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Acknowledgements
All partners of the 3DLife project contributed to this report during the last few months. Especially the fruitful discussion at the 3DLife meetings led to this document.

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Abstract

This report is part of Work Package (WP) 6 of the 3DLife project. The general goal of this report is to present the 5th Issue of the project's biannual newsletter, which was published on July 2012. The newsletter is published both in print and electronically.

The reader can subscribe to the electronic version of the 3DLife newsletter in the project's website at http://www.3dlife-noe.eu/. She/he may also find there all issues that have been published.

The newsletter is an instrument for the regular exchange of information among the members of the 3DLife Network of Excellence (NoE) and the research community at large. It constitutes the primary means of collecting results achieved through network activities and spreading them to the community.

The main objectives of the newsletter are:

- To report on and promote the major activities undertaken by the NoE;
- To provide links between both European and international initiatives in the field, and;
- To disseminate information about published papers of the researchers involved in the network.

The printed version of the newsletter is disseminated in the various events where 3DLife participates; 250 copies of each issue are being printed for this reason.

The actual 5th issue of the newsletter – a full graphical representation – is attached to this report as an appendix.

Appendix


3D Life
Newsletter
www.3dlife-noe.eu
Issue 5, June 2012
National Research Foundation of Korea
Bringing the Media Internet to Life!

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National Research Foundation of Korea

The 3DLife Newsletter
Issue 5, June 2012
www.3dlife-noe.eu

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Not for sale.

Information Society Technologies

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SEVENTH FRAMEWORK PROGRAMME

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Editorial

Welcome to the fifth issue of the biannual 3DLife Newsletter!

3DLife is a European Union funded research project, a Network of Excellence (NoE), which aims to further integrate research that is currently conducted by leading European research groups in the field of Media Internet. 3DLife's ultimate target is to lay the foundations of a European Competence Centre under the name "Excellence in Media Computing & Communication" or simply EMC².

The next generation of Media Internet services is expected to become the cornerstone of Information Society in our century. Its impact on the entertainment industry is already clear and it is expected to become much broader changing the way society delivers key services such as health care, learning and commerce.

Since the 3DLife project comprehensively addresses several challenges of Media Internet, it aspires to play a positive role in this upcoming transformation of modern life.

The 3DLife consortium consists of partners of high scientific quality and diverse yet complementary research background:

1. Queen Mary, University of London (UK)
2. Dublin City University (Ireland)
3. Heinrich Hertz Institute, Fraunhofer (Germany)
4. Informatics & Telematics Institute (Greece
5. Korea University (Korea)
6. MIRALab, University of Geneva (Switzerland)
7. Télécom ParisTech (France)

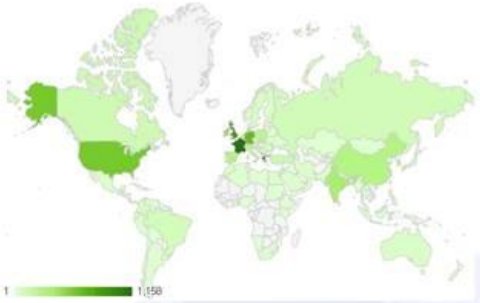
Enjoy reading the Newsletter!

The Project Coordinator,

Prof. Ebroul Izquierdo.

The 3DLife Community

The 3DLife NoE revolves around a virtual community of researchers, people from industry and ordinary citizens. The beating heart of this community is the 3DLife website. As you can see below, a lot of people from all over the world have already visited our site at http://www.3dlife-noe.eu/.



3DLife website visitor map

Visit our website too in order to find more information and news and subscribe to the 3DLife dedicated:

- LinkedIn group,
- Facebook group,
- YouTube channel,
- Tweeter timeline, or
- RSS feed.

In our site you can also subscribe on-line to the electronic version of this Newsletter.

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Project News

3DLife Organized WIAMIS 2012

The 13th International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS 2012, http://wiamis.dcu.ie/) took place in DCU from 23rd-25th May 2012. The objective of the workshop was to bring together researchers, developers and end users from academia and industry working in the areas of image, video and audio applications, with a special focus on analysis.

WIAMIS was sponsored by 3DLife and EMC², with support from CLARITY: Centre for Sensor Web Technologies, Science Foundation Ireland, Failte Ireland and Dublin City University. The event was technically co-sponsored by the IEEE Signal Processing Society.

