



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/>

Starting date: 1 January 2010
Duration: 48 Months



Editorial Newsletter N° 4

As VERITAS reached two years of activities, it is time to share some interim project results and take stock of the feedback received during the latest VERITAS events: the User Forum and the Workshop that were held in Nottingham in September 2011. At the political level the European Year 2012 and the proposed EU Accessibility Act is the momentum to achieve tangible results for products and services accessible to all. In its fourth newsletter the synergies between VERITAS and other relative initiatives become apparent, as VERITAS informs its readers on external news and events in the area of Accessibility.

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

A newsletter about:

- Project news
- Current policy developments
- Upcoming events
- Related initiatives

Upcoming Events

**Innovation in Healthcare
 without borders**
 16-17 April 2012
 Brussels, Belgium

**Universal Design 2012
 Public space: Inspire,
 Challenge, and Empower**
 11-13 June 2012
 Oslo, Norway

ISG*ISARC2012
 26-29 June
 Eindhoven, The
 Netherlands

**13th International
 Conference on
 Computers Helping
 People with Special
 Needs**
 11- 13 July 2012
 Linz, Austria

2nd Pan-European VERITAS User Forum

20th September 2011, Nottingham UK



The **2nd Pan-European User Forum** of the VERITAS Project took place in Nottingham on the 20th September 2011. This half-day meeting attracted 35 participants from all over Europe and provided a platform to discuss the project development mainly with beneficiaries (older people and people with disabilities), while the next day the VERITAS workshop was attended solely by designers and developers. The VERITAS Consortium had constructed a program that allowed beneficiaries to gain a good understanding of the project during the plenary session and gave them sufficient time to actively participate, splitting the group into two working sessions. The majority of the attendees came from user organizations, while the

academic community was also involved in the meeting.

Building on the 1st User Forum where participants were presented with the use cases and scenarios, during the Nottingham meeting beneficiaries provided their comments on the task analysis. Engaging the beneficiaries in this important step for the creation of the VERITAS simulation environment analytical exercise, ensures that the VERITAS task analysis reflects reality in the studied application areas and allows the VERITAS Consortium to cross-check its methodology and its findings.

The technical partners also shared some simulation demos which were very welcomed by the audience as they gave a concrete idea of how the VERITAS tools will work in practice. Presentations, images and videos from this event are available in the VERITAS website through this link: <http://veritas-project.eu/2011/09/successful-2nd-user-forum/>.



2nd VERITAS Workshop in the frame of the Joint Virtual Reality Conference 2011

21st November 2011, Nottingham UK

The workshop “Accessibility Engineering with User Models, Simulation and VR” was successfully organized in the context of the [2011 Joint Virtual Reality Conference on 21 September 2011, Nottingham UK](#). The workshop chaired by Manfred Dangelmaier (Fraunhofer IAO, Stuttgart, Germany), and which took place on Wednesday afternoon 21 September 2011, gathered a wide array of almost 40 experts and users in the area of Simulation and Virtual Reality, and showcased relevant projects and initiatives in the area of accessible design and simulation for automotive, home, working environment, infotainment and ehealth application domains.



Following papers were presented (the hyperlinks will bring you to the presentations):

- Dimitrios Tzovaras et al.: VERITAS – [An open simulation platform for immersive and non-immersive accessibility engineering](#)
- Sue Cobb, Belinda Lange: VR in rehabilitation – examples and challenges
- Mauro Da Lio, Mariolino De Cecco, Francesco Biral, Daniele Bortoluzzi: [How do human beings move? A lesson from driver models. State of the art and ideas concerning the planning of human movements.](#)
- Yehya Mohamad, Pradipta Biswas: [Standardisation of user models for designing and using inclusive products](#)
- Manfred Dangelmaier, Matthias Bues et al: [A VR application for planning processes for nursing homes](#)
- Christian Schönauer, Thomas Pintaric, Hannes Kaufmann: [Full body motion capture a flexible marker-based solution](#)

The event was also live tweeted.

