

ICT-287760

## Vconnect

# Video Communication for Networked Communities

Specific targeted research project

ICT – Networked Media

## D7.4.2 Dissemination, Training and Standardisation Plan – issue 2

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### **Abstract**

This document describes how the knowledge and the results of Vconnect are being disseminated, the training carried out in the context of Vconnect and the related standard activities.

It serves as a source of information to the public and the European Commission, and as guide for all Vconnect consortium partners.

The Vconnect dissemination plan is a living document and re-issued annually. At the end of the Vconnect project in November 2014 there will be a final version available which will also describe the plans for disseminating Vconnect knowledge after closure of the project.

This is the second issue of the Vconnect Dissemination, Training and Standardisation Plan. The next and final issue will become available in July 2014.

### **Target audience**

Everybody interested in Vconnect results and how they are planned to be disseminated.

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Editor: Marian Ursu, Goldsmiths, University of London

Workpackage Leader: Pablo Cesar, CWI

Project Co-ordinator: Peter Stollenmayer, Eurescom

Technical Project Leader: Marian Ursu, Goldsmiths, University of London

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## Executive Summary

This document presents the dissemination, training and standardisation plans for the knowledge created in the FP7 Project Vconnect. Besides being a source of information for the public, it also serves as a guide for all the Vconnect consortium partners and as information source for the European Commission.

The main dissemination channels actively used in Vconnect are

- The project's public website, including a document portal for public deliverables
- Electronic Newsletters
- Social media presence
- Capability demonstrations and exhibitions
- Media, publicity activities, talks
- Articles in academic journals and conferences
- Academic workshops
- Contributions and presentation at events related to FP7
- Demonstrations given to “real” audiences
- Information activities within the Vconnect partner organisations

Highlights of last year's dissemination activities include Fraunhofer's demo at IFA 2013, an event with about 240,000 visitors, the visit of His Royal Highness Prince Edward The Earl of Wessex to Falmouth University, which included an extensive presentation of Vconnect, the best paper award at the International Workshop on Interactive Content Consumption, held in conjunction with EuroITV 2013, and the successful organisation of the workshop on socially-aware multimedia held in conjunction with ACM Multimedia at Nara.

With regards to training, Vconnect distinguishes between internal and external training. Internal training is that targeting people who are affiliated with the project consortium institutions. External training targets audiences outside the consortium institutions. Internal training happened particularly through the involvement of MSc and PhD students in the Vconnect work, but it also included a couple of dedicated events. External training happened through a number of courses delivered to academic audiences in China and Spain.

The *Dissemination, Training and Standardisation Plan* is a living document and re-issued regularly. This is the second issue of the deliverable. At the end of the Vconnect project in November 2014 there will be a third and final issue available which will also describe the plans for disseminating Vconnect knowledge after closure of the project.

## List of Authors

Pablo Cesar (CWI)

Peter Stollenmayer (EUR)

Marian Ursu (GOLD)

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## **1 Introduction**

This deliverable reports on the dissemination, training and standardisation activities carried out in Vconnect until the end of July 2013. It focuses, in the more detailed descriptions, on the period from August 2012 to July 2013, as the previous period until July 2012 has already been reported in the previous issue of this deliverable. It also presents the plans for dissemination, training and standardisation for the coming year, more or less until November 2014.

The deliverable is organized in three main sections, one for each of the three main activities already mentioned: dissemination, training and standardisation. There is a natural progression in time between these activities. Dissemination is the first to kick-in. Training, particularly that carried out outside the project's consortium, requires more robust results. Finally, standardisation requires even more robust results. For this reason, there still is a bias on dissemination.

The dissemination section has been restructured with respect to the previous version of the deliverable. The explanation is given in the following section (2.1).

## 2 Dissemination

### 2.1 Generalities

The dissemination activities in Vconnect observe three major target groups

- **General Public** – requiring information described in easy to understand language.
- **Academic Audiences** – requiring rigorous presentation of scientific results.
- **Commercial Audiences** – requiring concise and convincing presentation of exploitation opportunities.

They inform the languages used in the presentation of the project’s findings and the dissemination channels which should maximise audience reach and impact. The table below summarises the dissemination channels used in Vconnect (note that these categories are not mutually exclusive).

**Table 1** Dissemination channels for different target groups

Target Group	Main dissemination channels
<i>General public</i>	Project website, project brochure, public deliverables, newsletters, social networks, media and publicity activities, prototype demonstrations, and involvement in end-user experiments and trials (including for participants from the consortium institutions, but from other departments/groups)
<i>Academic audiences</i>	Peer-reviewed publications (in journals, conferences and workshops), workshops and demonstrations in conjunction with relevant conferences (tutorials are included as training), and FP7 related events
<i>Commercial audiences</i>	FP7 related events, and presentations and demonstrations pitched to individuals and groups with influence on commercial decisions (from inside the project consortium’s institutions but also from commercial institutions outside it)

From these, we have refined the types of dissemination activities presented in Table 2.

**Table 2** Types of dissemination activities

Type of activity	Target Group
<i>Web and social media</i>	All interested
<i>Public deliverables and newsletters</i>	All interested
<i>Demos, exhibitions, media</i>	All interested, mainly commercial and scientific
<i>Invited talks and posters</i>	Academic and commercial
<i>Peer reviewed conference and journal articles</i>	Mainly academic, but also commercial research
<i>Workshops (organised)</i>	Mainly academic, but also commercial research
<i>Participation in end-user trials</i>	General public

Note that, although participation in Vconnect experiments and user trials is a valid dissemination method, we won't report as such here, as the experiments are captured in the other public deliverables dedicated entirely to them (the D6.x series).

The following sections will present the Vconnect achievements and then plans on each of these types of activities.