Of particular note was an industry panel session organized by EMC² on the theme, "What 3D Industry Needs from Research". The aim of the session was to consider and discuss some of the commercial needs and opportunities in the 3D media/ communication field, and the research challenges that must be overcome to enable new market opportunities to be exploited.

The Special Panel Session at WIAMIS 2012

MediaSense - 3rd 3DLife Summer School

On the 21st-22nd May 2012 in Dublin, Ireland 3DLife co-organized the MediaSense EU PhD Summer School where PhD students from across Europe working in multimedia analysis arrived in Ireland for an intensive series of lectures delivered by some of Europe's best researchers in this field. For efficiency and maximum impact, this Summer School was jointly organized with another EU FP7 NoE, the VideoSense project (http://www.videosense.eu/).

Picture from the MediaSense Summer School

Registration for the Summer School included a complementary full registration for the WIAMIS 2012 conference, to enable PhD students to attend both events, and a dedicated poster session for MediaSense PhD students as part of the WIAMIS programme.

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3DLife, EMC², REVERIE Clustering Meeting

On 29th March 2012, a meeting was held to discuss the interaction and clustering between 3DLife, EMC² and REVERIE projects.

During this meeting Professor Ebroul Izquierdo and Dr George Whale presented the progress and achievements of 3DLife and EMC² respectively. Valuable feedback on the EMC² business plan was obtained from REVERIE industrial partners.

3DLife in EC Transversal Clustering Meeting

On 23rd March 2012 in Brussels, 3DLife represented by Professor Ebroul Izquierdo participated in the EC transversal cluster meeting aimed at setting up a new EC Entrepreneurship and innovation cluster focusing on technology entrepreneurship.

EMC², represented by Dr George Whale, also participated and contributed in this meeting in order to play a key role in the early stages of entrepreneurship initiatives in the EC. The main objectives of this cluster meeting included:

a) To allow the projects supported by the European Commission in the area of entrepreneurs and innovation to get to know one another and look for synergies;
b) To agree on the main tasks for the cluster; and
c) To define the governance structure of the cluster.

Smart Media Workshop - Korea

Korea University, the consortium's partner from Asia, organized a one-day workshop on March 23rd, 2012 for the smart media industry in Korea.

The workshop was hosted by the Smart Media Association and sponsored by 3DLife, the National Research Foundation (NRF), and the Korea Creative Content Agency (KOCCA).

Prof. G. Richard (TPT) delivered a talk on Smart Audio to the Korean audience coming mainly from the Smart Media industry.

Prof. Richard was also jointly interviewed with Prof. H. J. Kim by the journalist J. H. Shin of the Korea IT TIMES, a monthly English-language IT journal in Korea that is distributed in more than 150 countries all over the world. The interview resulted in a two pages article entitled "Excellence in Media Computing and Communication" in the April 10, 2012 (Vol. 93) issue.

In this article Professors Richard and Kim inform the Korean and Asian audience about EMC²'s efforts to raise funds from the industry and its plans to establish an entrepreneurship flavored PhD programme under the auspices of the Erasmus Mundus funding Programme.

Prof. G. Richard (TPT) and Prof. H. J. Kim (KU)

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EMC²

A New Centre of Excellence

EMC² ("EMC-squared") stands for Excellence in Media Computing and Commu-nication, and is a non-profit Centre of Excellence bridging the gap between in-dustry and academia in the Media and Communication (MC²) field.

Funded by the European Union and backed by a consortium of world-class re-search institutions, EMC² creates new connections, enabling academic re-searchers to respond to market opportunities, and European industry to en-hance competitiveness through access to research.

Join the EMC² Network

The EMC² Network is a pan-European network that brings together companies, research groups and individuals interested in innovation and entrepreneurship in the Media and Communication field.

Free Membership. Membership of the network is FREE for individuals, public research institutions and other non-profit organisations, and gives access (via our dedicated portal) to the EMC² blog, YouTube channel and LinkedIn account, to comprehensive contact databases of researchers and companies, and to a range of download-able resources.

FULL Membership. FULL membership is available to companies for a modest annual subscription, and gives privileged access to valuable innovation services including funding application support, matchmaking for research and technology transfer, se-lected previews of world-class research and invitations to international net-working events and industry workshops.