VERITAS at 13th International Conference on Computers Helping People with Special Needs (ICCHP 2012), July 11-13, 2012, Linz, Austria

Our following events are planned to take place at the 13th International Conference on Computers Helping People with Special Needs (ICCHP 2012), organised on July 11-13, 2012 (Pre-Conference July 09-10, 2012) at the University of Linz, Altenbergerstraße 69, 4040 Linz, Austria:

- VUMS Special Thematic Session: This STS calls for papers and presentations of: research and development work; prototypes and products; concepts and; evaluation of usability and applicability of generic interoperable user models that describe the relevant characteristics

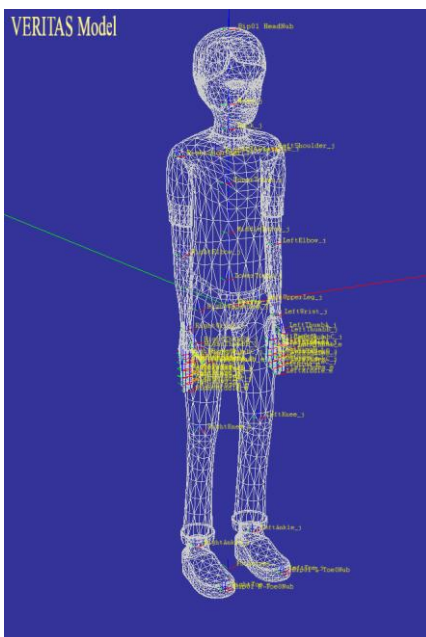
of users, who will interact with products and user interfaces. These include physical cognitive, and sensory attributes, habits, preferences and accessibility capabilities.

- VUMS workshop: This workshop presents prototypes and discusses concepts of generic interoperable user models that describe the relevant characteristics of users, who will interact with products and user interfaces. These include physical cognitive, and sensory attributes, habits, preferences and accessibility capabilities. With such a model designers can define as many user interaction profiles as needed to address the whole range of requirements from a target population. It will also help designers and developers to maximize the level of accessibility of products and services by providing a comprehensive set of Human Factors design guidelines, which could be used in virtual spaces to visualize accessibility and usability issues.

Registration details can be found on:

- Link to STS page: <http://www.icchp.org/node/349>
- Link to ICCHP workshop page: <http://www.icchp.org/node/348>

Developments in the VERITAS Simulation Viewer



In the past 6 months a lot of improvements and new features have been added to the Simulation platform, the **Simulation Viewer** application and the **Simulation Model Editor**. Currently, 70-80% of the functionality of both applications is ready and demos involving most application areas are in development. The main new features of the Simulation Core (and therefore supported in both the Simulation Viewer and the Simulation Editor) are the following: Path-finding for gait simulation, Cal3D support (import), Human factors support for best posture simulation, restructuring of the simulation framework for optimization and editor support, gasp module support, LookAt module support, sitting support through an elaborate POI and IK-Chain system. Some of these features were developed in order to support the development of the now functioning but still very much in development **Simulation Model Editor**.

The Simulation Editor is the main tool that will be offered to developers and designers, to facilitate the creation of simulation scenarios for accessibility assessment. The creation of scenarios involves Scene Model adaptation, Simulation Model adaptation and Humanoid Model adaptation.

The features supported for Scene Model adaptation so far are:

- Import Scene: The user loads a 3D scene in a supported format;
- Add, Copy, Paste, Delete objects in the scene graph;
- Set 3D object as Moveable or Static: A 3D scene consists of 3D objects that are only visual. The user can appoint a 3D object to be static or moveable. Initially all objects are considered Static;

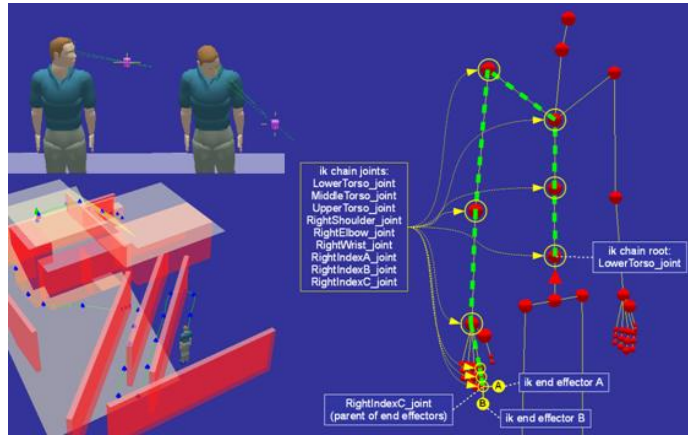
- Assign parameter values for Static and Moveable objects;
- Add POI Sets and POIs to Static and Moveable objects;
- Add DoF Chains and DoFs to Moveable Objects.

The features supported for Simulation Model adaptation so far are:

- Abstract Task models are imported and used for the adaptation;
- Motor Task rules can be added, removed and edited.