## 2.2 Web and Social Media

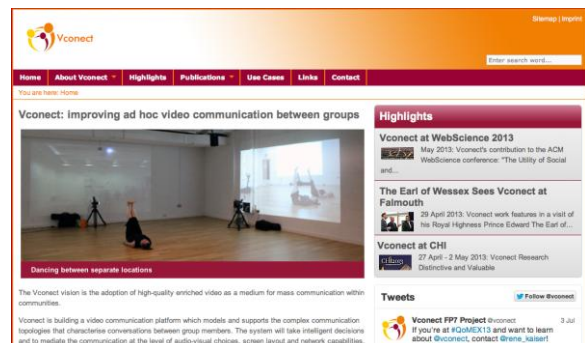
### 2.2.1 Achievements

**Project website.** It is available at <http://www.vconnect-project.eu/>. Based on lessons learned during the first year, the webpage of the project has been completely redesigned, making extensive use of visual material and social media. Highlights of the project are periodically updated, providing visitors snapshots of relevant and novel research done by the project.

**Facebook.** The project has a Facebook account at <https://www.facebook.com/vconnect> linked from the webpage.

**Twitter.** The project has a twitter account, accessible at <https://twitter.com/vconnect>, linked from the webpage

**YouTube.** To date, the project has three videos illustrating the CAVE environment at UCF, an orchestrated Vconnect audio-video communication for theatre rehearsals (Romeo and Juliet), and the field trial on measuring audience attention for online theatre. They are published on the Vconnect channel (<http://www.youtube.com/user/Vconnect>), and accessible from the webpage.



### 2.2.2 Plans

**Project website.** The website is updated continuously. Particularly the “Highlights” provide a good means to become aware of the latest dissemination activities of the project.

**Facebook.** The project will continue to maintain the Vconnect Facebook account <https://www.facebook.com/vconnect?fref=ts>

**Twitter.** The project will continue to maintain the Twitter account <https://twitter.com/vconnect>

**YouTube.** The project is in the process of editing video recordings from the first user trials and publishing them on YouTube. The upcoming experiments will be a further source for such recordings and Vconnect will employ YouTube as a dissemination platform.





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## 2.3 Public Deliverables and Newsletters

### 2.3.1 Achievements

**Public deliverables.** Six public deliverables (including this one) are now available via the project's document portal <http://www.vconnect-project.eu/publications/deliverables.html>

**Electronic Newsletter.** The first electronic project newsletter presenting some of the most significant results to date and some of the ambitious challenges of Vconnect was published at the end of August 2012. Vconnect Newsletters are available on <http://www.vconnect-project.eu/publications/newsletters.html>

**Project folder.** A printed short project folder was completed in November 2012 and is now used for distribution at events and conferences.



### 2.3.2 Plans

**Public deliverables.** 8 more public deliverables will be published during the second half of the project, presenting significant results after the completion of the first and second phase of user experiments. More stable results will naturally become available towards the end of the project. An important public deliverable D2.4 (Context aware a/v communication systems: experience orchestration, network optimisation, configurable a/v processes) will summarise the main publishable knowledge of the project.

All public Vconnect deliverables are available on <http://www.vconnect-project.eu/publications/deliverables.html>

**Electronic Newsletter.** The next version of the Electronic Newsletter will be published at the end of September 2013. Vconnect Newsletters are publicly available on <http://www.vconnect-project.eu/publications/newsletters.html>

## 2.4 Demos, Exhibitions, Media

### 2.4.1 Achievements

The following table summarises our achievements so far.

**Table 3** Demos, Exhibitions and Media

Type	Event name	Presentation title	Date	Venue	Responsible	Authors
Demo	Royal visit of the Earl of Wessex	29 April 2013: Vconnect work features in a visit of his Royal Highness Prince Edward The Earl of Wessex to Falmouth University.	2013-04-29	Falmouth University	Falmouth University	Erik Geelhoed
Magazine	Eurescom Message 3/2012	Implementing the Future Media Internet - NEM Summit 2012 in Istanbul	2012-12-05	n/a	Eurescom	Peter Stollenmayer
Demo	BT Superfast Broadband Press Tour	Demonstration and presentation of Performance Studios CAVE link.	2012-11-08	Falmouth University	Falmouth University	Phil Stenton Erik Geelhoed Ian Biscoe
Demo booth	NEM Summit	Video-based demos of performance lab and trials.	2012-10-18	Istanbul	Falmouth University	Erik Geelhoed Marian Ursu Michael Frantzis Niko Farber Peter Stollenmayer Phil Stenton
Demo	CWI in Bedrijf 2012	A Real-Time System for Monitoring User's Engagement	2012-10-05	CWI	CWI	Chen Wang Marwin Schmitt
Press release	IFA 2012	Fraunhofer IIS Presents Next Generation Video Telephony on SmartTVs with Full-HD Voice at IFA 2012	2012-09-11	Berlin, Germany	Fraunhofer	Niko Farber
Demo booth	IFA 2012	IFA 2012 Demo: Full-HD Voice Videoconferencing on Smart-TV	2012-09-05	Berlin, Germany	Fraunhofer IIS	Niko Farber Yaroslav Kryvyi
Media Coverage	Heise Online	Videotelefonie mit "Full-HD Voice"	2012-08-31	n/a	Fraunhofer	Niko Farber
Media Coverage	Golem.de	Fraunhofer IIS macht den Fernseher zum Bildtelefon	2012-08-30	n/a	Fraunhofer	Niko Farber

## Highlights of 2012

- IFA 2012:** Fraunhofer IIS presented a Vconnect-Demo in the scientific hall at IFA 2012 (31 August - 5 September 2012). The demo showed an early version of an orchestrated 4-point videoconference similar to Google+ Hangout, but with Full-HD voice quality based on AAC-ELD. As end points, a SmartTV, two office-PCs and an Android-Phone were used (the latter one using audio only).