Join the EMC² Network! Join the EMC² Network by using the QR code on the left or by visiting our website at www.emc-square.org.

Take Part in Our Survey!

EMC² aims to facilitate training and education for aspiring entrepreneurs in media and communication.

To help determine what kinds of provision are needed, we're asking entrepreneurs and business people to participate in our online survey:

http://www.emc-square.org/emc2/survey/

It takes only a few minutes to complete and will help us to help the next generation of tech-nology entrepreneurs.

Thank you for your participation!

Writing in 3D

Are you involved in an interesting area of 3D research? Is your company breaking new ground? Has a new technological development captured your imagination? Do you have strong ideas about the future of 3D media and communication? Then write a short article for the EMC² blog – provocative contributions especially welcome! Contact George Whale (george.whale@emc-square.org) for details.

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Research Highlight

One of the most successful research integration activities of the 3DLife Network of Excellence was the collaborative capturing of extensive datasets that were initially used for the 3DLife Challenges within the ACM call for Multimedia Grand Challenge Solutions through the years 2010-2012. However, those datasets are an everlasting research asset for the 3DLife consortium; as such they have been used for conducting further joint research, a concrete outcome of which is a new joint 3DLife paper that was recently accepted for publication in the Special Issue on Multimodal Corpora of the *Journal on Multimodal User Interfaces*:

• **S. Essid, X. Lin, M. Gowing, G. Kordelas, A. Aksay, P. Kelly, T. Fillon, Q. Zhang, A. Dielmann V. Kitanovski, R. Tournemenne, A. Masurelle, E. Izquierdo, N. E. O'Connor, P. Daras and G. Richard, "A multi-modal dance corpus for research into interaction between humans in virtual environments", *Journal on Multimodal User Interfaces*, Special Issue on Multimodal Corpora, to appear.**

Journal Information

The Journal on Multimodal User Interfaces fills the demonstrable need for a specifically multidisciplinary publication devoted to the domain of multimodal interfaces.

As implied by the word Interfaces rather than Interactions in the title, the journal seeks to illustrate verifiable realisations over purely theoretical musings. The journal focuses on multimodal interfaces developed with an emphasis on user-centric design. Thus, usability and architectural considerations are also key targets.

The Journal on Multimodal User Interfaces offers a standard reference for multi-disciplinary work in the development of multimodal interfaces.

Paper Abstract

We present a new, freely available, multimodal corpus for research into, amongst other areas, real-time realistic interaction between humans in online virtual environments. The specific corpus scenario focuses on an online dance class application scenario where students, with avatars driven by whatever 3D capture technology is locally available to them, can learn choreographies with teacher guidance in an on-line virtual dance studio. As the dance corpus is focused on this scenario, it consists of student/teacher dance choreographies concurrently captured at two different sites using a variety of media modalities, including synchronised audio rigs, multiple cameras, wearable inertial measurement devices and depth sensors. In the corpus, each of the several dancers performs a number of fixed choreographies, which are graded according to a number of specific evaluation criteria. In addition, groundtruth dance choreography annotations are provided. Furthermore, for unsynchronised sensor modalities, the corpus also includes distinctive events for data stream synchronisation. The total duration of the recorded content is 1 hour and 40 minutes for each single sensor, amounting to 55 hours of recordings across all sensors. Although the dance corpus is tailored specifically for an online dance class application scenario, the data is free to download and use for any research and development purposes.