Finally, the features supported for Humanoid Model adaptation so far are:

- Import Humanoid: The user loads a male/female/child humanoid in a supported format;
- Posture Editor: The user loads can load/create/modify and save postures that define specific actions.



Testing the Multisensorial Platform in local sites



The aim of the developed **Multisensorial Platform** is to provide the technological infrastructure for the capture of user motion in each of the application contexts. The next step is to conduct all the measurements and observations needed, in order to collect data required for the iterative testing and fine tuning of the abstract user models. These measurements took place in October-December 2011 in Bulgaria, Greece, Italy, and UK. A group of older people and people with disabilities

were recruited to perform a set of biomechanics **measurement sessions**. The first session of tests was carried out in the clinic "Ulivella and Glicini" of Florence between 3th and 7th October 2011.

Twenty-nine persons with different disabilities were measured; each subject performed a list of actions (workflow), each workflow was defined to capture a specific list of parameters; a document to ensure that the measures are consistent has been written (methodology of measure), and the actions included into workflow need to be performed as described in the document.



Some examples of workflows are described below:

Workflow “Gait Parameters”:

Task ID	Task Name	Task Description	Sensors Involved	Parameters Covered
1	Gait Pass	Subject is requested to walk in a straight line walking Left 2 Right	Motion Tracking Knee Sensors	Gait Parameters (all) Lower body Joint Angular velocity (Knee only)
5	Knees	Subject standing bending knee as much as possible.	Knee Sensors	Knees Flexion / Extension
6	Hip	Subject standing executing flexion-extension and lateral movement of the hip as much as possible.	Inertial Platform	Hip Flexion / Extension

Workflow “Torso parameters”:

Task ID	Task Name	Task Description	Sensors Involved	Parameters Covered
1	Neck flexion / extension:	An inertial platform is placed in a forehead band and used to monitor simple sagittal flexion/extension of the neck while the subject is standing.	Inertial Platform	Neck lateral bend
2	Torso Sagittal flexion	An inertial platform is placed on the chest by using an adequate band and used to monitor simple sagittal flexion of torso.	Inertial Platform	Torso Sagittal flexion

Workflow “Torque and Force Parameters”:

Task ID	Task Name	Task Description	Sensors Involved	Parameters Covered
1	Fitts’ task	Execute “Fitts” test	Force Panel	a = linear model intercept [s]; $1/b$ = linear model inverse coefficient, i.e. the Index of Performance [bit/s].
2	Human Transfer Function	Execute “Human transfer function” test	Force Panel	Gain Cut frequency [Hz] Delay [ms] Noise RMS and PSD
3	Force & Position Recording	Execute “force-position” test	Force Panel	Delay [ms] Gap between touch position and target [pixel] applied force [N]
6	Push Force Test	Subject is asked to push the joystick handgrip, applying the maximum strength and trying to maintain it as long as possible.	Joystick	Push Force
7	Pull Force Test	Subject is asked to pull the joystick handgrip, applying the maximum strength and trying to maintain it as long as possible.	Joystick	Pull Force
8	Reach Test	Subject is requested to perform a “Reach envelope” test	Video	Hand position [m] Hand velocity [m/s] Elbow position [m] Arm characteristic vectors [m/s]

The sites where measurements have been conducted are:

- Trento: 21-25 November 2011 (UNITN)
- Newcastle: 5-9 December 2011 (UNEW)
- Thessaloniki: 12-16 December 2011 (CERTH/ITI)
- Plovdiv: 17-21 December 2011 (MCA)

VERITAS papers and publications

Papers

Following papers were or will be published so far:

- Nicola Cofelice, Roberto Zanni, Davide Locatelli, Alessandro Toso, David Moreno Giner, Jian Kang, Stijn Donders, Vibrational analysis of a multibody virtual dummy for car and motorcycle users, IMSD 2010, The 1st Joint International Conference on Multibody System Dynamics, May 25-27, 2010, Lappeenranta, Finland
- Nicola Cofelice, Davide Locatelli, Roberto Zanni, Alessandro Toso, David Moreno Giner, Jian Kang, Stijn Donders, A multibody virtual dummy for vibrational analysis in car and motorcycle environments, ISMA conference on Noise and Vibration Engineering (ISMA2010), 20-22 September 2010, Leuven, Belgium
- N. Kaklanis, P. Moschonas, K. Moustakas and D. Tzovaras, "Enforcing accessible design of products and services through simulated accessibility evaluation", International Conference on ICT for ageing and eInclusion, CONFIDENCE 2010, Jyväskylä, Finland, December 2010.
- M. Kirchner, M. De Cecco, M. Confalonieri, M. Da Lio, A joint force-position measurement system for neuromotor performances assessment, IEEE Medical Measurements and Applications, Bari, Italy, 30-31 May 2011
- Caterina Calefato, Romina Catani, Leandro Guidotti, Karel Van Isacker, User Requirements For Supporting The Accessible Design Process: Survey Results In The Framework Of Veritas Project, IADIS International Conference Interfaces And Human Computer, Interaction 2011, Rome, Italy, 24- 26 July 2011
- Fotios Spyridonis and Gheorghita Ghinea, 2D vs. 3D Pain Visualization: User Preferences in a Spinal Cord Injury Cohort, HCI International 2011, Orlando, Florida, USA, 9-14 July 2011
- N. Kaklanis, K. Moustakas and D. Tzovaras, "A framework for automatic simulated accessibility assessment in virtual environments", HCI International 2011, Orlando, Florida, USA, 9-14 July 2011
- M.Fontana, M.Carrozzino: VR interaction tools for motor impairment simulation, IADIS International Conference Interfaces and Human Computer Interaction 2011, Rome, Italy 24 – 26 July 2011.
- Kunc, L., Slavik, P.: Corrected Human Vision System and the McGurk Effect, HCI International 2011, Communications in Computer and Information Science 174, pp. 345 – 349, Springer, 2011
- N. Kaklanis, K. Moustakas and D. Tzovaras, "An extension of UsiXML enabling the detailed description of users including elderly and disabled", in International Workshop on Software Support for User Interface Description Language, Interact 2011, Lisbon, 2011.
- Monk, A., Jackson, D., Nielsen, D., Jefferies, E. & Olivier, P. (2011),
- "N-backer: An auditory n-back task with automatic scoring of spoken responses, Behavior Research Methods", DOI: 10.3758/s13428-011-0074-z

- Ivo Ramos Maia Martins, María Fernanda Cabrera-Umpiérrez, Maria Teresa Arredondo, Ana María Navarro Cerdá, “A New Approach Parameterization of Cognitive Disabilities”, III Workshop on Technology for Healthcare and Healthy Lifestyle, 2011, Valencia, Spain, 1 December 2011

Presentations

Following presentations were made so far:

- Caterina Calefato, Luca Minin, Francesco Tesauri, A design framework for accessibility based upon virtual reality: the VERITAS project, IX Congresso Nazionale Ergonomia, valore sociale e sostenibilità, 27-28-29 October 2010, Rome, Italy
- VERITAS networking session, ICT 2010, 27-29 September 2010 at Brussels Expo, Brussels, Belgium
- Manfred Dangelmaier, Human Models for Accessible and Personalized Products: The VUMS Project Cluster and VERITAS, pHealth 2011 (8th International Conference on Wearable Micro and Nano Technologies for Personal Health), Lyon, France, 29th June – 1st July 2011

Posters

Following posters were published so far:

- On 4-7 October 2010, VERITAS was presented via a poster at SIAMOC 2010, at Ferrara, Italy.

More events will be attended in the next 2 years. To stay updated, do follow our updates at <http://veritas-project.eu/category/news/>.

EU Policy developments

A European Accessibility Act to be delivered in 2012



The European Commission Work Programme for 2012 was published in November 2011, and made reference to the creation of a **European Accessibility Act**. In its Communication the European Commission proposes a new Directive “to improve the market of goods and services that are accessible for persons with disabilities and elderly persons, based on a “design for all” approach. This business friendly initiative will include binding measures to promote procurement and harmonisation of accessibility standards.” An ambitious Accessibility Act, including EU standards on accessibility and binding legislation for web-accessibility of public services websites, will greatly improve the social inclusion of older people and people with disabilities.

You may read the European Commission Work Programme here: http://ec.europa.eu/atwork/programmes/docs/cwp2012_annex_en.pdf

European Year 2012 for Active Ageing and Solidarity between Generations: a time to emphasize the need for accessible goods and services!

ACCESS • CITY
THE EUROPEAN AWARD
FOR ACCESSIBLE CITIES
MAKING EUROPE'S URBAN ENVIRONMENT ACCESSIBLE FOR ALL

2012 is the **European Year of Active Ageing and Solidarity between Generations**, representing the chance for policymakers, researchers, designers, developers and civil society to reflect on the challenges and opportunities of population ageing.

