Framework Programme 7

"Future Media Internet Coordination action"

Contract no.: 249065

Deliverable D4.3
Report on Scientific Papers presented in Networked Media Tracks

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Abstract (for dissemination)	This report summarises the participation and contributions of the selected papers presented during the Networked Media events and special sessions organized by this Support Action in T4.3. Additionally it includes the abstract of such papers and eventually the references to proceedings and details of the Journal Special Issues organized.				
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(**) **Version:** See Document History

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EXECUTIVE SUMMARY

The NextMedia Coordination Action aims to coordinate the efforts in Europe towards producing a clear situation of the Future Media Internet (FMI). Especially in the Networked Media area, the expected results are a) to inform the existing and evolving project and project clusters about the FIA related activities, and to increase the efficiency of the cross-clusters collaboration in FIA related issues.

This deliverable has been produced in the context of WP4 activities whose objective is to create (and participate in) an events as spaces for interaction and discussions to promote European research, industries and strategies in the international context of Content Networks and 3D Media. WP4 provides the means for coordinated participation and representation in events of other EU projects and initiatives to maximize impact of European positioning at scientific and industrial levels.

As part of the T4.3, the NextMedia Coordination Action organized number of events and special sessions in major scientific events to promote research on Networked Media conducted at European level at international scale. Through the organization of such events it was possible to promote and highlight the contributions from ongoing EU projects in this field in a coordinated way in order to increase visibility of work done at European level. A selection of accepted papers on these events were invited to submit into Special Issues of International Journals on the topic organized by the NextMedia consortium members.

This report summarises the participation and contributions of the selected papers presented during the Networked Media events and special sessions organized by this Support Action in T4.3. Additionally it includes the abstract of such papers and eventually the references to proceedings and details of the Journal Special Issues organized.

The specific events included the following topics:

- Personalization in Media Delivery Platforms Workshop at 1st UCMedia Conference, Venice, Italy, December 9, 2009
- Special Session at 17th International Conference on Systems, Signals and Image Processing (IWSSIP), Rio de Janeiro, Brazil, June 17-19, 2010.
- Special Session on Future Media Internet at TEMU 2010 (International Conference on Telecommunications and Multimedia, Chania, Greece, 14-16 July 2010
- 2nd UCMedia Conference, Palma de Mallorca, Spain, September 1-3, 2010
- The International Workshop on Future Multimedia Networks and IP-based TV (FMN-IPTV) at INFOCOM, Shanghai, April 10, 2011
- Special Session on Technologies and Applications for Social-Networks and Internet of Things Integration at the 3rd International Conference on Computational Aspects of Social Networks (CASoN), Salamanca, Spain, October 19-21, 2011.

Additionally, this deliverable includes findings from recent special issues in Journals organized by NextMedia Project:

- ACM Springer Mobile Networks and Applications Journal: Special Issue on Mobility and Media
- Springer Journal on Multimedia Tools: Special Issue on User Centric Media
- IEEE Communications Magazine: Special Issue on Future Media Internet
- ACM Springer Mobile Networks and Applications Journal: Special Issue on Mobility and Social Networks Confluence

Disclaimer

The NextMedia Consortium consists of the following partners:

No	Participant name	Participant short name	Country	Country
1	Universidad Politécnica de Madrid	UPM	Coordinator	Spain
2	ATOS Origin	ATOS	Contractor	Spain
3	Centre for Research and Technology Hellas	CERTH	Contractor	Greece
4	CREATE-NET	CREATE	Contractor	Italy
5	Queen Mary University of London	QMUL	Contractor	UK
6	Synelixis Solutions Ltd	Synelixis	Contractor	Greece

Table 1. Partner List

Acronyms

CDN	Content Delivery Network
FCN	Future Content Networks
FIA	Future Internet Assembly
FISO	Future Internet Service Offerings
FMI	Future Media Internet
FMN	Future Media Networks cluster
MANA	Management and self-Aware Architectures
MDC	Multi Description Coding
MVC	Multi-View Video Coding
P2P	Peer to peer
SVC	Scalable Video Coding
VpD	Video Plus Depth

MVV	Multi-View Video Plus Depth
SQoS	Subjective QoS
OQoS	Objective QoS
NQoS	Network QoS
AQoS	Adaptation QoS
PQoS	Perceived QoS
QoS	Quality of Service
CBIR	Content-based image retrieval
QBIC	Query By Image Content
CBVIR	Content-Based Visual Information Retrieval

1 Introduction

1.1 Context and Objectives for this Document

The NextMedia Coordination Action aims to coordinate the efforts in Europe towards producing a clear situation of the Future Media Internet (FMI). Especially in the Networked Media area, the expected results are a) to inform the existing and evolving project and project clusters about the FIA related activities, and to increase the efficiency of the cross-clusters collaboration in FIA related issues.

This deliverable has been produced in the context of WP4 activities whose objective is to create (and participate in) an events as spaces for interaction and discussions to promote European research, industries and strategies in the international context of Content Networks and 3D Media. WP4 provides the means for coordinated participation and representation in events of other EU projects and initiatives to maximize impact of European positioning at scientific and industrial levels.

Researchers from 23 projects funded by European commission participated to the events and journal special issues organized by the NextMedia consortium, presenting the results of financed projects' research to the international scientific community through 23 conference and workshop papers, and publishing 10 journal papers in international research journals.

As part of the T4.3, the NextMedia Coordination Action organized number events and special sessions in major scientific events to promote research on Networked Media conducted at European level at international scale. Through the organization of such events it was possible to promote and highlight the contributions from ongoing EU projects in this field in a coordinated way in order to increase visibility of work done at European level. A selection of accepted papers on these events were invited to submit into Special Issues of International Journals on the topic organized by the NextMedia consortium members.

This report summarises the participation and contributions of the selected of the selected papers presented during the Networked Media events and special sessions organized by this Support Action in T4.3. Additionally it includes the abstract of such papers and eventually the proceedings and details of the Journal Special Issues organized.

Additionally, this deliverable includes the analysis of discussions conducted by several experts in fields related to NextMedia project such as on Content Networks, 3D media User and Centric Media. The experts' discussions were conducted in the context of one conference, UCMedia 2010, workshops and special sessions with thematic areas close to "Reinforced positioning of European Industry in networking and delivery of multimedia content and in 3D media Internet technologies" and organized in co-location with major scientific conferences. Their objective was to promote discussions fostering the identification of State-of-the-Art practices for better positioning networked media research and development areas conducted at European level but with the input of also other international realities highlighting strengths, weaknesses and other third countries experiences.

The document is organized as following:

First part of this report summarises the participation and contributions to events. The specific events included the following topics:

- Personalization in Media Delivery Platforms Workshop at 1st UCMedia Conference, Venice, Italy, December 9, 2009
- Special Session at 17th International Conference on Systems, Signals and Image Processing (IWSSIP), Rio de Janeiro, Brazil, June 17-19, 2010.
- Special Session on Future Media Internet at TEMU 2010 (International Conference on Telecommunications and Multimedia, Chania, Greece, 14-16 July 2010
- 2nd UCMedia Conference, Palma de Mallorca, Spain, September 1-3, 2010
- The International Workshop on Future Multimedia Networks and IP-based TV (FMN-IPTV) at INFOCOM, Shanghai, April 10, 2011
- Special Session on Technologies and Applications for Social-Networks and Internet of Things Integration at the 3rd International Conference on Computational Aspects of Social Networks (CASoN), Salamanca, Spain, October 19-21, 2011.

The second part summarises the contributions to special issues in Journals organized by NextMedia Project:

- ACM Springer Mobile (MONET) Journal Networks and Applications: Special Issue on Mobility and Media
- Springer Journal on Multimedia Tools: Special Issue on User Centric Media
- IEEE Communications Magazine: Special Issue on Future Media Internet
- ACM Springer Mobile Networks and Applications Journal: Special Issue on Mobility and Social Networks Confluence

The document ends drawing final conclusions of such activities.

Annex 1 includes the conference abstracts of relevant papers and Annex 2 the CFP for NextMedia organized events and special issues.

All references to Web Pages through the document are to be intended as last accessed on October 2011.

2 Conferences, Special Sessions and Thematic Workshops Organized by NextMedia

NextMedia is promoting European research participation in top-notch events and forums such as leading Conferences and Workshops. The main goal is to maximize impact of European positioning at scientific and industrial levels (including SMEs) through identification of the main forums and venues and coordination of participation of key EU research actors.