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New Publications

1. R. Savitha, S. Suresh, N. Sundararajan, H.J. Kim, A fully complex-valued radial basis function classifier for real-valued classification problems, Neurocomputing, Volume 78, Issue 1, 15 February 2012, Pages 104-110, ISSN 0925-2312, 10.1016/j.neucom.2011.05.036.
2. Zerrin Kasap and Nadia Magnenat-Thalmann. 2012. Building long-term relationships with virtual and robotic characters: the role of remembering. *Vis. Comput.* 28, 1 (January 2012), 87-97.
3. Suresh, S.; Cui Run; Hyoung Joong Kim; Robertazzi, T.G.; Young-Il Kim; , "Scheduling Second-Order Computational Load in Master-Slave Paradigm," *Aerospace and Electronic Systems, IEEE Transactions on* , vol.48, no.1, pp.780-793, Jan. 2012
4. Hyoung Joong Kim, Soomin Lim, Jongsub Moon, Boram Kim, Eui S. Jung, A photographic forensic case study: Myths, principles and techniques, Mathematical and Computer Modelling, Volume 55, Issues 1–2, January 2012, Pages 3-11, ISSN 0895-7177, 10.1016/j.mcm.2011.01.001.
5. K. Zawieska, M. Ben Moussa, B. R. Duffy, N. Magnenat-Thalmann, "The role of imagination in Human-Robot Interaction", in Proc. of the 25th Annual Conference on Computer Animation and Social Agents (CASA 2012), May 2012.
6. Essid, S., Alexiadis, D., Tournemenne, R., Gowing, M., Kelly, Ph., Monhagan, D., Daras, P., Dremeau, A., and O'Connor, N. E., "An Advanced Virtual Dance Performance Evaluator", in Proc. of the 37th International Conference on Acoustics, Speech, and Signal Processing (ICASSP), March 2012.

❖ *An up to date list of all 3DLife publications can be found at our website (www.3dlife-noe.org). From the main menu choose "Activities" --> "Publication List".*

Call for Multimedia Grand Challenge Solutions
ACM Multimedia 2012

3DLife/Huawei Challenge: Realistic Interaction In Online Virtual Environments

This challenge calls for demonstrations of technologies that support real-time realistic interaction between humans in online virtual environments. This includes approaches for 3D signal processing, computer graphics, human computer interaction and human factors. To this end, we propose a scenario for online interaction and provide a data set around this to support investigation and demonstrations of various technical components.

Consider an online dance class provided by an expert Salsa dancer teacher to be delivered via the web. The teacher will perform the class with all movements captured by a state of the art optical motion capture system. The resulting motion data will be used to animate a realistic avatar of the teacher in an online virtual ballet studio. Students attending the online master-class will do so by manifesting their own individual avatar in the virtual dance studio. The real-time animation of each student's avatar will be driven by whatever 3D capture technology is available to him/her. This could be captured via visual sensing techniques using a single camera, a camera network, wearable inertial motion sensing, or recent gaming controllers such as the Nintendo Wii or the Microsoft Kinect. The animation of the student's avatar in the virtual space will be real-time and realistically rendered, subject to the granularity of representation and interaction available from each capture mechanism.

Of course, we are not expecting participants to this challenge to recreate this scenario, but rather work with the provided data set to illustrate key technical components that would be required to realize this kind of online interaction and communication. This could include, but is not limited to:

- 3D data acquisition and processing from multiple sensor data sources;
- Realistic (optionally real-time) rendering of 3D data based on noisy or incomplete sources;
- Realistic and naturalistic marker-less motion capture;
- Human factors around interaction modalities in virtual worlds

A data set is provided that consists of a dance teacher and a student performing a series of movements, that will include:

- Synchronization data between each of the multiple calibrated sources capturing the students movements;
- Original music excerpts consisting of a few tracks at different tempos varying from low to fast;
- Inertial (accelerometer + gyroscope + magnometer) sensor data captured from multiple sensors on the student's body;
- Depth maps for student performance captured using a Microsoft Kinect;
- Ratings of the student performances by the teacher;
- A form of annotation of the choreographies (mostly basic steps and movements for salsa beginners) performed;

Download the Dataset!

You can find more information and download the dataset at our website: www.3dlife-noe.eu

June 2012 The 3DLife Newsletter, Issue 5 9

http://www.3dlife-noe.eu/

contact@3dlife-noe.eu

National Research Foundation of Korea

Queen Mary University of London

INFORMATICS & TELEMATICS INSTITUTE

Fraunhofer Heinrich Hertz Institute

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DCU

MIRALab Where research means creativity

KOREA UNIVERSITY

Information Society Technologies

3DLife is a Network of Excellence funded by the European Commission under THEME ICT-2009.1.5 "Networked Media and 3D Internet" of the 7th Framework Programme and National Research Foundation, Korea

SEVENTH FRAMEWORK PROGRAMME

Next issue of the 3DLife Newsletter will be released on December '12

You can subscribe to an electronic version of the Newsletter at our website: www.3dlife-noe.eu

We Need Your Feedback!

Help us make the Newsletter better. E-mail your comments to us at contact@3dlife-noe.eu.