IFA is one of the largest consumer electronic tradeshows and had attracted more than 240,000 visitors. <http://b2b.ifa-berlin.com/en/>

- NEM Summit 2012:** The NEM Summit is one of the major events for research and development of networked media in Europe. Last year, on 14-16 October 2012, 300 delegates came to the conference to learn the latest about internet and communication studies. The Vconnect stand EM Summit 2012 detailed the project's aims in the Networked Media area, specifically to create a new video communication platform for networked communities and informed interested visitors about the project's first user trials and the importance of orchestration for natural multi-party audio-video conversations.



- Royal Visit:** His Royal Highness Prince Edward The Earl of Wessex visited Falmouth University on Monday 29 April 2013 and saw technology developed for the Vconnect project. The Earl of Wessex viewed the latest developments at Falmouth University's Academy for Innovation & Research (AIR). Academics, students and external collaborators shared with His Royal Highness results from a number research projects, including Vconnect. Accompanied by Falmouth University's Vice-Chancellor (Professor Anne Carlisle) and Head of Innovation (Dr Jeremy Richards) The Earl of Wessex was introduced to Erik Geelhoed, a Research Fellow at Falmouth University working on Vconnect. Erik explained some of the challenges and ambitions of the Vconnect project which were illustrated by a troupe of dancers performing in connected 'CAVES'; two separated spaces linked by multiple cameras, the images from which are projected onto wall sized screens in the other 'CAVE'. The Earl of Wessex showed a great deal of interest in the research and had an extended conversation with Erik asking many astute questions.



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## 2.4.2 Plans

Trade shows targeted by Vconnect include IFA<sup>1</sup> (“Internationale Funkausstellung / Consumer Electronics Unlimited”). Vconnect, though Fraunhofer, is committed to exhibit again at IFA 2013, to be held in Berlin during 6 to 11 September, 2013.

Vconnect will continue to have active presence at the upcoming EU-FP7 events:

- **NEM Summit 2013**, 28-30 October 2013 in Nantes, France.  
Vconnect will be represented with a keynote speech (by Dick Bulterman), a demo booth shared with other three FP7 projects (HBB-NEXT, STEER, and REVERIE), and a workshop (Mediasync Workshop: <https://sites.google.com/site/mediasynchronization/mediasync2013>). The two keynotes of the workshop are: Andy Bower from BBC and Thomas Kuepper from the European Commission.  
<http://nem-summit.eu/>
- **ICT 2013** on 6-8 November 2013 in Vilnius, Lithuania. Vconnect will participate with a booth demonstrating the Vconnect platform through the Performance case (a performance acted at Falmouth, UCF, will be presented at Vinius in real time, allowing visitors to participate), and through the Socialisation case (after the performance, the active visitors will have the opportunity to talk to each other via the Vconnect system).  
<http://ec.europa.eu/digital-agenda/en/ict-2013>
- **Future Internet Assembly (FIA) Events**

We have not yet targeted directly any FIA event, but this is in our attention.

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<sup>1</sup> <http://b2b.ifa-berlin.com/en>

## 2.5 Invited Talks

### 2.5.1 Achievements

The following table summarises our achievements so far.

**Table 4** Invited Talks

Event name	Presentation title	Date	Venue	Responsible	Authors
Lecture at Nanjing University	Audience Feedback	2013-06-18	Nanjing University	CWI	Chen Wang
Lecture at Nanjing University	Socially-Aware Multimedia	2013-06-18	Nanjing University	CWI	Pablo Cesar
FIRM Seminar Series	Interactive video: from narratives to synchronous communication	2013-04-24	University of Salford, Manchester, UK	GOLD	Marian Ursu
Seminar at University of York (departments of Theatre Film and Television, and Computing)	Interactive Video and Opportunities for Context-Aware Media	2013-02-25	University of York, UK	GOLD	Marian Ursu
Invited Talk at FXPAL	Mediator-Assisted Video Communication	2013-02-13	Palo Alto, California, USA	CWI	Dick C.A. Bulterman
NEM Summit	Participation for Vconnect as case study in workshop "Networked Media commercialization"	2012-10-18	Istanbul	Eurescom	Peter Stollenmayer
Future Internet Assembly (FIA). FIGARO, Smart Living Workshop	Simplifying Remote Education	2012-05-09	Future Internet Assembly, Aalborg, Denmark	Goldsmiths	Marian Ursu
Workshop on Next Generation Multimedia Research & Development	Socially-Aware Multimedia	2012-05-04	New York Abu Dhabi University	CWI	Pablo Cesar
Public consultation on the FP7 ICT Work Programme 2013 for the Networked Media sector	Virtual Director: key technology for live media services	2012-01-27	Avenue de Beaulieu 25, 1160, Brussels, Belgium	JRS	Rene Kaiser

### Highlights

- **Active participation in EU FP7-related events**, for example through various invited talks at events such as consultation meetings, FIA, and NEM Summit.
- **Interest from other large research project consortia, academia and industry in Vconnect**, expressed through invited talks at FIRM project, various universities in the world, and FXPAL.

### 2.5.2 Plans

As part of its dissemination strategy, Vconnect will continue to invest in giving talks at various venues on topics related to its core research and also to publish, through posters, research ideas and early results.

- **NEM Summit 2013**, 28-30 October 2013 in Nantes, France.  
Vconnect will be represented in an invited keynote speech by prof. Dick C.A. Bulterman from CWI.

## 2.6 Peer Reviewed Conference and Journal Papers

### 2.6.1 Achievements

The following table summarises our achievements so far.