NextMedia has organised special tracks and events on content networks and 3D media and other relevant NextMedia topics within relevant scientific conferences. As part of the NextMedia dissemination plan, the following Conferences and Special Sessions were organised during the duration of the project:

- Special Session at 17th International Conference on Systems, Signals and Image Processing (IWSSIP), Rio de Janeiro, Brazil, June 17-19, 2010.
- Special Session on Future Media Internet at TEMU 2010 (International Conference on Telecommunications and Multimedia, Chania, Greece, 14-16 July 2010
- UCMedia 2010: 2nd International Conference on User Centric Media, Palma de Mallorca, Spain, September 1-3, 2010
- FMN-IPTV: International Workshop on Future Multimedia Networks and IP-based TV at INFOCOM, Shanghai, April 10, 2011
- Special Session on Technologies and Applications for Social-Networks and Internet of Things Integration at the 3rd International Conference on Computational Aspects of Social Networks (CASoN), Salamanca, Spain, October 19-21, 2011.

Additionally, the NextMedia consortium wase involved in the organization of the following event during the negotiation phase:

- PerMed: Personalization in Media Delivery Platforms Workshop at 1st UCMedia Conference, Venice, Italy, December 9, 2009

The objective of such tracks and events was to promote research conducted at European level at international scale:

Event name	Number of papers from EU funded projects	EU financed projects acknowledged
UCMedia 2010 Conference	9	I-Search, TA2 FP7 (ICT-2007-214793), Future Internet Engineering (POIG.01.01.02-00-045/09, "Innovative Economy 2007-2013" programme), Diomedes FP7, NextMedia (ICT-249065), COAST (ICT-248036), Vital Mind (ICT-215387), SARACEN FP7, APIDIS, European Commission Marie Curie Fellowship program (MC-ERG-2008-230894)

InterMedia Open Forum (UCMedia 2010)	3	NoE INTERMEDIA (NoE 038419)
TEMU 2010	4	ALICANTE FP7 (grant agreement n°248652), ARTEMIS Project SMART and the FP7 211998 AWISSENET project, COAST-ICT-248036
INFOCOM Workshop	2	SEA, BUSCAMEDIA
PerMed 2009	7	SEA IST-214063, ITEA 2 WellCom, My-eDirector 2012, ImaGeo (Galileo FP7 228341), MyMedia (EC PF7 - No: 215006), Games@Large (IST-038453)

The following subsections include a summary of each of the events organized under NextMedia framework.

2.1 Personalization in Media Delivery Platforms Workshop at 1st UCMedia 2009 Conference

The first UCMedia Conference was successfully organized by NextMedia team in December 1-9, 2009 in Venice, Italy. The aim was to improve the understanding of the changing landscape of media, focusing on forms of media that are user centred and on the way that these could be delivered over a Future Media Internet. Users are always central to media: as creators, as consumers, as learners or as the public whose buying habits have, for generations, been influenced by advertisers (and so paid for the creation and distribution of media). For this reason, this conference particularly encouraged a consideration of media that is intrinsically user-centered. The conference contributions relate to all portions of the different media value chains, from creatives, through service providers, technology enablers and users/consumers.

The scientific works presented at the UCMedia conference supported the discussion on inventive and creative practices in the arts, in science, in engineering and in business helping to understand, to predict and to enable trends in media that are related to:

- overwhelming volumes of content
- user generated content
- changing distribution mechanisms
- changing representations of media

The conference accepted 22 research papers from various EU projects and other extra-European Institutions. Besides these papers, the conference organized three keynote speeches, one invited talk and awarded a Best Paper. Additionally, the Conference hosted five workshops (one organized directly by NextMedia representatives) on different topics of User Centric Media.

Organizing committee:
General Co-Chairs:
Petros Daras, CERTH, Greece
Aggelos Katsaggelos, Northwestern Univ. USA
Program Co-Chairs:
Oscar Mayora, CREATE-NET, Italy
Federico Alvarez, UPM, Madrid
Antonio Camurri, Univ. of Genova, Italy
Theodore Zahariadis, Synelexis, Greece

Kenote speakers:
Luis Rodriguez-Rosello from The European Commission on "*Networks and Media: Trends and Prospects on EU Research"*
Aggelos Katsaggelos from Northwestern University on *"Challenges and Opportunities in Multimedia Content Delivery*"
Nadia Magnenat-Thalmann from University of Geneva on "*Towards Truly User-Centric Convergence of Multimedia*"

UCMedia 2009 web site:
http://www.usercentricmedia.org

Workshop description

Detailed information of this Workshop is published in:
http://www.usercentricmedia.org/workshops/permed/

In this context, the NextMedia representatives organized, within UCMedia 2009, a Workshop on *Personalization in Media Delivery Platforms (PerMed)* held in Venice on December 9, 2009.

The workshop focused on the challenges that Future Internet meets and to provide a forum where possible solutions to some of them can be presented. More and more people are coming to expect that the Internet experience be tailored to their needs, their preferences, their hardware and software configurations, their network connections and their behaviour patterns in a seamless and invisible manner. The Future Internet faces important challenges to address these expectations. Some of the technical issues that were addressed are:

- Novel technologies for HD media content distribution over mobile and other last mile access networks - DVB-T, DVB-H, WiMax...
- Multi-view, multi-camera and/or multi-event high compression scalable video encoding algorithms
- Personalised media streaming over heterogeneous networks
- Novel network services enabling delivery of personalized streams
- Advanced personalization mechanisms that hinge on the specification of preferences and profiles associated with broadcasting options or previous behaviour.
- Broadcasting services enabling delivery of personalized streams over a variety of channels and networking infrastructures, including mobile networks.

Personalisation is increasingly central to Future Media Internet. Content providers will need to adapt their offerings to what the client wants, consumer applications will need to behave according to what the consumer asks for, personalisation can allow for optimisation of bandwidth use, usability can be greatly enhanced, etc. For all of these reasons this workshop has been addressed by most researchers in the Future Media Internet communities:

- Network specialists
- End user media application developers
- Identity, profile and context management specialists
- Video encoding specialists
- Content providers
- Usability experts

List of accepted papers

- Bernd Klasen, Takeshi Martinez, Alexander Vinzl, "*Shopping Assistant*"
- Rui Cruz, Mario S Nunes, "*A Personalized HTTP Adaptive Streaming WebTV*"
- C. Z. Patrikakis, N. Papaoulakis, C. Stefanoudaki, M. S Nunes "*Streaming content wars: Download and play strikes back*"
- Steffen Rendle, Christoph Freudenthaler, Zeno Gantner, Lars Schmidt-Thieme "*Optimal Ranking for Video Recommendation"*

- Marta Alvar Gonzalez, Laura Arnaiz, Lara Garcia, Faustino Sanchez, Theodore Zahariadis, Federico Alvarez, "*Personalization of Media Delivery in SEAmless Content Delivery Networks*"
- Michael Weber, Alexandru Stan, George Ioannidis, "*Location-aware and user-centric touristic media*"
- Shuai Qu, Jonas Lindqvist, "*Scalable IPTV delivery to home via VPN*"
- Arto Laikari, Jukka-Pekka Laulajainen, Audrius Jurgelionis, Philipp Fechteler, Francesco Bellotti "*Gaming platform for running games on low-end devices*"

Main findings

1. It was discussed the role of "personalization" in advertisement and how ICT technologies may enhance such process. In particular it was highlighted the approach conducting within "The Shopping Assistant", a prototype of a platform which provides personalized advertisements, ontology based product recommendations and user support to find a (non–web) store selling desired products in TV. The potential benefits identified with such approach transform into satisfied consumers, better advertising revenues and fine grained TV usage statistics which enable broadcasters to provide a more user centric program composition.
2. During the workshop it was highlighted the relevant role of future WebTV in society and the potential services that will be available for users. It was indicated the HTTP protocol as a good approach for multimedia content streaming architectures able to provide large scale WebTV services to end users connected over several access network technologies. Some architectural features envisioned in future systems are the smooth rate adaptation, context personalization enriched information (e.g. channel suggestions), fast program channel switching, network portability (vertical handover) and new terminal portability capabilities. In particular it was mentioned the approach on the previous directions conducted at the level of the My- eDirector 2012 European project.
3. The discussion in personalization included aspects related to "Item recommendations" originated from implicit feedback by predicting a personalized ranking on a set of items (e.g. movies, products, video clips) from user feedback like clicks or product purchases. It was discussed the experience of MyMedia project regarding experimental results from performance evaluation of an innovative approach (matrix factorization model) optimized for the new ranking criterion on data from a BBC video web application. The findings of such approach indicated better performance compared to state-of-the-art models not directly optimized for personalized ranking.
4. During the discussion it was presented an analysis of seamless P2P networks to deliver media. There were identified the different causes that may force an adaption in the delivery of the media content to the end-user. It was highlighted that personalization can take place for mainly three reasons: end-user preferences, devices restrictions and network proprieties. An approach to address such reasons could be to consider the end-user preferences while enhancing the network security using licenses where these preferences are described. In addition, the network models should include the necessary device capabilities awareness and network aware elements to seamlessly perform the media delivery.

