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WP 5

D5.2.9
Report on special sessions/tutorials/workshops and showcases - Year 2

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SUMMARY

This document reports on the special sessions, tutorials, workshops and showcases that the MUSCADE partners have either organised or attended throughout the first year of the project. During these events, the main focus has been on promoting the accruing MUSCADE technologies and disseminating the results of the project to the widest range of audience possible. The report covers the period from the end of the first year of the project (i.e., 1st of January 2011) to the end of the second year (i.e., 31st of December 2011).

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1 INTRODUCTION

This document focuses on reporting the MUSCADE project partners' activities for attending as well as organising special sessions, tutorials, workshops, and showcases during the second year of the project, so as to represent the project at various levels and numerous events while also aiming to contribute to the wider dissemination of the accruing MUSCADE technologies and results among a wide range of audiences. These activities are planned to be performed by all of the MUSCADE consortium members, and thus the variety of events reported in this document is a clear reflection of this aspect. Nevertheless, not all partners may have directly participated in the activities described in this document yet, as the deliverable focuses only on the year-2 actions and some further activities are certainly planned to take place in the following years of the project programme.

In this reporting period, one of the most notable activities performed by the project consortium is the organisation of the MUSCADE Workshop on 3D Multimedia. Details of this activity are provided in Section 3 of the deliverable. Five presentations and a tutorial have been delivered by the consortium partners in reputed international conferences and workshops. Section 2 of the deliverable details these tutorials and presentations. MUSCADE technologies have been demonstrated in four different international events during the reporting period. They are described in Section 4. Finally, Section 5 discusses the further activities related to presenting the MUSCADE project at other events.

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2 TUTORIALS AND PRESENTATIONS

This section provides the details of the tutorials, keynotes, and presentations given by the MUSCADE partners at a range of conferences, workshops, exhibitions, conventions, events, etc.

2.1 PRESENTATION AT 5TH 3DTV CONFERENCE

MUSCADE was represented at IEEE 3DTV-CON 2011 in Antalya, Turkey on 16-18 May 2011 by both University of Surrey and Holografika with research paper presentations. Tibor Balogh of Holografika presented one of the papers, entitled "Rendering Multi-View Plus Depth Data on Light-Field Displays", which described the parts of the work performed in the MUSCADE 3D visual renderer. This paper was authored by Alexandre Ouazan, Peter Tamas Kovacs, Tibor Balogh, and Attila Barsi.

Dr Gokce Nur of University of Surrey made the second paper presentation from MUSCADE, which was entitled "Extended VQM Model for Predicting 3D Video Quality Considering Ambient Illumination Context", and co-authored by Hemantha Kodikara Arachchi, Safak Dogan, and Ahmet Kondoz. In this paper, the standardised Video Quality Metric (VQM) model was extended to consider ambient illumination context in the video quality prediction of 3D video contents. Motion, structural feature, and luminance contrast of colour texture of 3D video contents were exploited as the content related characteristics while extending the model. The conducted quality assessments presented the efficiency of the extended VQM model to predict the video quality of 3D video under a particular ambient illumination condition.

3DTV-CON 2011 has been the 5th instalment in a series of successful conferences bringing together researchers and developers with diverse experience and activity in distinct, yet complementary, areas in relation to 3D television.

Type and size of audience: Research, industry, academia; 100

Countries addressed: International

Event website for further information: http://www.3dtv-con.org/3dtv-con-11/d2/

2.2 PRESENTATION AT INTERNATIONAL FORUM OF DIMENSION 3

MUSCADE was represented by Astrium at the International Forum Dimension 3 which took place in La Plaine Saint Denis, France on 24-26 May 2011. The event featured 3 days of conferences, workshop and exhibitions and attracted 3800 visitors from 35 countries. During the session entitled "The future of 3D in 12 months, 5 years, 10 years", the latest MUSCADE outcomes in terms of content creation, transmission and rendering have been presented to a wide audience.