**Table 5** Conference, journal papers, posters

Event/material name	Title	Date	Venue	Lead	Authors
International Workshop on Interactive Content Consumption (at EuroITV)	Sensing Audience Response - Beyond One Way Streaming of Live Performances	2013-06-24	Como, Italy	CWI and UCF	Chen Wang Erik Geelhoed Ian Biscoe Pablo Cesar Phil Stenton
ACM Web Science (WebSci2013)	The Utility of Social and Topical Factors in Anticipating Repliers in Twitter Conversations	2013-05-04	Paris, France	JRS	Rene Kaiser Claudia Wagner Johannes Schantl Markus Strohmaier
Workshop on the Future of Personal Video Communication: Moving Beyond Talking Heads to Shared Experiences (@CHI)	Bringing Video Communication to the Community: Opportunities and Challenges	2013-04-27	Paris, France	BT, CWI, GOLD, Joanneum	Ian Kegel Jack Jansen Marian Ursu Pablo Cesar Rene Kaiser
Remote Encounters:	User requirements in immersive mediated performance spaces.	2013-04-12	University of Glamorgan, Cardiff, Wales	Falmouth University	Erik Geelhoed Ian Biscoe Kuldip Singh-Barmi Phil Stenton
ACM Workshop on Network and Operating Systems Support for Digital Audio and Video	User-centric Video Delay Measurements	2013-02-27	Oslo, Norway	CWI	Jack Jansen Dick C.A. Bulterman
International Workshop on Socially-Aware Multimedia	Automatic orchestration of video streams to enhance group communication	2012-11-29	Nara, Japan	Goldsmiths	Manolis Falelakis Marian Ursu Martin Groen Michael Frantzis Rene Kaiser
The 5th International Conference on Interactive Digital Storytelling (ICIDS'12)	Interactive Video Stories from User Generated Content: a School Concert Use Case	2012-11-15	San Sebastián, Spain	GOLD	Michael Frantzis Ian Kegel Marian Ursu Rodrigo Laiola Guimaraes Roland Craigie Vilmos Zsombori

ACM Multimedia 2012	Enabling 'Togetherness' in High-Quality Domestic Video Conferencing	2012-11-02	Nara, Japan	BT	Ian Kegel Dick C.A. Bulterman Jack Jansen Niko Farber Pablo Cesar Tim Stevens
International Workshop on Socially-Aware Multimedia	Highly-Personal Multimedia: Supporting the User-in-the-Small	2012-10-29	Nara, Japan	CWI	Dick C.A. Bulterman
International Conference on Intelligence in Next Generation Networks	Video Communication for Networked Communities: Challenges and Opportunities	2012-10-11	Berlin, Germany	BT	Tim Stevens Doug Williams Ian Kegel Manolis Falelakis Marian Ursu Niko Farber Pablo Cesar Pedro Torres Phil Stenton Rene Kaiser
Media Synchronization Workshop	Media Synchronization in Vconnect	2012-10-11	Berlin, Germany	BT	Tim Stevens
Summer School on Social Media Modeling and Search (SSMS 2012)	Poster: Social Network Supported Orchestration of Audiovisual Communication	2012-09-14	Fira, Santorini, Greece	JRS	Wolfgang Weiss Claudia Wagner Rene Kaiser
ACM DocEng 2012	Just-in-Time Personalized Video Presentations	2012-09-07	Paris, France	CWI	Jack Jansen Dick C.A. Bulterman Pablo Cesar Rodrigo Laiola Guimaraes
2012 International Workshop on Emerging Multimedia Systems and Applications, In conjunction with ICME 2012	A rule-based virtual director enhancing group communication	2012-07-13	Melbourne, Australia	JRS	Rene Kaiser Manolis Falelakis Marian Ursu Wolfgang Weiss
International Conferences on Advances in Multimedia	Synchronization Techniques in Distributed Multimedia Presentation	2012-05-04	Chamonix / Mont Blanc, France	CWI	Dick C.A. Bulterman Shahab Ud Din
2nd workshop on Making Sense of Microposts at WWW2012	When social bots attack: Modeling susceptibility of users in online social networks	2012-04-16	Lyon, France	JRS	Claudia Wagner



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## Highlights

**Best paper award:** Vconnect researchers Chen Wang, Pablo Cesar (both from CWI); and Erik Geelhoed, Ian Biscoe and Phil Stenton (all from Falmouth University) were awarded the ‘best paper award’ at the International Workshop on Interactive Content Consumption, held in conjunction with EuroITV 2013, in Como, Italy for their joint work on measuring audience responses using biofeedback



## Abstracts (in alphabetical order of first author):

Dick C.A. Bulterman, *Highly-Personal Multimedia: Supporting the User-in-the-Small*, 2012

Multimedia has been a significant area of research for over 20 years. During this time, the role of technology has driven the research agenda. Although the user has played a central role in viewing multimedia information, enabling significant end-user interaction with media has not played a seminal role in most aspects of multimedia research. This paper argues that a fresh look at multimedia interaction is required. This 'fresh look', which is a highly personal facet of socially-aware multimedia, is centered on enabling new end-user interaction with media in the long-term social context of the user's social environment. This has implications on how media is encoded, stored, transmitted, viewed and shared. The multi-faceted impact of sharing highly-personal multimedia will mean that old assumptions on the nature of media will need to be revisited. A new central role for the user is envisaged for defining, selecting and sharing content.