5. A new cross-platform approach for distributed 3D gaming in local networks is under development by EU IST Games@Large project. It introduces novel system architecture and protocols used to transfer the game graphics data across the network to end devices. Simultaneous execution of video games on a central server and a novel streaming approach of the 3D graphics output to multiple end devices enable the access of games on low cost devices that natively lack the power of executing high-quality games. Virtually extending the capabilities of such devices the Games@Large system is opening important opportunities for new services and experiences in a variety of fields and in particular for the entertainment in the home and other popular environments.
6. Another relevant point discussed related to personalization included the role of geo-localization in the design and consumption of content. It was described an approach that uses geo-temporal media tagging and Web 2.0 ratings to demonstrate the true potential of location-based applications for the tourism and heritage industries. In this context, it was presented a framework that associates services through a general user workflow for allowing end-users to automatically retrieve additional information about objects they capture with their GNSS-enabled mobile device, document their route, exchange and acquire geo-based information, connect with peer visitors and receive route recommendations. The discussion on the presented approach stimulated exchange of viewpoints regarding new integrated scenarios for accessing on-the-spot information about objects having a cultural value and supporting users on the move to share and retrieve personalised information.

2.2 IWSSIP Conference, Brasil 2010

International Conference on theoretical, experimental and applied signal and image processing techniques and systems was held in Rio de Janeiro, Brasil on 17-19 June 2010.The conference was co-organized by Theodore Zahariadis from NextMedia.

Scope

- Signal Processing
- Technologies
- Multimedia Content Processing
- Multimedia Data Compression
- Multimedia Systems
- Content Description
- Computer graphics and visualization
- Implementations
- Applications

Further details of this event could be read in:
http://www.ic.uff.br/iwssip2010/

2.3 Special Session on Future Media Internet at TEMU 2010

The International Conference on Telecommunications and Multimedia (TEMU) is an international conference that has the goal to present new and original research results and the latest state-of-the-art in Telecommunications and Multimedia. The 2010 edition was held in Chania, Greece, on July 14-16, 2010. It was a forum to foster communication and discussion among researchers, scientists and students working on the design, implementation and application of telecommunications and multimedia fields, and included presentations of invited and regular papers both from manufacturers, academia and services providers.

Special Session description

Detailed information of this Special Session can be found at:
http://www.temu.gr/2010/filez/FMI.pdf

Within TEMU 2010, NextMedia organised a special session on "*Future Media Internet*" aiming to target issues related to the Future Media Internet, such as:

- Content Centric Networking
- Content Centric Routing
- Optimised storage and network caching
- Content indexing and identifying
- Optimised content searching, finding and retrieval
- Content recommendation systems
- 3D media and new user experience
- Efficient Streaming in the Future Internet
- Virtualisation and Sensor Networks
- Smart Cities/Internet of Things
- Session Moderator

The Internet is incontrovertibly a great success that has changed our social and economic world. Today, over one billion users access the Internet on regular basis, more than 100 million users have downloaded at least one (multi)media file, and over 47 million of them do so regularly, searching in more than 160 exabytes of content. The content is expected to rise to more than 990 exabytes before 2012, fuelled mainly by users. In most cases however, today's Internet treats content and services simply as bits of data transported between end-systems/end-hosts. While this relatively simple model of operation had clear benefits when users interacted with well-known servers, the recent evolution of the way the Internet is used makes it necessary to create new models of interaction between entities representing content.

The special session was organized by Dr. Theodore Zahariadis, Technological Educational Institute of Chalkidas, Greece.

Session Chair: Dr. F. Organoudaki

List of accepted papers:

- Y. Chen, D. Negru "*Towards the Deployment of a new "Media Ecosystem" For Future Internet-based Content Network"*

- H. C. Leligou, P. Trakadas, T. Zahariadis, P. Karkazis, S. Voliotis "*Indirect trust information exchange for supporting mobility in the Internet of Things*"

- T. Zahariadis, F. Junqueira, L. Celetto, E. Quacchio, S. Niccolini, P. Plaza "*Content aware searching, caching and streaming*"

- D. Ruíz, O. Patiño, D. Jiménez, J. M. Menendez "*Fast algorithm for H.264/AVC Intra Prediction Based on Discrete Wavelet Transform*"

- E. Borcoci, R. Iorga "*A Management Architecture for a Multi-domain Content-Aware Network"*

2.4 2nd UCMedia Conference, Mallorca 2010

The NextMedia representatives organized the 2nd International ICST Conference on User Centric Media on September 1-3, 2010 in Palma de Mallorca, Spain. The Technical Program included 16 high quality papers divided in seven Technical Sessions, each of them focused on different aspects of user-centric media.

At the end of the conference, the Best Paper Award was awarded to Gokce Nur, Safak Dogan, Hemantha Kodikara Arachchi, and Ahmet M. Kondoz for their paper "*Assessing the Effects of Ambient Illumination Change in Usage Environment on 3D Video Perception for User Centric Media Access and Consumption*".
Detailed information of UCMedia 2010 can be found at:

http://www.usercentricmedia.org/index.shtml

Keynotes

UCMedia 2010 had two high-quality quality keynotes:

- Leonardo Chiarigione "*User-centred media - but who is the user?*"
- Theodore Zahariadis "*Future Media Internet Architectures*"

Dr. Leonardo Chiariglione, well known for his work on the area of telecommunications and digital media, by many considered the father of the Moving Picture Experts Group (MPEG), and founder of the Digital Media Project (DMP); and Dr. Theodore Zahariadis, active in the EU Future Internet Assembly (FIA) activities where he coordinates the Future Media Internet subgroup.

Technical Sessions

Papers were divided in seven sessions:

Session 1: *Personalised access to multimedia content*
Session 2: *Search and retrieval of networked multimedia content*
Session 3: *Multimedia & User Experience*
Session 4: *Video quality perception and user quality of experience*
Session 5: *User generated content*
Session 6: *Content distribution*
Session 7: *Content summarisation*

List of accepted papers

Session 1: Personalised access to multimedia content

- Constandinos X. Mavromoustakis "*A tunable k-hop mobility-based outsourcing replication model for optimizing end-to-end reliability in MP2P systems using community-oriented neighboring feedback*"
- Gianluca Paravati, Mattia Donna Bianco, Andrea Sanna, Fabrizio Lamberti "*A multi-touch solution to build personalized interfaces for the control of remote applications*"
- Juan Carlos Yelmo, Yod-Samuel Martin, Beatriz San Miguel "*Semantic Characterization of Context of Use and Contents for User-Centric Media Retrieval*

Session 2: Search and retrieval of networked multimedia content

- Apostolos Axenopoulos, Petros Daras, Dimitrios Tzovaras "*Towards the Creation of a Unified Framework for Multimodal Search and Retrieval*"
- José Luis Ángel Martínez, Sara Lana Serrano, José L. Martínez-Fernández and Paloma Martínez "*Multimodal Queries to Access Multimedia Information Sources: First steps*"

Session 3: Multimedia & User Experience

- Roland Craigie, Doug Williams and Stephen Johnson "*KnoWhere: User's Attitudes Towards and Experiences with an Experimental Location Based Service*"
- Raquel Navarro-Prieto and Elena Parra "*Towards a comprehensive definition of user experience for 3d content*"

