



SEVENTH FRAMEWORK PROGRAMME
FP7-ICT-2009.7.2
Accessible and Inclusive ICT

Virtual and Augmented **E**nvironments and
 Realistic User **I**nteractions **T**o achieve
 Embedded **A**ccessibility **D**esign **S**
<http://veritas-project.eu/>

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Editorial Newsletter N° 3

The third issue of the VERITAS newsletter discloses the views of some of the main industrial and research partners of the project concerning their work within VERITAS but also the expected outcomes. These interviews illustrate how the VERITAS tools will impact the four application fields and showcase the market potential of the developed technology. In addition, there is a short description of the Simulation Viewer as well as a first call for the VERITAS future events.

VERITAS would like to invite you to share your views on the use of collaborative tools like email, chat and messenger for work purposes. If you wish to help us define the preferences and barriers in using these tools you may answer a questionnaire that you can find following this link: <http://veritas-project.eu/2011/04/usage-of-collaborative-tools-among-office-workers/>

Each issue is available both in PDF and accessible HTML format via <http://veritas-project.eu/category/newsletter/>

A newsletter about:

- Project events
- Current developments
- Upcoming events

Upcoming Events

eAccess'11
 28 June 2011
 London, UK

**IADIS International
 Conference Interfaces
 and Human Computer
 Interaction 2011**
 24- 26 July 2011
 Rome, Italy

JVRC2011/EGVE,
 20-21 September 2011
 Nottingham, UK

e-Challenges 2011
 26-28 October 2011
 Florence, Italy

The added value of VERITAS tools for the targeted application areas Interviews with industrial and research partners

Having already surveyed how VERITAS can improve the lives of beneficiaries, through an insightful interview with Mr. Wim Moeyaert as end-user/beneficiary in the previous issue, the floor is now given to some of the leading industrial and research partners of the VERITAS consortium in order to discuss the added value of the project in their respective application areas (eHealth, home and work environments, automotive and infotainment sectors). The following people were interviewed for this article:

- **Alberto Rugnone**, Technical responsible of eHealthcare solutions, I+ (Italy)
- **Nikolaos Bezerianos**, Large Projects Director, BYTE (Greece)
- **Adriano Mencarini**, Innovation & Digital Design Director, Indesit (Italy)
- **Gerrit Telkamp**, CEO, DOMOLOGIC Home Automation GmbH (Germany)
- **Hans-Joachim Wirsching**, Manager Ergonomic Simulation, HUMAN SOLUTIONS GmbH (Germany)
- **Thanos Tsakiris**, Research Associate, Informatics and Telematics Institute - Centre for Research and Technology (Greece)
- **Serge Boverie**, R&D and Innovation Manager , Continental Automotive (France)



Elena Tamburini and Alberto Rugnone (I+)

First, the interviewees were asked to evaluate the expected benefit of the technology in their application field, comparing it with existing approaches. All interviewees agreed that nowadays the market lacks a comprehensive tool like VERITAS which is able to evaluate the accessibility and usability of the developed solutions based on human models. For instance, according to Mr. Alberto Rugnone (I+), while approaches based on CAD already exist in certain health-related areas, such as

medical implants and prostheses; it is hard to find solutions based on human models in the telehealth sector. Likewise, Mr. Thanos Tsakiris (CERTH-ITI) explains that in the infotainment sector current solutions aim to provide a degree of accessibility evaluation of applications that use the classic WIMP (window, icon, menu, pointing device) user interface, failing thus to extend into infotainment-specific input and output (e.g. alternative input devices, 3D interfaces and environments).

In particular in the automotive sector, lack of knowledge and data regarding the needs of older people seems to be a widespread concern for designers. As confirmed by Mr. Hans-Joachim Wirsching (Human Solutions) and Mr. Serge Boverie (Continental), VERITAS is likely to bring more focus on the ageing population.



Thanos Tsakiris
(CERTH-ITI)

Another crucial element common in all application fields seems to be the possibility to support developers at all stages of the design, from the early phases to the evaluation and optimisation. *“With the toolset developed in the VERITAS project, we will be able to evaluate and optimize a domotic system, so it will fit perfectly to the user’s needs. And we will be able to do this long before the system is installed. This will help us to save installation costs and to create better results”* notes Mr. Gerrit Telkamp (Domologic). *“When hardware mock-ups are tested with real subjects the designer has only a limited range of possibilities to change the design”* adds Mr. Hans-Joachim Wirsching.