Dick C.A. Bulterman, Shahab Ud Din, *Synchronization Techniques in Distributed Multimedia Presentation*, 2012

In the last two decades, the transmission of multimedia streams using best effort network has been an attractive research area in multimedia communication. Multimedia streams have well defined temporal relations within themselves, generated when captured at the sender. At receiver these temporal relations have to be reconstructed to ensure smooth and synchronized multimedia presentation. The characteristics of best effort network –delay and jitter- degrade the temporal relations present in multimedia streams. Many methods have been proposed in order to mitigate the effect of network delay and jitter on the media streams. This paper classifies the work in the field of distributed multimedia synchronization. We have illustrated the techniques used in the three different multimedia synchronization types, namely, intra-media synchronization, inter-media synchronization and inter-destination synchronization.

Erik Geelhoed, Ian Biscoe, Kuldip Singh-Barmi, Phil Stenton, *User requirements in immersive mediated performance spaces*, 2013

Vconnect [<http://www.vconnect-project.eu/>] is an EU Framework 7 research program. One of the aims is to support the area of mediated performance for the purpose of remote teaching, rehearsals and performances through videoconferencing technologies featuring automated editing and composition of multiple live audio-video streams onto multiple screens. The orchestration of the video and audio streams will take into account a variety of editing cues originating from directional audio, face detection and physiological sensors augmenting audience feedback. Over the last two decades performance artists have made use of videoconferencing systems for installations, joint performances and rehearsals; often negotiating costly and bespoke soft and hardware. More recently, pervasive and low-cost videoconferencing technology has successfully been applied in mediated installations, paving the way for the technology to be incorporated into the curriculum of performance colleges thereby creating a need for systematic user requirement research. We report on a series of studies in which theatre and dance students collaborated across a videoconferencing connection. The results highlighted different technology requirements for distributed theatre and dance practitioners and these findings help shape the Vconnect research agenda. We highlight theoretical perspectives relevant to telepresence in performance.

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Jack Jansen, Dick C.A. Bulterman, *User-centric Video Delay Measurements*, 2013

The complexities and physical constraints associated with video transmission make the introduction of video playout delays unavoidable. Tuning systems to reduce delay requires an ability to effectively and easily gather delay metrics on a potentially wide range of systems. In order to support this process, we report on a system called videoLat. VideoLat provides an innovative approach to understand glass-to-glass video delays. This paper provides a series of requirements for obtaining representative delay information, it illustrates how such measurements can provide insights into complex (and often closed) video processing systems, and it describes how user-centric testing can be supported in a more realistic manner. We also survey the present state of the art in video delay measurement. The main contribution of this work is that it provides a measuring framework that could serve as the basis for obtaining representative comparative measurements across a wide range of video processing environments.

Jack Jansen, Dick C.A. Bulterman, Pablo Cesar, Rodrigo Laiola Guimaraes, *Just-in-Time Personalized Video Presentations*, 2012

Using high-quality video cameras on mobile devices, it is relatively easy to capture a significant volume of video content for community events such as local concerts or sporting events. A more difficult problem is selecting and sequencing individual media fragments that meet the personal interests of a viewer of such content. In this paper, we consider an infrastructure that supports the just-in-time delivery of personalized content. Based on user profiles and interests, tailored video mash-ups can be created at view-time and then further tailored to user interests via simple end-user interaction. Unlike other mash-up research, our system focuses on client-side compilation based on personal (rather than aggregate) interests. This paper concentrates on a discussion of language and infrastructure issues required to support just-in-time video composition and delivery. Using a high school concert as an example, we provide a set of requirements for dynamic content delivery. We then provide an architecture and infrastructure that meets these requirements. We conclude with a technical and user analysis of the just-in-time personalized video approach.

Rene Kaiser, Manolis Falelakis, Marian F Ursu, Wolfgang Weiss, *A rule-based Virtual Director Enhancing Group Communication*, 2012

Audiovisual group communication systems deal with a large number of video streams, and, unlike less advanced videoconferencing systems, require intelligence for selecting adequate views for each of the connected rooms, in order to convey best what is happening in the other locations. Such a decision making component, in our implementation called Orchestration Engine (OE), acts as a Virtual Director. It processes low-level events, emitted by content analysis sensors, into editing commands. The OE has two main components: one that semantically lifts low-level events into communication events and one that associates editing decisions to communication contexts. The former has to deal with uncertain and delayed information. The latter subsumes knowledge that reflects both conversation and narrative principles. Both components include contradicting bodies of knowledge. We investigate a rule-based event processing approach and reflect the scalability of our solution regarding competing and contradicting rules.

Rene Kaiser, Claudia Wagner, Johannes Schantl, Markus Strohmaier, *The Utility of Social and Topical Factors in Anticipating Repliers in Twitter Conversations*, 2013

Anticipating repliers in online conversations is a fundamental challenge for computer mediated communication systems which aim to make textual, audio and/or video communication as natural as face to face communication. The massive amounts of data that social media generates has facilitated the study of online conversations on a scale unimaginable a few years ago. In this work we use data from Twitter to explore the predictability of repliers, and investigate the factors which influence who will reply to a message. Our results suggest that social factors, which describe the strength of relations between users, are more useful than topical factors. This indicates that Twitter users' reply behaviour is more impacted by social relations than by topics. Finally, we show that a binary classification model, which differentiates between users who will and users who will not reply to a certain message, may achieve an F1-score of 0.74 when using social features.