Session 4: Video quality perception and user quality of experience

- Gokce Nur, Safak Dogan, Hemantha Kodikara Arachchi, Ahmet M. Kondoz "*Assessing the Effects of Ambient Illumination Change in Usage Environment on 3D Video Perception for User Centric Media Access and Consumption*"
- Michal Grega, Jaroslaw Bulat, Lucjan Janowski, Dawd Juszka, Mikolaj Igor Leszczuk, Zdzislaw Papir, Piotr Romaniak "*Emerging Research Directions on 3D Video Quality Assessment*"
- Erhan Ekmekcioglu, Stewart Worrall, Varuna De Silva, Anil Fernando, Ahmet M. Kondoz "*Depth Based Perceptual Quality Assessment for Synthesised Camera Viewpoints*"

Session 5: User generated content

- Oscar Mayora, Andrei Papliatseyeu "*GeoMedia? A Framework for Producing Interactive, Geo-Referenced Video Contents*"
- Enrico Nardelli "*A classification framework for interactive digital artworks*"

Session 6: Content distribution

- Filip Hanzl, Zdenek Mikovec, Pavel Slavik "*Implementation of Adaptive Multimedia Application Concept in iDTV Environment*"
- Ch. Patrikakis, N. Papaoulakis, P. Sipsas, Irene Schmidt "*Using Peer to Peer and Social Networking to support new models for IP based streaming services"*

Session 7: Content summarisation

- Fan Chen, D. Delannay, and C. De Vleeschouwer "*Multi-sensored vision for autonomous production of personalized video summaries*"

- Ioannis Leftheriotis, Chrysoula Gkonela, Konstantinos Chorianopoulos "*Efficient Video Indexing on the Web: A System that Leverages User Interactions with a Video Player*"

Main findings

Workshop

In addition, the conference hosted the 4th InterMedia Open Forum workshop on the first day of the conference organized by the InterMedia NoE.

Scope

Recent advances in computing devices and network equip users with rich and interactive environment where multimedia contents can be accessed, visualized and interacted anywhere and anytime on the future Internet. New opportunities for the sharing and interaction with multimedia are given not only to specific interest group but also to the public. User-centric media aims at offering real-time natural interaction with media using mobile and tangible interfaces and ubiquitous connectivity capabilities. Users are always the central to access diverse multimedia as content creators (producers) or as consumers. For this reason, this workshop particularly encourages to take into account of multimedia that is naturally user-centered.

Topics

Suggested topics for papers include, but are not limited to, the following:

- Dynamic distributed networks for nomadic access of multimedia
- Multimedia content adaptation and handling
- Mobile, wearable and tangible interfaces
- Mobile spontaneous interaction with 3D contents
- Integration of physical worlds and virtual worlds
- Social interaction support in physical and virtual worlds
- Adaptive 3D visualization on mobile devices
- Real-time and interactive networked media in mobile mixed reality
- User generated 3D contents

Important Dates

Paper submission: May 31, 2010
Authors notification: July 05, 2010
Camera ready: July 16, 2010
Workshop: September 1, 2010, half-day workshop in the afternoon

Workshop Chairs

- Nadia Magnenat-Thalmann (MIRALab UNIGE, Switzerland)
- Seunghyun Han (MIRALab UNIGE, Switzerland)
- Dimitris Protopsaltou (MIRALab UNIGE, Switzerland)

Workshop web site

http://intermedia.miralab.ch/index.php/objectives-mainmenu-46/71-intermedia-open-forum

Technical Programme

- Prof. Nadia Magnenat-Thalmann (MIRALab, University of Geneva), "*InterMedia: Interactive Media with Personal Networked Devices" (Opening speech)*

- Fadi Chehimi, Enrico Ruzkio (University of Lancaster), "*Throwing Gesture as a Way for Photo Sharing between Mobile Phones and Interactive Tables*"

- Matteo Repetto, Raffaele Bolla, Riccardo Rapuzzi (University of Genova), "*User evaluation of dynamic user-centric networking"*

- Markus Waltl, Christian Raffelsberger, Christian Timmerer, Hermann Hellwagner (Klagenfurt University), "*Metadata-based Content Management and Sharing System for Improved User Experience"*

- Seunghyun Han, Niels A. Nijdam, Nadia Magnenat-Thalmann (MIRALab, University of Geneva), "*An Application Framework for Seamless Synchronous Collaboration Support in Ubiquitous Computing Environments"*

- Suma Noji, Kazunobu Azuma, Keita Yamazaki (Shobi University), "*An Enhanced Window Space Distributed As The Network Content"*

2.5 Workshop on Future Media Networks and IP-based TV (FMN-IPTV) at INFOCOM, April 10, 2011, Shanghai

The International Workshop on Future Multimedia Networks and IP-based TV (FMN-IPTV) was a half-day event focusing on the recent disruptions in the future media networks and how these will shape the IP-based television of the future.

The workshop addressed the Future Media Internet and IP-based TV, which will not only radically change the telecommunications and the entertainment industries, but they are also expected to stimulate and enhance creativity, professional productivity and community relations. In particular, the workshop gave ample time for discussion amongst participants on research topics of emerging trends in the area of seamless media delivery and how the networks, current and future, will support the converged multimedia. Holding this workshop it in conjunction with INFOCOM provided the community with recent advances in IP video that will impact the media networks of the future.

The main topics of the workshop included

- Content centric network architectures for scalable multimedia content delivery
- Distributed caching in the network for multimedia content
- Search and retrieval of multimedia objects over distributed networks
- Scalable multimedia compression, transmission, concealment
- Network coding and streaming
- Encoding technologies for maintaining the integrity and optimise the quality of experience
- Cross-layer dynamic adaptation and end-to-end QoS issues for heterogeneous networks
- Reputation, trust and incentives in peer-to-peer streaming systems and sensor networks
- Network design impacts of IP-based video convergence
- Architectures for converged systems especially those targeting multi screens and combining mobility
- Video convergence, Mobile TV, Mobile Social TV applications and interactivity
- Video Content Distribution, Networks and P2P architectures for distributed services
- User experience and user experience design
- Innovative methods for evolving IP-based TV services (including algorithmic aspects of computer networking oriented to billing, pricing and advertising models, large-scale data management, etc.)

Detailed information of this Workshop can be found at:
http://imde.cio.umh.es/FMN-IPTV-2011/

Organization
Program Chairs
Oscar M Bonastre, University Miguel Hernandez (UMH), Spain

Oscar Mayora, CREATE-NET International Research Center, Italy
Federico Alvarez, Technical University of Madrid (UPM), Spain

Steering Committee

Jon Crowcroft, University of Cambridge, United Kingdom
Pablo Cesar, Centrum Wiskunde & Informatica, Netherlands
Oscar M Bonastre, University Miguel Hernandez, Spain
Theodore Zahariadis, Synelixis, Greece
Petros Daras, CERTH/ITI, Greece
Paul Moore, ATOS Origin, Spain

FMN-IPTV was based on a half-day workshop format, with an opening invited speech, a keynote lecture and two sessions for technical papers. Papers are to be grouped in two themes: (i) Future Media Networks and (ii) IP-based TV.

Keynote

- Prof. Keith Ross (Polytechnic Institute of New York, USA) on "*You Can't Hide: On the Privacy of IP-Video"*

Keith Ross joined Polytechnic Institute of NYU as the Leonard J. Shustek Chair Professor in Computer Science in January 2003. He has been Department Head since September 2008. Before joining NYU-Poly, he was a professor for five years in the Multimedia Communications Department at Eurecom Institute in France and professor for 13 years in the Department of Systems Engineering at the University of Pennsylvania. He received n M.S.E.E. from Columbia University and a Ph.D. in Computer and Control Engineering from The University of Michigan.

Professor Ross has worked in peer-to-peer networking, Internet measurement, video streaming, multi-service loss networks, content distribution networks, network security and privacy, queuing theory, and Markov decision processes. He is an IEEE Fellow, recipient of the Infocom 2009 Best Paper Award (1,435 papers submitted), and recipient of Best Paper in Multimedia Communications 2006-2007 (awarded by IEEE Communications Society). He has served on numerous journal editorial boards and conference program committees. He was PC co-chair for ACM Multimedia 2002, ACM CoNext 2008, and IPTPS 2009. He has served as an advisor to the Federal Trade Commission on P2P file sharing.

Professor Ross is co-author (with James F. Kurose) of the popular textbook, Computer Networking: A Top-Down Approach Featuring the Internet, published by Addison-Wesley (first edition in 2000, fifth edition 2009). It is the most popular textbook on computer networking, and has been translated into fourteen languages. Professor Ross is also the author of the research monograph, Multiservice Loss Models for Broadband Communication Networks, published by Springer in 1995. He is also a founder and the first CEO of Wimba, which develops multimedia communication tools for online learning. Wimba is headquartered in NYC, has more than 80 employees, and was acquired by Blackboard in 2010.