Type of audience: Research, industry, academia

Countries addressed: International

Event website for further information: http://www.dimension3-expo.com/

2.3 TUTORIAL AT ICME 2011

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Dr. Anil Fernando of University of Surrey represented MUSCADE at the IEEE International Conference on Multimedia and Expo (ICME 2011) in Barcelona, Spain on 11-15 July 2011. IEEE ICME has been the flagship multimedia conference sponsored by four IEEE societies since 2000. It serves as a forum to promote the exchange of the latest advances in multimedia technologies, systems, and applications from both the research and development perspectives of the circuits and systems, communications, computer, and signal processing communities and attracts more than 1,000 delegates all around the world. Dr. Fernando was invited to deliver a tutorial on "Quality of Experience (QoE) in Multimedia Communications". All of the aforementioned work reported in the tutorial was resulted from the University of Surrey's contributions to the MUSCADE project.

Type and size of audience: Research, industry, academia; 1000+

Countries addressed: International

Event website for further information: http://www.icme2011.org/

2.4 PRESENTATION AT ICIIS 2011

Dr Anil Fernando of University of Surrey represented MUSCADE at the IEEE International Conference on Industrial and Information Systems (ICIIS 2011) in Kandy, Sri Lanka on 16-19 August 2011. Dr Fernando was invited to deliver a talk on "Quality of Experience (QoE) in Multimedia Communications". Furthermore he presented two technical papers at the conference. The work reported in the aforementioned invited talk and the technical papers were resulted from the University of Surrey's contributions to the MUSCADE project.

Type and size of audience: Research, industry, academia; 1000+

Countries addressed: International

Event website for further information: http://www.pdn.ac.lk/eng/activities/iciis/2011/index.html

2.5 PRESENTATION AT ICCE 2011

Dr Varuna De Silva and Dr Anil Fernando of University of Surrey represented MUSCADE at the e IEEE International Conference on Consumer Electronics (ICCE) held in Las Vegas, Nevada, USA, 9-12 January 2011. They presented a technical paper entitled "Improved depth map filtering for 3D-TV systems" at the conference. The work reported in the aforementioned technical papers was resulted from the University of Surrey's contributions to the MUSCADE project.

Type and size of audience: Research, industry, academia; 1000+

Countries addressed: International

Event website for further information:
http://www.ieee.org/conferences_events/conferences/conferencedetails/index.html?Conf_ID=17108

2.6 PRESENTATION AT 2011 IEEE INTERNATIONAL WORKSHOP ON HOT TOPICS IN 3D

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Tibor Balogh, as the keynote speaker at the Hot 3D Workshop, had a good opportunity to promote MUSCADE for the participants of the workshop on 15th July, 2011.

The participants represented some of the most influential 3D research labs in Europe and outside Europe. Aljoscha Smolic of Disney Research was one of the members of the organising committee.

Hot3D provides an environment for lively discussion of early-stage, potentially disruptive research. The workshop was organized as a full day workshop aligned with other ICME workshops and activities. The workshop has been a great success with outstanding contributions and very good attendance.

Type of audience: Research, industry, academia

Countries addressed: International

Event website for further information: http://hot3d.org/default.aspx

Figure 2-1. Tibor Balogh's keynote speech at the Hot 3D Workshop

2.7 PRESENTATION AT PROJECTION SUMMIT 2011 IN CONJUNCTION WITH INFOCOMM'11

Tibor Balogh, CEO of Holografika, promoted MUSCADE results and light-field displaying as a presenter on the Projection Summit/Infocomm 2011 Conference in Orlando on the week of 13th June.

The Projection Summit, organised by Insight Media, has featured a mix of speakers offering the latest insights on new technology, markets, applications and competitive issues. Speakers attended to the summit represented leading technology developers, major branders and market research firms covering the display industry.

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The subsequent Infocomm 2011 conference/exhibition at the same location also offered a good opportunity to promote the latest results for key industry players, like Universal Studios, Electrosonic, offering a path of potential exploitation for theme parks, entertainment applications.

Type of audience: Research, industry, academia

Countries addressed: International

Event website for further information: http://www.projectionsummit.com/

Figure 2-2. Tibor Balogh's presentation at the Projection Summit

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3 WORKSHOPS

During the second year of the project, the MUSCADE consortium organised a 2-day Workshop on 3D Multimedia under the leadership of University of Surrey, as proposed in Task 5.2.4 of the Technical Annex. This section provides the necessary details to this workshop.

3.1 MUSCADE WORKSHOP ON 3D MULTIMEDIA

UNIS organised the 2nd MUSCADE Workshop on 3D Multimedia in London, UK on 23-24 June 2011. During this 2-day workshop, 14 speakers from the project partners and a keynote speaker from a major broadcaster presented their vision and the results of their work related to 3D Multimedia.