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Ian Kegel, Jack Jansen, Marian F Ursu, Pablo Cesar, Rene Kaiser, *Bringing Video Communication to the Community: Opportunities and Challenges*, 2013

The rise of online social networks, the wide availability of video communication technology and the deployment of high-speed broadband networks together provide the opportunity for video to become a medium for mass social communication among communities. However, current solutions provide poor support for ad hoc social interactions among multiple groups of participants. This position paper summarises the results of more than 5 years' research to make communication and engagement easier between groups of people separated in space. It shows how communication can be effectively combined with different shared activities, and how the technical capabilities of Communication Orchestration and Dynamic Composition work together to improve the quality of human interactions. The paper also describes ongoing work to develop the Service-Aware Network as a means of optimising the quality of a user's communication experience while making most efficient use of network resources. We believe these developments could enable video-mediated communication to become an effective and accepted enabler for social communication within community groups globally

Ian Kegel, Dick C.A. Bulterman, Jack Jansen, Niko Farber, Pablo Cesar, Tim Stevens, *Enabling 'Togetherness' in High-Quality Domestic Video Conferencing*, 2012

Low-cost video conferencing systems have provided an existence proof for the value of video communication in a home setting. At the same time, current systems have a number of fundamental limitations that inhibit more general social interactions among multiple groups of participants. In our work, we describe the development, implementation and evaluation of a domestic video conferencing system that is geared to providing true 'togetherness' among conference participants. We show that such interactions require sophisticated support for high-quality audiovisual presentation, and processing support for person identification and localisation. In this paper, we describe user requirements for effective interpersonal interaction. We then report on a system that implements these requirements. We conclude with a systems and user evaluation of this work. We present results that show that participants in a video conference can be made feel as 'together' as collocated players of a board game

Manolis Falelakis, Marian F Ursu, Martin Groen, Michael Frantzis, Rene Kaiser, *Automatic orchestration of video streams to enhance group communication*, 2012

Unlike legacy video-conferencing, which connects two nodes each equipped with a camera, recent systems facilitating for video-mediated group communication deal simultaneously with a large number of video streams. This highlights the need for orchestration, i.e. the intelligent selection of the most adequate camera views to be displayed on each screen. In this paper we present the initial results of a study that evaluates the effects of orchestration on communication within a specific context; that of two remote groups playing a collaborative board game. The results of the experiment indicate that automatic orchestration can provide improvements similar to the ones achieved when live video mixing is performed by human editors.

Michael Frantzis, Ian Kegel, Marian F Ursu, Rodrigo Laiola Guimaraes, Roland Craigie, Vilmos Zsombori, *Interactive Video Stories from User Generated Content: a School Concert Use Case*, 2012

This paper describes a web-based narrative system able to generate video compilations, framed as event stories, from a shared repository of video recordings of the event itself and possibly of related events. For this, it employs narrative techniques informed by TV documentary. The generated stories are dynamically personalised, in that the system is able to adapt them to the choices and preferences expressed by the active viewers during narration. The system has been prototyped for the case of school concerts. User evaluations indicate that experiences founded on story navigation rather than sharing individual media assets is a rewarding one and point to further areas of development in interactive storytelling in the context of user generated content.

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Tim Stevens, *Media Synchronization in Vconnect*, 2012

While advances in commercial video conferencing and social networking are driving more people to communicate using video, it is still difficult to achieve a sense of co-presence - that is to make the technology transparent to its users - when mediating ad hoc interactions between groups of people in different locations. The FP7 project VConnect will define and demonstrate a platform for group communication that allows participants to create a robust video communication session centred on a shared activity and to which participants can join or leave in an arbitrary manner using an arbitrary device specification on an arbitrary network. The prototype system developed by VConnect will extend the state of the art in the dynamic control of video communication systems and the synchronisation of key components within the network. We will build two application test-cases, centred around Performance and Socialisation. These test-cases will help us explore the engineering challenges and compromises in real-world situations, when people use our system outside a lab environment. Key technical issues include:- Stream-level synchronisation, where audio and video streams need to be mixed or switched;- Delivery synchronisation, where participants may require frame-accurate synchronisation with each other in some situations (but not always)- Time synchronisation, and techniques to handle variations in delay.- Component synchronisation, where participants joining or leaving will require dynamic changes to routing, presence and system state.

Tim Stevens, Doug Williams, Ian Kegel, Manolis Falelakis, Marian F Ursu, Niko Farber, Pablo Cesar, Pedro Torres, Phil Stenton, Rene Kaiser, *Video Communication for Networked Communities: Challenges and Opportunities*, 2012

While advances in commercial video conferencing and social networking are driving more people to communicate using video, it is still difficult to achieve a sense of co-presence – that is to make the technology transparent to its users – when mediating ad hoc interactions between groups of people in different locations. This paper presents an ambitious plan to define and demonstrate a platform for group communication that allows participants to create a robust video communication session that is centred on a shared activity and to which participants can join or leave in an arbitrary manner using an arbitrary device specification on an arbitrary network. We describe two representative use cases in which co-presence is not currently well supported. We then explain the key technical capabilities which we believe must be developed in order to build our platform, highlighting how they extend the state of the art in the dynamic control of video communication systems and the configuration of key components within the network. We conclude by explaining how our novel platform will be implemented and evaluated over the next 3 years.

Claudia Wagner, *When social bots attack: Modelling susceptibility of users in online social networks*, 2012

With the increasing importance of online social networks such as Twitter or Facebook, a new breed of computer programs, so-called social bots emerged. Social bots are automatic or semi-automatic computer programs that mimic humans and/or human behaviour in online social networks. Social bots can attack users in online social networks to pursue a variety of latent goals, such as to spread information or to influence targets. Without a deep understanding of the nature of such attacks or the susceptibility of users, the potential of social media as an instrument for facilitating discourse or democratic processes is in jeopardy. In this paper, we study data from the Social Bot Challenge 2011 - an experiment conducted by the WebEcologyProject during 2011 - in which three teams implemented a number of social bots that aimed to influence user behaviour on Twitter. Using this data, we aim to develop models to (i) identify susceptible users among a set of targets and (ii) predict users' level of susceptibility. We explore the predictiveness of three different groups of features (network, behavioural and linguistic features) for these tasks. Our results suggest that susceptible users tend to use Twitter for a conversational purpose and tend to be more open and social since they communicate with many different users, use more social words and show more affection than non-susceptible users.