List of accepted papers

O. M Bonastre (Miguel Hernandez University, Spain) "*Emerging trends in Future Media Networks and IP-based TV*" (opening speech)

Session 1 Delivery and Resources Allocation

- J. Liu (University of North Dakota, USA) "*Hard-Deadline-based Frame Filtering Mechanism Supporting the Delivery of Real-Time Video Streams"* pp. 85-90
- L. Chen, B. Wang, X. Chen, X. Zhang, D. Yang (Beijing University of Posts and Telecommunications, P.R. China) "*Utility-Based Resource Allocation for Mixed Traffic in Wireless Networks*" pp. 91-96
- C. Wang, Y. Chu, T. Wei (Ming Chuan University, Taiwan) "*IPTVMON: A Secure Multicast Overlay Network for Load-balancing and Stable IPTV Service Using SIP"* pp. 97-102

Session 2 Delivery and Resources Allocation

- M. Khan, S. Marx (DAI-Labor, Technical University Berlin, Germany), H. Tembine (SUPELEC, Paris, France) "Learning in User-Centric IPTV Services Selection in Heterogeneous Wireless Networks" pp. 103-108
- K. Mishima, Hitoshi Asaeda (Keio University, Japan) "*Digital Content Information Repository for Future Media Streaming*" pp. 109-114
- M. Barrilero, S. Uribe, M. Alduan, F. Sánchez, F. Alvarez (Polytechnic University of Madrid, Spain) "*In-network content based image recommendation system for Content-aware Network*" pp. 115-120

2.6 Special Session on Technologies and Applications for Social-Networks and Internet of Things Integration at CASoN 2011

NextMedia representatives organized a Special Session on *Technologies and Applications for Social-Networks and Internet of Things Integration* during The Third International Conference on Computational Aspects of Social Networks (CASoN 2011) in Salamanca, Spain (Oct. 19-21 2011). The focus of the conference was the presentation and discussion of results about all aspects (theory, applications and tools) of intelligent methods applied to Social Network, and the practical challenges encountered and the solutions adopted.

In this special session explored the different challenges involved in the integration of data originated from both physical (IoT) and online (Social Networks) sources taking into consideration to different research topics: e.g. large scale data integration, participatory sensing from multiple sources, correlation of physical-digital information, geo-located and online social networks correlations, trust and security.

Mobile devices, wearables and wireless sensor networks have been lately used to monitor and sense real world. On one hand, processing of information that has been sensed in the real world is used to detect human activities, environmental and urban state, healthcare conditions, proximity and concentrations of people, epidemic trends, network and routing planning and other natural and human-generated situations describing aspects of the real world. On the other hand, the evolution of the web in terms of user-generated content and the proliferation of online social networks have generated tremendous amount of information, describing dynamic interaction of people with each other, with their surroundings and brought together through their common interests in both, virtual and real worlds.

The special session aimed to foster discussions on a comprehensive list of challenges; including, but not limited to:

- Mobility and geo-localization and their impact to/from social networks
- Wireless sensor networks, mobile devices and social network sensing
- Implications to system design of integrated physical and social network sensing
- Correlation from personal & virtual group spaces and sensors
- Impacts of searching and mining the Internet of things to social networks
- Multi-source information integration
- Search in pervasive social databases
- Models and representations of real-virtual dynamics
- Participatory sensing
- Case studies and applications of mixed sensing and mining
- Content centric networks
- Social metrics for network operation
- Middleware for mobile, wsn and social networks
- Web dynamics and grid/cloud computing
- Security, privacy, reputation and trust issues
- Users studies and human factors in real-online combined sensing

- Applications of physical-online sensing

Detailed information of the Special Session organized by NextMedia is published in: http://www.mirlabs.org/cason11/index.php-c=main&a=show&id=18.htm

Organization
Session Co-Chairs:

Federico Alvarez, Universidad Politécnica de Madrid, Spain
Paul Moore, ATOS, Spain
Oscar Mayora, CREATE-NET, Italy

List of Accepted Papers

- *Simulation of Online Social Networks with Krowdix,* Diego Blanco, Ruben Fuentes and Juan Pavón
- *Entropy Based Community Detection in Augmented Social Networks*, Juan David Cruz, Cecile Bothorel and Francois Poulet
- *On the Temporal Analysis of Scientific Network Evolution,* Frederic Amblard, Arnaud Casteigts, Paola Flocchini, Walter Quattrociocchi and Nicola Santoro
- *Implicit Groups in Web-based Interactive Applications*, Miguel Rangel Pais, Carmen Morgado and Jose Cunha
- *Mining Shared Social Media Links to Support Clustering of Blog Articles,* Darko Obradovic, Fernanda Pimenta and Andreas Dengel
- *Enabling fine-tuned relationship and privacy in social networks*, Antoine Fressancourt, Colombe Hérault, Marie Blin and Stéphane Cauchie
- *A Comparative Study of Spatial, Temporal and Content-based Patterns Emerging in YouTube and Flickr*, Milan Mirkovic, Dubravko Culibrk, Symeon Papadopoulos, Christos Zigkolis, Yiannis Kompatsiaris, Gavin Mcardle and Vladimir Crnojevic
- *Personalized adaptive media interfaces for multimedia search,* Silvia Uribe, Federico Álvarez and José Manuel Menéndez
- *Multimedia Search and Retrieval over Integrated Social and Sensor Networks* Paul Moore and John Soldatos
- *SoSIReČR – IT Professional Social Network* Peter Vojtáš, Jaroslav Pokorný, Martin Nečaský, Tomáš Skopal, Kamil Matoušek, Jiří Kubalík, Ota Novotný and Miloš Maryška

3 Publications: Proceedings and Journals

NextMedia attaches great importance to the dissemination of research results. It is expected that the results are published with acknowledgement to NextMedia in all publications and other forms of media communication, including media appearances, press releases and conferences.

The NextMedia dissemination plan included the organization of Special Issues in Scientific Journals, being used as containers for disseminating activity of ongoing European Projects. NextMedia has organized the following Special Issues:

- MONET Special Issue on Mobility and Media
- Springer Journal on Multimedia Tools: Special Issue on User Centric Media
- IEEE Communications Magazine: Special Issue on Future Media InternetMONET Special Issue on Mobility and Social Networks Confluence

The objective of such Special Issues was to promote research conducted at European level at international scale:

Special Issues name	**Number of papers from EU funded projects**	**EU financed projects acknowledged**
MONET Special Issue on Mobility and Media	2	SEA (FP-ICT-214063), COAST (FP7-ICT-248036), NextMedia (FP7-ICT-249065), EU-ICT SAME
Springer Journal on Multimedia Tools: Special Issue on User Centric Media	3	COAST (FP7-248036), NextMedia (P7-249065), 3DLife NoE (ICT-247688), ADAMANTIUM (ICT-214751)
IEEE Communications Magazine: Special Issue on Future Media Internet	5	COMET, COAST (ICT-248036), 3DLife NoE (ICT-247688), SARACEN (FP7-248474), ENVISION (FP7 248565)
MONET Special Issue on Mobility and Social Networks Confluence	N/A	The deadline is March 2012

3.1 ACM Springer Mobile (MONET) Journal Networks and Applications: Special Issue on Mobility and Media

NextMedia team organised a Special Issue in 2010 in this highly ranked journal. The Special Issue accepted selected papers from first UCMedia conference as well as open contributions. The topic of the special issue is on Mobility and User Centric Media and CFPs deadline was February 2010.
As part of NextMedia project activities it was organized a Journal Special Issue with ACM Springer Mobile Networks and Applications (MONET) Journal on the topic of Mobility and User-Centric Media

This Special Issue was motivated by the rational that is read as follows:
Rational
Mobile devices have become essential in our daily lives, and the trend is that they become multipurpose objects where all kinds of personal media will be available. Indeed, the growing computational capabilities of such devices have changed the habits of their users and today it is common that many actions and tasks of our daily activities involving media can "happen" through our portable devices. We have entered the world of integrated user experience where users are not only watching and listening new forms of content on new platforms of technology but also creating content of their own. In this context, the User Centered Media (UCM) require over- coming of numerous long-term challenges. The trend created by UCM is expected to speed up the seamless access to content, regardless of its location / repository or terminal device, leading to pervasive media. It is expected that UCM will support inventive and creative practices in the arts, science, engineering, education, and business by enabling entirely new types of creative media production and its consumption in mobile devices will impose big challenges. Additionally, after the evolution from web 1.0 into web 2.0, where the concept of the active user was introduced as the user to be at the centre of the web, we are living now a new, far-out event: the birth of web 3.0, which is provisioned to be the Future Internet where user-centric content and mobility will play a very active role.