Figure 3-1. MUSCADE 3DTV Workshop Flyer

Meanwhile, a number of demonstrators set up also helped to show and further disseminate the accruing MUSCADE results. The event was attended by 50+ participants, who represented industry, research and

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academia active in 3D media both nationally and internationally. A selection of photos taken on both days is available in Figure 3-2.

The workshop was organised in two days to accommodate a two-part event. The first day was dedicated to presentations and discussions, while the second day was organised to hold the keynote speech and the demonstration session, which aimed to illustrate the technologies that were presented during the 1st day. The keynote was delivered by Dr Oliver Grau of BBC Research and Development, UK, and entitled, "Towards 3D Immersive + Interactive TV". This talk was very well received by the audience, and raised numerous questions and awareness for future pointers for research in the area.

Figure 3-2. Scenes from the 2-day workshop, from first image to last: keynote speaker, presentations and attendees, and demonstration session

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The detailed programme involved the following presentations and topics:

On day 1:

- Introduction to 3D video/TV and requirements by EBU
- 3D audio-visual capturing and post productions by HHI and University of Surrey
- 3D audio-visual processing and coding by Technicolor and University of Surrey
- 3D media transmission technologies and challenges by Astrium, Telecom Italia, RAI, and University of Surrey
- 3D video display technologies by Holografika
- 3D audio reproduction technologies by Trinnov and University of Surrey
- 3D audio-visual rendering for different displays hosted by Holografika, Trinnov, and University of Surrey
- Quality of experience modelling in 3D media by University of Surrey
- Automatic content creation for multi-view video by Disney Research Zurich
- 3D AV Future by EBU and Technicolor

On day 2:

- Keynote speech by Dr Oliver Grau, Lead Technologist, BBC R&D, UK
- Demonstrations using the MUSCADE 3D content by the project partners:
    - Interactive platform by SES Astra and Disney Research Zurich
    - Multi-view camera rig by HHI and KUK Film
    - Multi-view video by Technicolor
    - HoloVizio, the glasses-free lightfield 3D display by Holografika and University of Surrey
    - 3D audio by University of Surrey

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4 SHOWCASES

This section presents the showcases organised by the MUSCADE partners as well as showcases in which they participated during various events, fairs, shows, conventions, etc.

4.1 MUSCADE AT IBC2011

IBC is a major event for professionals involved in the creation, management and delivery of entertainment and news content. Held at the RAI center in Amsterdam, the event is Europe's largest professional broadcast show and attracts each year around 50,000 attendees and more than 1000 exhibitors. From 9 to 13 September 2011, the MUSCADE project was represented on two booths in the exhibition area of IBC2011.

At the EBU Village, demonstrations based on the rendering techniques developed in the frame of Muscade were shown on several types of 3D displays. Technicolor presented the capabilities of the 3DTV player developed by the project team which includes support for glass-less eight-view autostereoscopic displays and real-time depth adjustment for stereoscopic displays. This technique allows changing the depth impression of 3D sequences which is achieved by interpolating new views from MVD2 sequences using stereo video and their associated depth information. The possibility to adjust the 3D effect depending on personal perception was well received by visitors. Holografika displayed rendering techniques on the Holovizio 240P system.

On Fraunhofer HHI booth, a 4 camera rig was on display. Some sequences produced in the frame of the project were shown on an autostereoscopic display and the production assistance system extended for 4 cameras was presented.

The demonstrations were highly valued by the visitors who showed a great interest for the 3D without glasses related technologies.