Economisation of time and resources, allowing to design personalized user interfaces while maintaining the core of the solution is one of the main expectations arising from the VERITAS project. Currently designing based on feedback from real users requires consecutively testing, redesign and reassessment of the changed features. Thanos Tsakiris describes the VERITAS tools as an iterative process giving the company access to an extensive database of virtual user models and allowing running simulations of any part of the product with a multitude of virtual users, inexpensively and rapidly through instant assessment. As a concrete example, Mr. Adriano Mencarini (Indesit) believes that the VERITAS guidelines could improve the design of home appliances with large moving parts like dishwashers or fridges for users with motor impairments. People with cognitive disabilities

would also be able to benefit from user interfaces with advanced functionalities, in oven cooking programming for instance.



Reduced designing time, increased acceptability and the possibility to address a wider market are without any doubt important incentives for the industry to be engaged in such a project. Besides, as Mr. Nikolaos Bezerianos (BYTE) mentions, gaining thorough knowledge in the area of usability evaluation using virtual reality tools will create a competitive market advantage in the future. As expected, networking opportunities also count among the reasons why the industry is interested in VERITAS. Benefiting of the knowledge produced by laboratories and public research institutes as well as widening possibilities of collaboration with

industries in other application areas are equally important advantages for Mr. Serge Boverie. Mr. Hans-Joachim Wirsching further explains that without VERITAS, due to the high investment risk, it would be impossible for his company (Human Solutions) to extend the ergonomic design tool RAMSIS for vehicle manufacturers, to match the requirements of older customers.



Besides the final results of VERITAS, partners have also identified

several collateral outcomes that are important for their application field. For instance, VERITAS affords the opportunity to I+ company to explore integrated solutions in the area of home automation and eHealthcare, while the development of ergonomic and accessible office workspaces may develop as a niche market for BYTE. Indesit sees VERITAS as a way to further develop its methodologies on virtual reality and body tracking for household appliances reaching a higher degree of efficiency and precision.

Cross application scenarios, such as using environmental information collected by domotic devices to make a statement on the health status of a user, are of great interest to Domologic. Continental, which provides vision-based devices to supervise the activity of the subjects in the multi sensorial platform, foresees enhancing its know-how about vision technologies for in-vehicle monitoring and using the developed tools for real time application supervision inside future mass production HMI (Human Machine Interface), including user movement recognition. For CERTH-ITI, *“One possible application of the user modelling research, task analysis and virtual user simulation could be the development of more advanced computer controlled NPCs (non-player characters) in games that can automatically adjust their behaviour based on the user model loaded. This can result in infinitely customizable game experiences tailor-made to accommodate users of varying capabilities through a unified methodology. The same goes with automatically adjusting difficulty levels of games based on the provided user models”.*

Partners anticipate important market opportunities for VERITAS due to the global attention to universal accessibility, as stated by Mr. Bezerianos. According to Mr. Mencarini, VERITAS also paves the way to face new market challenges as a result of the ageing population. In Germany, car manufacturers understand the need to adapt vehicle designs to the needs of older people while containing the development costs, giving good chances to the VERITAS tools to be purchased and used by car manufacturers, notes Mr. Wirsching. Mr. Tsakiris perceives the financial burden of adopting VERITAS as minimal, since the majority of the technologies developed by the project will be made available as open-source. For Mr. Telkamp, the “return of investment” lies in the better and competitive products that can be offered to the customers.

If you wish to read the full responses of the VERITAS partners please visit our website.

SAVE THE DATE!

The second edition of the VERITAS Workshop and User forum will coincide with the Joint Virtual Reality Conference (JVRC) 2011, which will take place on **21-22 September 2011** in Nottingham, UK. These two events will provide the opportunity to a wide range of stakeholders from the developers’ and the beneficiaries’ side to witness the interim outcomes of the project and discuss with the VERITAS consortium on further developments. More information will soon be available on our website.

The VERITAS Simulation Viewer

The **Simulation Viewer** is one of the main tools that are being developed as part of the Veritas project targeting designers and developers in order for them to assess accessibility on their designs, the other two being the **Virtual User Model Editor** and the **Simulation Model Editor**.

Using the Simulation Viewer, designers or developers of a new product in the Automotive, Workspace, Smart Living Spaces or Personal Healthcare areas can load a Simulation model and a Virtual User model they have created in the Simulation Editor and Virtual User Model Editor respectively and see how their design will be used by the virtual user.