The Special Issue was co-chaired by Isidro Laso-Ballesteros, Petros Daras and Oscar Mayora-Ibarra. More details can be found in:
http://www.springer.com/cda/content/document/cda_downloaddocument/CFP_11036_20080927.pdf?SGWID=0-0-45-624128-p35614381

List of accepted papers

The accepted contributions to this issue (MONET Special Issue: Mobility and Media - Volume 16, Number 3, June 2011) were the following:

- Petros Daras, Oscar Mayora-Ibarra, Isidro-Laso Ballesteros "*Editorial for Mobility and User-Centric* Media", p.350
- Theodore Zahariadis, Karsten Grüneberg, Luca Celetto "*Seamless Content Delivery over Mobile 3G+/4G Networks*", pp. 351-360
- Silvia Uribe, Federico Alvarez, José Manuel Menéndez, Guillermo Cisneros "*Visual Targeted Advertisement system based on user profiling and content consumption for Mobile Broadcasting Television*", pp. 361-374

- Giovanna Varni, Maurizio Mancini, Gualtiero Volpe, Antonio Camurri "*A system for mobile active music listening based on social interaction and embodiment*", pp. 375-384
- Gianluca Paravati, Andrea Sanna, Fabrizio Lamberti, Luigi Ciminiera "*An Adaptive Control System to Deliver Interactive Virtual Environment Content to Handheld Devices*", pp. 385-393
- Xinghua Li, Xiang Lu, Jianfeng Ma, Zhenfang Zhu, Li Xu, Young Ho Park "*Authentications and Key Management in 3G-WLAN Interworking*" pp. 394-407

Main findings

1. Personalized advertisement is a great asset for developing new business models and is enabled by future Internet technologies. It was presented a novel intelligent content personalisation system for targeted advertising over mobile broadcasting networks and terminals based on user profiling and clustering, as a new solution where the use of content personalisation represents the competitive advantage over traditional advertising.
2. It was remarked the key requirements that need to be satisfied by multimedia streaming solutions over wireless channels to achieve a high level of acceptability and proliferation of wireless multimedia, in particular wireless video. The research presented here highlight new network architecture considerations that have to be addressed for such goal such as the utilization of more efficient coding formats of video coding (e.g. SVC, MVC) and new methods for increasing the robustness of video delivery.
3. Another relevant finding was that of identifying and proposing efficient access packet switch services through 3G networks. This was sustained on modifications of the EAP-AKA keying framework with improved authentication schemes. In this way, the user can efficiently realize the future re-authentications and handover authentications while reducing authentication latency significantly.
4. Within the special issue, it was proposed a system enabling a novel paradigm for social, active experience of sound and music content. This was presented as a way for targeting the relevant issue of the role of embodiment in social interactions. An instance of such a system, named Sync'n'Move, allowing two users to explore a multi-channel pre-recorded music piece as the result of their social interaction, and in particular of their synchronization was introduced.
5. It was identified the need to address the problems occurring when fluctuations in bandwidth characteristics and limited mobile device CPU capabilities affect streaming interactive multimedia over wireless networks. As a solution for this, a novel approach based on a controller that can automatically adjust streaming parameters basing on feedback measures from the client device was proposed and evaluated satisfactorily.

3.2 Springer Journal on Multimedia Tools: Special Issue on User Centric Media

Guest Editors: Cristina Costa and Tomas Piatrik,
Submissions deadline: Oct 15, 2010

NextMedia organised a Special Issue on User Centric Media in the Springer Journal on Multimedia Tools. Topics of interest for this issue included User Media forms and production, Media delivery and User Media access, discovery and consumption. The call for papers can be found in the Annex 7.

3.3 IEEE Communications Magazine: Special Issue on Future Media Internet

Editors: Theodore B. Zahariadis, Giovanni Pau and Gonzalo Camarillo,
Submissions deadline: Sep 1, 2010

A special issue at the IEEE Communications Magazine on Future Media Interent was organized by Theodore Zahariadis, who is the principle Guest Editor. The Guest Editors group includes also Gonzalo Camarillo (Ericsson) and Giovani Pau (UCLA).

The purpose of this special issue in IEEE Communications Magazine is to present to the magazine's audience a concise, tutorial oriented reference of the state-of-the art, current and future research, challenges and trends in the Future Media Internet. To achieve this goal the special issue seeks original research and review papers that survey, consolidate and present the leading-edge research prototype development, trials and early deployment, and performance studies in the area of Future Media Internet.
The Call for Papers is attached at Annex 8.

3.4 Springer Mobile Networks and Applications (MONET) Journal – Special Issue on Mobility and Social Networks Confluence

Editors: Oscar Mayora Ibarra and Ryoichi Shinkuma.

Submissions deadline: Manuscript submission deadline: March 16th 2012
The Call for Papers for this Special Issue is reachable from:
http://www.springer.com/engineering/signals/journal/11036

ANNEX I: Paper Abstracts

Abstracts of the papers from the Personalization in Media Delivery Platforms Workshop at 1st UCMedia Conference, Venice 2009

Paper 1 - Personalization of Media Delivery in Seamless Content Delivery Networks

Authors
Federico Alvarez, Marta Alvargonzalez (Universidad Politecnica de Madrid), Laura Arnaiz (Universidad Politecnica de Madrid), Lara Garcia (Universidad Politecnica de Madrid), Faustino Sanchez (Universidad Politecnica de Madrid), Theodore Zahariadis (Synelixis Solutions Ltd)

Abstract
In this paper, we propose an innovative system that aims to adapt to the user needs and preferences the media content transmissions within IP and P2P environments. To personalize the manner the content is displayed to the final user, this proposed network allows the transmission of multiple views and different layers for each media content piece. In addition, we suggest an approach on how to deal with the problem of contents transmission over P2P networks while preserving the author's rights. In this document, the system architecture is presented, especially the structure concerning the different streams sent over it and the security involved. This research path is being investigated within "SEAmless Content delivery" (SEA) project.

Keywords
MVC, SVC, layered video coding
Acknowledgement
This publication presented the authors opinion. Yet, it is based on work performed in the framework of the Project SEA IST-214063, which is funded by the European Community. The authors would like to acknowledge the contributions to the SEA Project of colleagues from: STM, Synelixis, Thomson, Philips, Vodafone, Nomor, Fraunhofer HHI, Politechnico di Torino, Universidad Politécnica de Madrid, University of California, Los Angeles.

Paper 2 - Shopping Assistant

Authors
Bernd Klasen (University of Luxembourg), Alexander Vinzl (University of Trier), Takeshi Martinez (SES ASTRA TechCom)

Abstract
This paper presents the Shopping Assistant, the prototype of a platform which provides personalized advertisements, ontology based product recommendations and user support to and a (non-web) store selling desired products. The benefits are satisfied consumers, better advertising revenues and fine grained TV usage statistics which enable broadcasters to provide a more user centric program composition.

Keywords
Personalized advertisement, location based services (LBS)
Acknowledgement
The Shopping Assistant was developed by SES ASTRA TechCom, Inverto and CRP Henri Tudor in the scope of the ITEA 2 WellCom Project

Paper 3 - Streaming content wars: Download and play strikes back.

Authors
Charalampos Z. Patrikakis (Senior Research Associate NTUA), Nikolaos Papaoulakis (National Technical University of Athens), Chryssanthi Stefanoudaki (National Technical University of Athens), Mario Nunes (INOV - INESC Inovação / IST, Lisbon)

Abstract
In this paper, the latest developments in the provision of streaming multimedia over the internet are discussed. We emphasize on the newly appearing HTTP adaptive streaming approach that threatens the reign of RTSP, as regards the support of real time media streaming, and we examine the possible uses of each of the two protocols with respect to the different transmission needs, as these are seen from the transport protocol view point.