The European Year seeks to raise awareness for the issues and the best ways of dealing with them. Accessibility is a key factor in order to allow people with disabilities and older people to live independently and stay active in areas as diverse as employment, health care, social services, adult learning, volunteering, housing, IT services or transport. Through accessibility, all generations will be able to benefit from devices and services in the same manner, no matter the decline of older people's physical and mental abilities. Thus, in the course of 2012 all relevant stakeholders should engage themselves towards and **accessible European Union**.

AGE Platform Europe, the organization that aims to promote the interests of the 150 million inhabitants aged 50+ in the EU and one of the



**European Year for Active Ageing
and Solidarity between Generations 2012**



VERITAS partners, has long been promoting this year and has established a Coalition of stakeholders that have drafted a joint manifesto including recommendations for an age-friendly EU. You may read the manifesto, including a call for enhancing accessibility here:

http://www.age-platform.eu/images/stories/EN/EY2012_Manifesto_FINAL.pdf

The Opening Conference of the Year will be held on 18-19 January in Copenhagen. For more information about the European Year 2012 you may visit the European Commission's website: <http://ec.europa.eu/social/ey2012.jsp?langId=en>

External (but relevant) news

Access City Award

On 1 December 2011 the Austrian city Salzburg was proclaimed as the winner of the Access City Award 2012. The Award Ceremony took place in Brussels during the European Day of Persons with Disabilities Conference in the presence of Vice-President of the European Commission Viviane Reding and President of the European Disability Forum Yannis Vardakastanis.

The **Access City Award** sets out to showcase and reward cities with over 50.000 inhabitants which take exemplary initiatives to improve accessibility in the urban environment.

The award is given to the city that:

- has demonstrably improved accessibility in fundamental aspects of city living:

- the built environment and public spaces;
 - transport and related infrastructure;
 - information and communication, including Information and Communication Technologies (ICT);
 - public facilities and services.
- is committed to continued improvements in accessibility in a sustainable way;
 - can act as a role model and encourage the adoption of best practices in all other European cities.

114 cities from 23 EU member states joined the competition. After a pre-selection at national level, a European Jury composed of experts in accessibility and representatives of the European Commission, the European Disability Forum and AGE Platform Europe selected one overall winner, three finalist "runners-up" and four special mentions.

To know more about the results of the Access City Award follow this link:

http://www.accesscityaward.eu/index_en.htm

Vodafone Smart Accessibility Awards



The Vodafone Foundation partnered with AGE Platform Europe and the European Disability Forum (EDF) to devise and deliver the **Smart Accessibility Awards**: an international competition which rewards developers who have the creativity, vision and social commitment to harness the power of smartphones and the mobile internet in support of disabled and older people's needs. The winning applications were announced on the 5th December during the inaugural Vodafone Foundation Smart Accessibility Awards at a ceremony attended by the European Commissioner for Digital Agenda Neelie Kroes. The event which aimed to raise awareness on the additional needs that older people and people with disabilities face when using new technologies and promote the accessibility of new products and services was attended by developers, industries, foundations, policymakers and civil society. **Universidad Politecnica de Madrid**, one of the VERITAS partners, competing with the application BOARD, was among the finalists of the awards under the category of independent living.

For the list of the applications that made it to the finals click here:

<http://developer.vodafone.com/smartaccess2011/finalists/>

A short video with the winning applications can be found here:

<https://developer.vodafone.com/smartaccess2011/>

Launch of the WAI-ACT Project to Support eAccessibility

The WAI-ACT project will develop a framework for open, expanded cooperation among European and international stakeholders, technical guidance on advanced web technologies; an evaluation methodology for web accessibility; and a research agenda for eAccessibility. Technical guidance will include a repository of information on accessibility support in web technologies, application notes on authoring accessible web page components, and code samples for web applications. WAI-ACT will result in: expanded cooperation on the development of accessibility solutions; authoritative accessibility guidance on advanced web technologies; harmonised methodologies for evaluating accessibility of websites; common visions for a coordinated eAccessibility research agenda. WAI-ACT will build upon the strengths of the existing World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI) cooperation mechanisms to facilitate strategic European and international participation throughout the project. WAI-ACT will also seek active exchange with relevant networks in Europe such as eAccess+, and with standardisation activities such as EC Mandate M/376. WAI-ACT is co-funded by the European Commission as a Specific Support Action under the IST 7th Framework Programme.