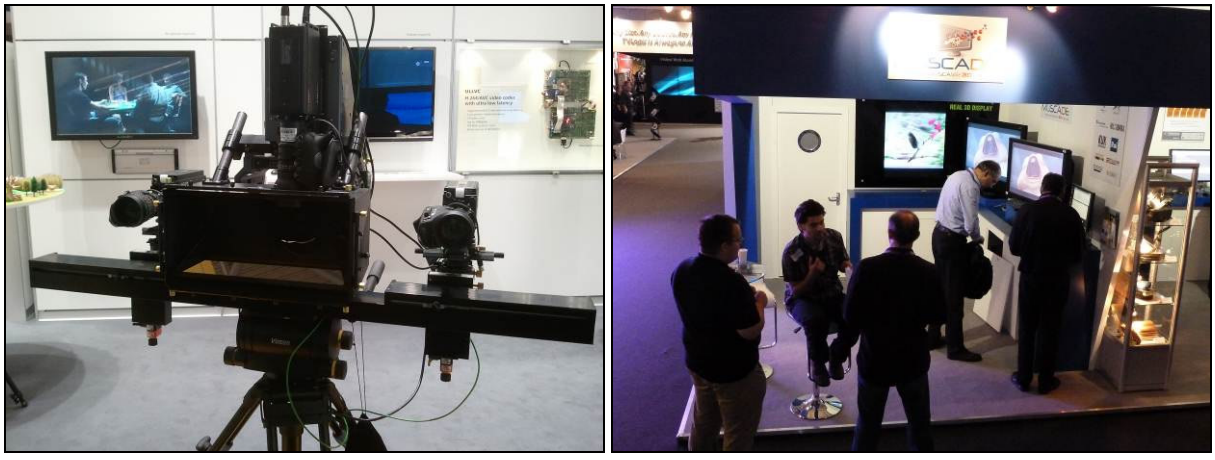

Figure 4-1. MUSCADE technologies at IBC2011

Type and size of audience: Research, industry, academia; 50,000+

Countries addressed: International

Event website for further information: http://www.ibc.org/

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4.2 HOLOGRAFIKA AT THE BARCO CONFERENCE

On 1-2nd September the Barco Technology Center in Kuurne (BE) organised a conference on the present 3D status and the 3D technologies of the future for the company's R&D directors, R&D key people and product management e.g., digital cinema. On the conference several 3D players presented like SeeReal, Philips and academic sector e.g. Computer Laboratory of University Cambridge.

On the conference Tibor Balogh CEO Holografika gave a technical presentation related to the auto-stereoscopic displays and 3D formats. Barco also hosted a session for technical demonstrations where a large-scale HoloVizio display was presented showing light-field content including the MUSCADE multi-camera shots.

Figure 4-2. MUSCADE content on the demo session

Type of audience: Company's R&D directors, R&D key people and product management e.g., digital cinema

Countries addressed: International

Event website for further information: N/A

4.3 3D STEREOSCOPIC CONTENT FORUM & SMART CONTENT WORLD FORUM (ACE TREND FORUM) COLLOCATED WITH ASIA CONTENT AND ENTERTAINMENT FAIR 2011

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Péter Tamás Kovács, as one of the speakers at the ACE Trend Forum talked about 3D display technologies and outlined two possible future paths for 3DTV (beyond stereo), including the MUSCADE approach on Sept 21st 2011, at the Kimdaejung Convention Center, Gwangju, Korea.

The 100+ participants represented interested people related with content creation, animation, and 3D business, including the students, exhibitors and visitors of the ACE Fair. A HoloVizio C80 glasses-free 3D display has been exhibited at the ACE Fair, showing various 3D content including a live recording of the Mayor of Gwangju.

The event provided a very good opportunity to disseminate European 3D related technologies and ongoing research to the Korean audience. During the follow-up events, lively discussions and exchange of views / ideas have taken place with Asian researchers and content creators, as well as the other speakers coming from the 3D field.

Type and size of audience: Research, industry, academia; 100+

Countries addressed: International

Event website for further information: http://www.acefair.or.kr/?mid=en_acefair201

Figure 4-3. Péter Tamás Kovács's presentation at the ACE Trend Forum

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Figure 4-4. Kang Un-tae, Mayor of Gwangju appearing on the HoloVizio C80 3D display, welcoming visitors of the ACE Fair

4.4 MUSCADE AT 3D STEREO MEDIA CONFERENCE

Frederik Zilly of Fraunhofer Institute for Telecommunications, Berlin, Germany delivered a talk about MVD4 generation in the context of the MUSCADE project at the 3D Stereo MEDIA conference held in Liège, Belgium on 5-9 December 2011. His talk entitled "Depth-based Content Creation for Auto-Stereoscopic Displays using Multi-Camera Rigs" was delivered during the session "3D range cameras and their applications". In his talk, he detailed the MUSCADE Multi-Camera rig, Multi-Camera-assistance system, MVD4 depth estimation and MVD4 virtual view generation (Depth Image Based Rendering). He extensively used MUSCADE results to support his discussions.