Keywords
Download, progressive download, streaming, HTTP adaptive streaming
Acknowledgement
The work presented here has been performed in the context of the European MyeDirector 2012 project. The authors would like to thank all project partners for their support

Paper 4 - A Personalized HTTP Adaptive Streaming WebTV

Authors
Rui Cruz (Instituto Superior Tecnico / INOV), Mário Nunes (Instituto Superior Tecnico / INESC-ID / INOV), João Gonçalves (Instituto Superior Tecnico)

Abstract
This paper presents a HTTP based multimedia content streaming architecture able to provide large scale WebTV services to end users connected over several access network technologies. The architecture features smooth Rate Adaptation, context Personalization information (Channel Suggestions), fast program channel switching, Network Portability (Vertical Handover) and Terminal Portability capabilities. The prototypical solution is being developed under the scope of the My-eDirector 2012 european project.

Keywords
WebTV, Smooth Streaming, Content Adaptation, Rate Adaptation, HTTP Progressive Download.
Acknowledgement
The prototypical solution is being developed under the scope of the My-eDirector 2012 european project.

Paper 5 - Scalable IPTV delivery to home via VPN

Authors
Shuai Qu (Acreo AB NetLab), Jonas Lindqvist (Acreo AB NetLab)

Abstract
The significant interest in IPTV drives the needs for flexible and scalable IPTV delivery way, especially when distributing IPTV service to end-users who are in a separate network or not in an IPTV enabled network. The recent popularity of VPN has made scalable distribution of IPTV possible. VPN can provide global IPTV networking opportunities and extended geographic connectivity. Additionally, the native traits of VPN also provide secure and controllable service features to IPTV. This paper addresses one important area related to IPTV distribution, namely scalability. We present a novel solution to distribute IPTV via VPN to remote end-users over public

networks. The solution allows end-users over a wider geographical area to get IPTV service, and it also reduces operating costs. Traffic measurements and evaluation of services performance are also illustrated and discussed in this paper.

Keywords
IPTV,VPN, scalability

Paper 6 - Location-aware and user-centric touristic media

Authors
George Ioannidis (IN2 search interfaces development Ltd), Alexandru Stan (IN2 search interfaces development Ltd), Michael Weber (IN2 search interfaces development Ltd)

Abstract
This paper presents an approach that uses geo-temporal media tagging and Web 2.0 ratings to demonstrate the true potential of location-based applications for the tourism and heritage industries. It presents a framework, associated services and a general user workflow, which will allow end-users to automatically retrieve additional information about objects they capture with their GNSS-enabled mobile device, document their route, exchange and acquire geo-based information, connect with peer visitors and receive route recommendations. It provides therefore a new, integrated scenario for accessing on-the-spot information about objects having a cultural value and supporting users on the move to share and retrieve personalised information regarding cultural attractions and routes, all with one click.

Keywords
Geo-temporal coding, location-based services, tourism, media tagging, geo-tagging, content-based image retrieval.
Acknowledgement
The presented work is performed within the ImaGeo project that is co-financed by the European Community and is carried out in the context of the Galileo FP7 R&D programme supervised by the European GNSS Supervisory Authority under Grant Agreement No: 228341

Paper 7 - Optimal Ranking for Video Recommendation

Authors
Zeno Gantner (University of Hildesheim), Christoph Freudenthaler (University of Hildesheim), Steffen Rendle (University of Hildesheim), Lars Schmidt-Thieme (University of Hildesheim)

Abstract
Item recommendation from implicit feedback is the task of predicting a personalized ranking on a set of items (e.g. movies, prod- ucts, video clips) from user feedback like clicks or product purchases. We evaluate the performance of a matrix factorization model optimized for the new ranking criterion BPR-Opt on data from a BBC video web application. The experimental results indicate that our approach is su- perior to state-of-the-art models not directly optimized for personalized ranking.

Acknowledgement
This work was co-funded by the EC FP7 project MyMedia under the grant agreement no. 215006.

Paper 6 - Gaming platform for running games on low-end devices

Authors

Arto Laikari (VTT), Jukka-Pekka Laulajainen (VTT), Audrius Audrius Jurgelionis (University of Genoa), Philipp Fechteler (Fraunhofer Institute for Telecommunications), Francesco Bellotti (University of Genoa)

Abstract

Low cost networked consumer electronics (CE) are widely used. Various applications are offered, including IPTV, VoIP, VoD, PVR and games. At the same time the requirements of computer games by means of CPU and graphics performance are continuously growing. For pervasive gaming in various environments like at home, hotels, or internet cafes, it is beneficial to run games also on mobile devices and modest performance CE devices such as set top boxes. EU IST Games@Large project is developing a new cross-platform approach for distributed 3D gaming in local networks. It introduces novel sys-tem architecture and protocols used to transfer the game graphics data across the network to end devices. Simultaneous execution of video games on a central server and a novel streaming approach of the 3D graphics output to multiple end devices enable the access of games on low cost devices that natively lack the power of executing high-quality games.

Keywords

Distributed gaming, graphics streaming, video streaming, gaming architecture

Acknowledgement

This work has been carried out in the IST Games@Large project (http://www.gamesatlarge.eu) [1], which is an Integrated Project under contract no IST038453 and is partially funded by the European Commission.

Abstracts of selected papers from the 2nd UCMedia Conference, Mallorca 2010

List of accepted papers

Session 1: Personalised access to multimedia content

- Constandinos X. Mavromoustakis "*A tunable k-hop mobility-based outsourcing replication model for optimizing end-to-end reliability in MP2P systems using community-oriented neighboring feedback*"
- Gianluca Paravati, Mattia Donna Bianco, Andrea Sanna, Fabrizio Lamberti "*A multi-touch solution to build personalized interfaces for the control of remote applications*"
- Juan Carlos Yelmo, Yod-Samuel Martin, Beatriz San Miguel "*Semantic Characterization of Context of Use and Contents for User-Centric Media Retrieval*

Session 2: Search and retrieval of networked multimedia content

- Apostolos Axenopoulos, Petros Daras, Dimitrios Tzovaras "*Towards the Creation of a Unified Framework for Multimodal Search and Retrieval*"
- José Luis Ángel Martínez, Sara Lana Serrano, José L. Martínez-Fernández and Paloma Martínez "*Multimodal Queries to Access Multimedia Information Sources: First steps*"

Session 3: Multimedia & User Experience

- Roland Craigie, Doug Williams and Stephen Johnson "*KnoWhere: User's Attitudes Towards and Experiences with an Experimental Location Based Service*"
- Raquel Navarro-Prieto and Elena Parra "*Towards a comprehensive definition of user experience for 3d content*"

Session 4: Video quality perception and user quality of experience

- Gokce Nur, Safak Dogan, Hemantha Kodikara Arachchi, Ahmet M. Kondoz "*Assessing the Effects of Ambient Illumination Change in Usage Environment on 3D Video Perception for User Centric Media Access and Consumption*"
- Michal Grega, Jaroslaw Bulat, Lucjan Janowski, Dawd Juszka, Mikolaj Igor Leszczuk, Zdzislaw Papir, Piotr Romaniak "*Emerging Research Directions on 3D Video Quality Assessment*"
- Erhan Ekmekcioglu, Stewart Worrall, Varuna De Silva, Anil Fernando, Ahmet M. Kondoz "*Depth Based Perceptual Quality Assessment for Synthesised Camera Viewpoints*"

Session 5: User generated content

- Oscar Mayora, Andrei Papliatseyeu "*GeoMedia? A Framework for Producing Interactive, Geo-Referenced Video Contents*"
- Enrico Nardelli "*A classification framework for interactive digital artworks*"

Session 6: Content distribution

- Filip Hanzl, Zdenek Mikovec, Pavel Slavik "*Implementation of Adaptive Multimedia Application Concept in iDTV Environment*"
- Ch. Patrikakis, N. Papaoulakis, P. Sipsas, Irene Schmidt "*Using Peer to Peer and Social Networking to support new models for IP based streaming services"*

Session 7: Content summarisation

- Fan Chen, D. Delannay, and C. De Vleeschouwer "*Multi-sensored vision for autonomous production of personalized video summaries*"
- Ioannis Leftheriotis, Chrysoula Gkonela, Konstantinos Chorianopoulos "*Efficient Video Indexing on the Web: A System that Leverages User Interactions with a Video Player*"

Abstracts of selected papers

Session 1 - Personalised access to multimedia content

Paper 1 - *A multi-touch solution to build personalized interfaces for the control of remote applications*

Authors
Gianluca Paravati (Politecnico di Torino), Mattia Donna Bianco (CEDEO.net), Andrea Sanna (Politecnico di Torino), Fabrizio Lamberti (Politecnico di Torino),

Abstract
This paper presents a framework for controlling remote applications by means of personalized multi-touch interfaces. The designed framework allows end-users to fully personalize the mapping between gestures and input commands. A two-tier architecture has been developed. A formal description of the original interface is automatically generated at the server side to identify a set of available actions for controlling existing applications. The client is in charge of loading the description of the target application, allowing the user to shape the preferred mapping between gestures and actions. Finally, the server converts the identified actions into one or more commands understandable by the original computer interface. The implementation of the system for this work specifically relies on handheld multi-touch devices. Test results are encouraging, both from an objective and a subjective point of view; indeed, the designed framework resulted to outperform a traditional GUI both in terms of number of actions to perform a task and average completion time.

