognize the most promising project of the Ambient Assisted Living (AAL) Joint Programme in terms of innovation, human-centric approaches to development and market potential. The winner of the 2013 edition is the project *I Walk Active* which enhances older adults' mobility. The other two finalists of the Award were *Connected Vitality*, relying on video communication/telepresence technology, and *Mobile Sage*, based on personalized assistive ICT services for everyday activities. For more information see: *www.aal-europe.eu/and-the-winner-is/*

Have a say on the roadmap for the future of technologies for ageing in Europe!

The AALIANCE2 project which aims to launch an EU-wide network, create a new roadmap and strategic research agenda, and develop relevant studies and analysis on AAL, launched a short survey aiming to improve the content of the AALIANCE2 roadmap by gathering the point of view of a wide range of persons working in organizations interested directly or indirectly in Ambient Assisted Living. The aim of the survey is to involve especially stakeholders who may be under-represented or not represented in the different workshops organized so far.

The survey is very simple (3 main questions, 5-10 min) and you will need to follow only 3 steps:
1. Have a look at the summary of the AALIANCE2 roadmap (to answer Question1 and 2) and at the Key Enabling Technologies (for Question 3) : http://www.aaliance2.eu/aa2surveydocuments
2. Answer the 3 questions survey on these documents: https://www.surveymonkey.com/s/RJ5KDDZ
3. Answer the remaining short questions about you and your organization at the end of the survey

Should you have any doubts or questions on the survey, feel free to contact Maude Luherne (AGE Platform Europe) at maude.luherne@age-platform.eu. Please note that the survey is open until the 16<u>th</u> January 2014.

European Day for People with Disabilities: Commission announces Access City Award Winner 2014: Gothenburg!

On the occasion of the European Day for people with disabilities (3 December) the European Commission announced that Gothenburg is the winner of the Access City Award 2014. The Award recognises Gothenburg's outstanding work towards increasing accessibility for disabled people and the elderly. The Award aims to encourage cities with at least 50,000 inhabitants to share their experience and to improve accessibility for the benefit of all.

The second prize of the Access City Award went to Grenoble (France) and the third to Poznan (Poland)– both cities having exhibited remarkable progress in terms of accessibility to transport, education, accommodation, shopping, culture, sports, tourism and employment.

The European Commission awards special mentions to cities that are pioneers in achieving accessibility in terms of built environment, transport, information and communication technology and public facilities and services. This year, the special mentions are given to:

- Belfast, United Kingdom, for 'Built Environment and Public Spaces'
- Dresden, Germany, for 'Information and Communication Technologies'
- Burgos, Spain, for Public Services and Facilities
- Malaga, Spain for Transport and related infrastructures

For more information see: http://ec.europa.eu/justice/events/access-city-award-2014/index_en.htm

VERITAS project meetings

The last VERITAS Plenary Meeting will take place in Braunschweig, Germany on 12-13 December 2013.

VERITAS Deliverables

VERITAS released a number of public deliverables, which you can download from http://veritas-project.iti.gr/category/news/deliverables/index.html

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