## 2.6.2 Plans

The following papers have been accepted and are now in preparation for publication.

**Table 6** Conference and journal papers in preparation

Type	Publication Venue	Paper title	Date	Place	Lead	Authors	Status
Journal	ACM Transactions on Multimedia Computing, Communications and Applications (TOMCCAP)	Socially-Aware Multimedia Authoring: past, present, and future	2013-08-01		CWI	Dick C.A. Bulterman, Pablo Cesar Rodrigo Laiola Guimaraes,	accepted
Proceeding	ACM DocEng 2013	Multimedia Document Synchronization in a Distributed Social Context	2013-09-10	Florence, Italy	CWI	Jack Jansen, Dick C.A. Bulterman, Pablo Cesar	accepted
Proceeding	ACM Multimedia 2013	Orchestration: TV-Like Mixing Grammars applied to Video- Communication for Social Groups	2013-10-21	Barcelona, Spain	GOLD	Marian Ursu, Manolis Falelakis, Martin Groen, Michael Frantzis, Vilmos Zsombori, Rene Kaiser	accepted

Papers are being drafted capturing results from a number of end-user experiments and studies carried out in the second year of Vconnect, including

- Orchestration experiments, carried out at Goldsmiths in February 2013
- Quality of experience experiments carried out at CWI in April, May 2013
- View Modes experiments carried out at BT in June 2013.

There will also be an end-user experiment enquiring into the integration of video technology with specialist social networks, using the Vconnect platform and SAPO Campus, to be carried out in early October 2013, which is expected to provide results for publication.

For these papers we will target conferences, particularly in HCI, whose deadlines for submission are in late autumn / early winter.

We also have plans for a few journal papers in which we intend to capture significant results that combine those achieved in Vconnect with previous research.

## 2.7 Organised workshops

### 2.7.1 Achievements

The following table summarises our achievements so far.

**Table 7** Organised workshops

Type	In conjunction with	Workshop title	Date	Venue	Responsible	Authors	Status
Workshop	ACM Multimedia 2012	Socially-Aware Multimedia	2012-10-29	Nara, Japan	CWI	Pablo Cesar Doug Williams	completed

#### Highlights:

- The first ACM workshop on *socially-aware multimedia* held in conjunction with the main conference in multimedia, ACM Multimedia, at Nara, Japan, organised by Pablo Cesar and Doug Williams attracted a lot of interest and participants and was a great success.

### 2.7.2 Plans

The following workshops have already been accepted.

**Table 5** Workshops in preparation

Type	In conjunction with	Workshop title	Date	Venue	Responsible	Authors	Status
Workshop	ACM MM 2013	2nd International Workshop on Socially-Aware Multimedia	2013-10-21	Barcelona, Spain	CWI	Pablo Cesar Doug Williams	accepted
Workshop	NEM Summit 2013	Media Synchronization Workshop (MediaSync) 2013	2013-10-29	Nantes, France	CWI	Pablo Cesar Jack Jansen	accepted

Following the success of the first workshop on socially aware media, ACM MM endorsed the organisation of the second edition in Barcelona in 2013. It will include two keynote speakers (Dick C.A. Bulterman and Eric Gilbert)

We will continue to target high profile conferences to organise workshop around the main research areas tackled by Vconnect. This includes as well the involvement of Vconnect in new efforts, such as the newly formed ACM International Conference on Interactive Experiences for TV and Online Video (ACM TVX 2014)

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## 2.8 Participation in end–user trials

Dissemination is also carried out through users' involvement in experiments. Users experience directly the Vconnect technologies and, through interviews and debriefing, they get to understand and even influence the issues approached by Vconnect. The second year experiments in this category include

- the Orchestration experiments at Goldsmiths, which involved undergraduate and postgraduate students
- the GSR experiments at UCF, which involved undergraduate and postgraduate students
- the View Mode experiments at BT, which sixth form school children and students.
- the QoE experiments at CWI, which involved postgraduate students from different universities in the Netherlands.

### 3 Training

Vconnect distinguishes between *internal* and *external* training. Internal training is that targeting people who are affiliated with the institutions forming the project consortium. It refers to people directly involved in the project’s activities as well as to those who work in different departments. They might not be directly involved in the project, but could benefit from learning about the results produced by the project. External training targets audiences outside the consortium institutions.

Most of the training activities carried out so far have been centred on internal training and this is where the focus of Vconnect will most probably remain until the end of the project. However, Vconnect is seeking opportunities for external training.

#### 3.1 Internal training

The internal training activities in Vconnect are carried out along the following coordinates:

- students’ studies, particularly through BSc, MSc and PhD projects
- technical co-training among the partner institutions

The following table summarises the training carried out through BSc, MSc and PhD studies.

**Table 6** Training through BSc, MSc and PhD studies

Institution	Topic / Dissertation Title	Type	Status
CWI	Real-time engagement monitoring for online communities	PhD	ongoing
	Next-Generation multimedia systems	PhD	ongoing
	QoE modelling for multi-party video-mediated communication	PhD	ongoing
	Network optimization strategies for shared experiences	PhD	ongoing
Goldsmiths	Automatic camera reframing for orchestrated video communication	MSc	completed
	Automatic people tracking in a performance space (video-based)	BSc	ongoing
JRS	Social network data analysis	MSc	completed
	Communication patterns in social media	MSc	started
Fraunhofer	Browser based interface for video conferencing	BSc	completed
	Intelligent video routing (in the cloud ) for videoconferencing	MSc	ongoing

There are two notable events carried out in the second year within the category “technical co-training among the partner institutions”, namely

- training in Galvanic Skin Response (GSR) and its potential use in mediated performance spaces, carried out through Chen Wang’s internship at UCF, the target audience being staff and students in Theatre and Dance
- training in the Vconnect platform’s integration capabilities for external applications, carried out via an Integration Workshop organised in Lisbon, which involved Vconnect and SAPO Campus<sup>2</sup> developers. Training happened in two directions: from Vconnect to SAPO Campus and from SAPO Campus to Vconnect.