3D Stereo MEDIA is an international event fully dedicated to "3D" and covering ALL aspects and ALL applications of ALL forms of "3D" (stereoscopic, holographic, integral, range,...). The event is built around the four key components below, designed to fulfill the needs of most people interested in the scientific, technical, artistic, and/or business aspects of 3D. The power of 3D Stereo MEDIA lies in the fact that it focuses on 3D, provides high-quality information, uses 3D visualization extensively, brings together scientists, engineers, artists, businessmen, and deciders, is supported by a major university and the local imaging industry. This year, 3D Stereo MEDIA reinforces its offering by introducing a scientific conference, with appeal to researchers, and a 3D film market, with appeal to artists and investors.

Type of audience: Research, industry, academia

Countries addressed: International

Event website for further information: http://www.3dstereomedia.eu/

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Figure 4-5. MUSCADE Multi-Camera rig demonstrated at 3D Stereo Media Conference

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5 OTHERS

Lastly, this section describes the remaining dissemination activities that have not been classified under any of the previous headings, which the MUSCADE partners have performed to represent the project at various levels during the second year of the project.

5.1 MUSCADE RESEARCHERS WON AN IEEE AWARD

An object based coding approach proposed for efficient compression of depth maps won the award for the 2nd best paper of IEEE Transactions on Consumer Electronics for the year 2010. The award known as the "IEEE Chester W. Sall Memorial Award" is sponsored by the IEEE Consumer Electronics society and was awarded at the IEEE International Conference on Consumer Electronics (ICCE) held in Las Vegas, Nevada, USA, 9-12 January 2011. Dr Anil Fernando and Mr Varuna de Silva attended the ICCE to accept the award from the president of the IEEE CE Society (Figure 5-1). The particular paper "Object based coding of depth maps for 3D video coding" authored by Varuna de Silva and co-authored by Dr Anil Fernando and Dr Lasith Yasakethu was published in the August 2009 issue of the IEEE Transactions on Consumer Electronics. The paper proposes an object based coding approach for depth maps in 3D video based on 3-Dimensional Motion Estimation. The particular work, conducted as a part of the Ph.D. work carried out by Varuna de Silva, is expected to have important use cases in applications that require low computational complexity. Mr de Silva is an active contributor to MUSCADE in the areas of video compression and transmission, and is working towards his Ph.D. under the principle supervision of Dr Anil Fernando. Dr Anil Fernando is the principle investigator of MUSCADE from the University of Surrey and Dr Yasakethu is now a researcher at Technicolor.

Figure 5-1. MUSCADE researchers were presented the best paper award at the ICCE 2011

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5.2 INIT AUTUMN SCHOOL ON 3D IMAGING TECHNOLOGIES

Péter Tamás Kovács was one of the lecturers at the INIT Autumn School on 3D Imaging Technologies, organized by Institute of New Imaging Technologies (INIT) of the University Jaume I of Castellón, taken place October 3-7, 2011 in Benicàssim, Spain.

The participants of the school were PhD students, postdoc researchers and some lecturers involved in 3D imaging, 3D vision, capturing, processing and rendering. During the week, fruitful discussions with other researchers as well as young researchers were taken place, fuelled by the in-depth lectures, which included a detailed discussion of the work and challenges of the MUSCADE project.

Figure 5-2. Péter Tamás Kovács's lecture at the INIT 3D School

Type of audience: PhD students, postdoc researchers and some lecturers involved in 3D imaging, 3D vision, capturing, processing and rendering

Countries addressed: Spain

Event website for further information: http://init.uji.es/school2011/

5.3 MUSCADE AT THE 8TH FP7 NETWORKED MEDIA CONCERTATION MEETING

Astrium attended the 7th and 8th FP7 Networked Media Concertation Meeting in Trento on 14-45 April and Brussels on 13-14 December 2011. Details of the meetings and presentations can be found on the INFSO Networked Media Systems Unit website. During the meetings of the 3D Immersive Interactive Media cluster, a presentation of MUSCADE was made to share the latest project outcomes with other FP7 projects.

Type of audience: Research, industry, academia

Countries addressed: International

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Event website for further information:
http://ec.europa.eu/information_society/activities/netmedia/index_en.htm

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