A Simulation model is a file describing the tasks that need to be performed within a specific application context and involving abstract definitions of associated modalities and objects.

A Virtual User model, on the other hand, is a file describing the characteristics of the user that will be performing these tasks. These characteristics include anthropometric parameters, impairments and personal preferences.

The Simulation Viewer consists of 4 main areas: A menu and toolbar that contain the commands and options available to the designer; a 3D viewing area where the designer can watch the simulation as it is being performed; a panel that shows the task hierarchy and the status of each task and finally; two extra windows that display the virtual user's vision for each eye.



The Veritas Simulation Viewer

The designer first loads a scene model (e.g. a car interior), then a task model, that describes what the virtual user will perform in the scene and with which objects to interact (e.g. opening the passenger storage compartment) and finally, a virtual user model that describes that characteristics of the virtual user in terms of gender, age, physical attributes, impairments, etc. Once the 3 models have been loaded, the designer can choose the level of simulation to perform.

Veritas supports 3 levels of simulation: Static, Kinematic and Dynamic (Levels 0, 1 and 2 respectively in the viewer).

- In level 0, the accessibility of the design is only checked against the final task goal without taking into account any intermediate steps the virtual user may need to take in order to reach this goal.
- In level 1, the intermediate steps are being simulated based on the virtual user's range of motion without taking into account any forces that may need to be applied by the virtual user.
- Finally, in level 2, the simulation is fully dynamic, based on the virtual user's ability to exert the forces needed in order to perform the tasks.

The designer can then run the simulation and receive feedback on the success or failure of the tasks, with information presented in case of failure that describes the reason why the task was not completed. In case a simulation is not successful, this means that for the virtual user the designer chose to test the design against, there are accessibility issues to be resolved. The designer can then improve on the design based on the feedback provided by the Simulation Viewer and perform a new simulation until the task is successfully performed by all the virtual users the designer wants to be able to use the new product.

VERITAS Public Deliverables

VERITAS released a number of deliverables, which you can download from <http://veritas-project.eu/deliverables/>:

- D1.1.1 UCD-based user requirements extraction (M6)
- D1.1.2 UCD design guidelines for applications development (M12)
- D1.6.1 Implementation of VERITAS virtual user model platform (M12)
- D1.6.2 UIML/USIXML task modelling definition (M12)
- D1.6.4 User Model Interoperability Requirements (M12)
- D1.7.1a Final version of VERITAS Use Cases and Application Scenarios (M12)
- D1.7.2 Task analysis per application area (M12)
- D2.7.1 VERITAS interaction manager architecture definition (M12)
- D4.1.3 Project Presentation and Project Description Leaflet (M1)
- D4.1.4 VERITAS Ethics Manual (M5)
- D4.3.1a Dissemination plans and materials (appendix of PR reports, Report on raising public participation and awareness) plus leaflets and posters (M6)
- D4.3.1b Dissemination plans and materials (appendix of PR reports, Report on raising public participation and awareness) plus leaflets and posters (M11)

Following deliverables will be released in the months to come:

- D1.3.1 Abstract physical models definition (M12)
- D1.4.1 Abstract Cognitive User models definition (M12)
- D1.5.1 Abstract Behavioural and Psychological User models definition (M12)

Open call for expert

Partner CERTH/ITI of VERITAS FP7 project launched an open call for expert.

The VERITAS project is implementing specific methodologies and tools for Virtual User modelling based on sparse data collected via extensive literature research, guidelines analysis and measurement campaigns for collecting data from real users.

An open call for an expert has been launched for supporting the creation of the Virtual User model generator module of VERITAS. Expertise is required in the area of statistics and especially on the synthesis of stochastic models of Virtual Users based on sparse measurements.

The duration of this task is estimated to 10-12 months (starting on the 1st of June 2011) with a corresponding reimbursement of up to 18.000 €.

Interested experts are kindly requested to submit their detailed CV to the following email address: moustak@iti.gr.

1st Pan-European VERITAS Workshop on 30 November 2010 – Presentations available

All presentations of the 1st Pan-European VERITAS Workshop on 30 November 2010 can now be downloaded via <http://veritas-project.eu/category/news/veritas-events/user-forum-veritas-events-news/>.

VERITAS project meetings

The fourth VERITAS Plenary Meeting took place in Basel, Switzerland on 14-16 March 2011 at the premises of UPK/COAT-Basel.

The fifth VERITAS Plenary Meeting will take place in Santorini, Greece, on 6-8 June 2011.

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