<sup>2</sup> <http://campus.ua.sapo.pt/>



### 3.2 External training

External training in the second year happened via a number of courses and through SAPO’s links with academic institutions (SAPO LABS<sup>3</sup>), through which the Vconnect project ideas and concepts have been exposed.

Three courses have been organised around the Vconnect concepts. They are summarised below:

**Table 7 Courses**

Responsible	Title	Venue	Date
Pablo Cesar	Social interaction design for online video and television	Universidad Autonoma de Madrid, Spain	April 18, 2013
	Socially-Aware Multimedia	Nanjing University, China	June 18, 2013
Chen Wang	Audience Feedback	Nanjing University, China	June 18, 2013



<sup>3</sup> <http://labs.sapo.pt/>

## 4 Standardisation

Standardisation provides an opportunity to disseminate project results into the market and to influence future developments in the field. Many Vconnect partners are already active in several standardisation bodies (in particular, MPEG and W3C) and standardisation-related activities, therefore Vconnect is in a good position with regards to identifying opportunities for standardising its results. However, at the moment, such opportunities are apparent particularly through work in audio coding led by Fraunhofer. Vconnect will observe very clearly which and when research results should be brought to standardisation bodies, and use the relations the partners have in the related standards bodies as appropriate.

Fraunhofer contributes to the ISO/IEC MPEG standardization of AAC-ELD and AAC-ELDV2 which has been selected as the audio codec supported by the VConnect video conference system ACE. The contributions have been made to:

- Reference Software (ISO/IEC 14496-5:2001/Amd.24:2009/COR 1, ISO/IEC 14496-5:2001/Amd.24:2009/DCOR 2, ISO/IEC FDIS 23003-2:2010(E) )  
Several bug fixes to the public AAC-ELD and AAC-ELDV2 reference software have been provided e.g. to enable proper discrete multichannel audio decoding.
- Conformance text and sequences (ISO/IEC 14496-26:2010/DAM 3)  
Several audio content files have been produce and bitstreams created which allow to test discrete multichannel and stereo decoder internal tools on absolute and RMS exactness. Those have been added to public conformance standard. The document *Study on ISO/IEC 14496-26:2010/DAM 3: Conformance for Low Delay AACv2 profile* describes the contents of the new AAC-ELDV2 bit streams. It also states where the bit stream description has to be added. The document *ISO/IEC JTCl/SC29/WG11 MPEG2012/M25927: "Proposed corrections to the conformance tool for Low Delay AAC v2 profile"* states the changes in the ELDV2 conformance tool.

BT is involved in the work of Study Group 12 of the the International Telecommunication Union (ITU)<sup>4</sup>, which deals with the Quality of Experience (QoE) and Quality of Service (QoS) standards.

CWI has been involved in W3C since 1995. During Vconnect, CWI sees three opportunities: W3C Linked Data<sup>5</sup> activity and its relationship to social networking; W3C Media Fragments<sup>6</sup> as part of the Video on the Web activity; and standardisation activities related to multimedia composition (HTML5<sup>7</sup>, Web-RTC<sup>8</sup>). After close evaluation of the alternatives, CWI has decided not to pursue standardization in these fora.

JRS is involved with the W3C's Microposts Community Group<sup>9</sup>. Such community is extremely relevant for Vconnect's goal of providing integrated social networking experiences. Unfortunately, this community has not been that active over the past year.

Vconnect will continue to actively explore further opportunities within different standardisation bodies: the ones mentioned above, but also IETF, DVB, 3GPP.

<sup>4</sup> <http://www.itu.int/en/ITU-T/studygroups/2013-2016/12/Pages/default.aspx>

<sup>5</sup> <http://www.w3.org/standards/semanticweb/data>

<sup>6</sup> <http://www.w3.org/2008/WebVideo/Fragments/>

<sup>7</sup> <http://www.w3.org/html/wg/>

<sup>8</sup> <http://www.w3.org/2011/04/webrtc/>

<sup>9</sup> <http://www.w3.org/community/microposts/>

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## 5 Conclusions

This deliverable outlined the dissemination, training and standardisation activities carried out so far in Vconnect and the plans for the coming year.

The project's results have been disseminated through a rich palette of channels, including the Web and social media, public deliverables and newsletters, demos and exhibitions, invited talks, posters, peer reviewed conference and journal papers, and organised workshops, and a significant number of such activities, including, for example, 12 demos and exhibitions, 10 invited talks and 14 peer reviewed papers. Training has happened particularly within the institutions forming the consortium and included project work carried out as part of BSc, MSc or PhD studies, and co-training among the partner institutions for people not directly involved in the project. Nevertheless, three external courses have also been delivered in the second of the project. As Vconnect is a more research ambitious project (therefore less focused on developing robust technology), aiming to develop novel mediated communication experiences (therefore requiring significant effort with regards to end user experimentation), there is less scope for standardisation activities. The most suitable results for standardisation are those achieved in audio coding, and, at this end, Vconnect has been and will continue to be active. However, the consortium partners are involved in various standard related activities, and so the project is well equipped to identify and exploit further opportunities for standardisation.

For the coming year, Vconnect will continue to devote the same effort to dissemination, training and standardisation, and expects similarly good results as in the year that has been reported.