For more information see related site: <http://www.w3.org/WAI/ACT/Overview.html>

AEGIS Final Workshop and Conference, Brussels 28-30 November 2011

AEGIS project organised its final Workshop and 2nd International Conference entitled "Accessibility Reaching Everywhere" on 28-30 November 2011 in Brussels, bringing together both end-users (people with disabilities) as well as platform and application accessibility developers, representative organisations, the Assistive Technology industry, and policy makers. Since 2008, the AEGIS consortium has been developing an Open Accessibility Framework – comprising open accessibility interfaces, user interface components, developer tools, end-user applications and prototype accessibility solutions for desktops, rich Internet applications and mobile devices.



The workshop on 28 November focused on the realisations of the AEGIS (Open Accessibility Everywhere: Groundwork, Infrastructure, Standards) project and provided attendees the opportunity to try out all outcomes of the project. The demonstrated products offer barrier-free access to desktop, mobile and web applications, are open source based and will be freely available.

The conference on 29-30 November gathered a wide array of experts and users in the area of Assistive Technology to discuss scientific and policy developments in accessible technology and showcase relevant projects and initiatives in the area of assistive technology.

For more information go to the AEGIS conference website: <http://www.epr.eu/aegis/>

Kick-off meeting of the European Project Cloud4All

A new project called [Cloud4All](#) started on November 1st 2011. An international consortium is forming to tap the unprecedented ability to pool resources and match demand with supply enabled by the Cloud to build a Global Public Inclusive Infrastructure (GPII) that can deliver accessibility to every individual where they need it, when they need it and in a way that matches their unique requirements; automatically so that they do not need to negotiate, explain, qualify or justify. Cloud4All represents a European based effort to advance the GPII concept by pulling together a large multi-sector international community including stakeholders, industry leaders and experts in emerging technologies to thoughtfully research, design, develop and test the key software infrastructure and pilot implementations needed to explore this promising approach to digital inclusion.

Cloud4All will do this by:

- Creating/refining user profiling standards and tools capable of capturing the individual needs and preferences of the full range of users facing interface barriers
- Creating/refining interface and materials profiling standards and tools capable of characterizing the full range of ICT/materials users need to access and the different techniques and strategies for accessing them
- Improving mechanisms to match users and with interfaces and materials they can use or techniques or services that can make them usable
- Creating a mechanism to allow users to locate solutions from many different sources in a single search -Demonstrating automatic, on-demand, matching or modification of mainstream and specialized technologies to match each individual as they encounter them, including proof-of-concept demonstrations of this approach across a spectrum of technologies including: Computer OSs and Browsers; Web pages/Apps; Mobiles; Kiosks/Info-Transaction Machines; Installed and Virtual Assistive Technologies; Digital Televisions and Smart Homes
- Testing of the concept with users with a wide variety and combination of physical, sensory, cognitive, language, and learning disabilities If successful, this approach may give us our first chance of reaching the large group of users that do not qualify for or otherwise have not been reached by special services, but nonetheless face barriers to access that prevent them from participating in our rapidly advancing digitally enabled society.

VERITAS project meetings



A VERITAS Plenary Meeting took place in Nottingham, UK, 22-23 September 2011 (in coincidence with a user forum and workshop), and one in Torino, Italy, on 14-16 December 2011 at the premises of Centro Ricerche Fiat S.C.p.A.

VERITAS project videos

The CRF location was also used for recording most of the VERITAS project video. This will be launched in February 2012, and will be streamed via the project website at <http://veritas-project.eu/category/dissemination/video/>. This section now already features demonstration videos of the simulations the project is working on in the different application areas.

VERITAS Deliverables

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

Project Coordinator

Dr. Manfred Dangelmaier
Head of Business Unit Engineering
Systems
Fraunhofer IAO
manfred.dangelmaier@iao.fraunhofer.de

Technical Manager

Dr. Dimitrios Tzovaras
Electrical Engineer, Ph.D.
Researcher Grade B (Associate
Professor) CERTH-ITI, Hellas
Dimitrios.Tzovaras@iti.gr

Dissemination Manager

Mr. Karel Van Isacker
Project Manager
MARIE CURIE ASSOCIATION
veritas@marie-curie-bg.org

Visit the VERITAS website: <http://veritas-project.eu/>
Visit the VERITAS Twitter page: <http://twitter.com/VeritasProj>
Visit the VUMS page: <http://www.veritas-project.eu/vums/>