Keywords
Multi-Touch; personalized interfaces; human-machine interface;
remote control
Acknowledgement
This article is part of a work developed within the frame of the project "Piattaforma Tecnologica Innovativa per l'Internet of Things" co-funded by the Regione Piemonte.

Paper 2 - *Semantic Characterization of Context of Use and Contents for User-Centric Media Retrieval*

Authors
Yod-Samuel Martin (Universidad Politecnica de Madrid), Juan Yelmo (Universidad Politecnica de Madrid), Beatriz San Miguel (Universidd Politécnica de Madrid),

Abstract
When users access online media, they need and desire to get an experience tailored to their specific, personal context and situation. This is becoming more and more relevant with the ever-increasing amount of available contents users may choose from. In order to provide user-centric functionalities (such as relevant searches, content adaptation, customization and recommendation), both the annotation of contents with semantically rich metadata and an accurate model of the individual users and their respective contexts of use are needed. In this context, we propose a solution to automatically characterize both the context of use and the contents. It provides dynamic, adaptive user models, with explicit and implicit information; as well as content descriptors that may be later used to match the most suitable contents for each user. Users always keep a pivotal role throughout the whole process: providing new contents, contributing to moderated folksonomies, overseeing their own user model, etc.

Keywords
annotation, metadata, user model, content description, adaptation, customization, personalized search

Acknowledgement
The works herein presented are being developed as part of the Buscamedia project of the CENIT-E programme, with reference number CEN- 20091026, partially funded by the CDTI (Centro para el Desarrollo Tecnológico e Industrial), supported by the Spanish Ministry of Science and Innovation. The authors would like to thank the knowledge and the contributions of the Buscamedia consortium partners (www.cenitbuscamedia.es). This part of the project has been specifically contracted to Universidad Politécnica de Madrid by GFI Informática.

Session 2 - Search and retrieval of networked multimedia content

Paper 3 - ***Towards the Creation of a Unified Framework for Multimodal Search and Retrieval***

Authors
Apostolos Axenopoulos (Centre for Research and Technology Hellas), Petros Daras (Centre for Research and Technology Hellas),

Abstract
In this paper, a novel framework for search and retrieval of multimodal content is introduced as part of the EU-funded project I-SEARCH. The main objective of I-SEARCH is to create a unified framework for multimodal content search, i.e. to retrieve content of any media type (text, 2D images, video, audio and 3D) by using as query any of the above media, along with real-world information, expressive and social cues. The outcome will be a highly user-centric search engine, able to deliver to the end-users only the content of interest, satisfying their information needs and preferences, which is expected to significantly improve end-user's experience. The paper will present the concept of I-SEARCH, as well as its major scientific advances.

Keywords
Multimodal Content Search and Retrieval, user-centric search engine, RUCoD.
Acknowledgement
I-SEARCH

Paper 4 - ***Multimodal Queries to Access Multimedia Information Sources: First steps***

Authors
Ángel Martínez (DAEDALUS), Sara Lana Serrano (DAEDALUS), José L. Martínez-Fernández (Advanced Databases Group, Carlos III University), Paloma Martínez (DAEDALUS),

Abstract
This position paper deals with queries beyond text, mixing several multimedia contents: audio, video, image and text. Search approaches combining some of these formats have been studied, including query by example techniques in situations where only one format is considered. It is worth mentioning that most of these research works do not deal with text content. A new approach to allow users introducing multimodal queries and exploring multimedia repositories is proposed. For this purpose, different ranked result lists must be combined to produce the final results shown for a given query. The main goal of this proposal is to reduce the semantic gap between low level features and high level concepts in multimedia contents. The use of qualitative data giving more relevance to text content along with machine learning methods to combine results of

monomodal retrieval systems is proposed. Although it is too soon to show experimentation results, a prototype implementing the approach is under development and evaluation.

Keywords
multimodal queries, search engine, query by example, results lists combination, multimedia retrieval, relevance feedbac

Acknowledgement
This work has been partially supported by the Spanish Center for Industry Technological Development (CDTI, Ministry of Industry, Tourism and Trade), through the project Buscamedia (CEN-20091026). Authors would like to thank all Buscamedia partners for their knowledge and contribution

Paper 5 - *KnoWhere: User's Attitudes Towards and Experiences with an Experimental Location Based Service*

Authors
Roland Craigie, Doug Williams and Stephen Johnson (BT Innovation and Design)

Abstract
Users' attitudes towards the use of an experimental location based service running on a mobile phone using Wi-Fi beacons as a locator are reported. Twenty one users took part in the trial and sixteen went on to be active users. Detailed results based on logging and user interviews are reported exploring usage, perceptions and experiences. The attitudes reported to a service of this type were generally positive.

Keywords
location based services, Wi-Fi, mobile,

Acknowledgement
The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement no. ICT-2007-214793

Session 4 - Video quality perception and user quality of experience

Paper 6 - *Emerging Research Directions on 3D Video Quality Assessment*

Authors
J. Bułat, M. Grega, L. Janowski, D. Juszka, M. Leszczuk, Z. Papir, P. Romaniak (Department of Telecommunications, AGH University of Science and Technology)

Abstract
Motion picture producers, providers and equipment developers have to deeply consider end user perception of the application being often expressed in terms of a capacious Quality of Experience (QoE) concept. QoE is affected across the whole application delivery chain including content digitisation and compression, its network delivery and reproduction. During recent years enormous research effort and massive tests have been performed in order to identify factors affecting QoE and develop their mapping to scales like Mean Opinion Score for 2D content. Today, the digital video world is on the eve of 3D imaging which is far more complex and sophisticated not only because of the involved technology but also due to the multi–factor nature of the overall 3D experience. This paper discusses the current state of the research on the emerging problem of the user perceived quality of 3D content.

Keywords

Quality of Experience, QoE, 3D Video, subjective tests, quality metrics
Acknowledgement
This publication is an output from a research project "Future Internet Engineering" POIG.01.01.02-00-045/09, part of the "Innovative Economy 2007-2013" programme co–funded by the European Union.

Paper 7 - *Depth based perceptual quality assessment for synthesised camera viewpoints*

Authors
E. Ekmekcioglu, S. T. Worrall, D.V.S.X. De Silva, W.A.C. Fernando, A. M. Kondoz (I-Lab Multimedia Communications Research Group, University of Surrey, UK)

Abstract
This paper considers the visual quality assessment for view synthesis in the context of 3D video delivery chain. It is targeted to perceptually quantify the reconstruction quality of synthesised camera viewpoints. It is needed for developing better QoE models related to 3D-TV, as well as for a better representation of the effect of depth maps on views synthesis quality. In this paper, existing 2D video quality assessment methods, like PSNR and SSIM, are extended to assess the perceived quality of synthesised viewpoints based on the depth range. The performance of the extended assessment techniques is measured by correlating multiple sample video assessment scores to that of the Video Quality Metric (VQM) scores, which are a robust reflector of real subjective opinions.

Keywords
3DTV, Free-viewpoint Video, Video Quality Assessment, Depth Map, Multi-view Video
Acknowledgement
This work has been supported by the DIOMEDES (Distribution of Multi-View Entertainment Using Content Aware Delivery Systems) project, funded under the European Commission ICT 7th Framework Programme (www.diomedes-project.eu).

Keynote

Paper 8 - *Architectures for Future Media Internet*

Authors
María Alduán and Federico Álvarez (E.T.S.I. Telecomunicación, U.P.M, Spain), Theodore Zahariadis, N. Nikolakis and F. Chatzipapadopoulos (Synelixis Solution, Greece), David Jiménez and José Manuel Menéndez (E.T.S.I. Telecomunicación, U.P.M, Spain)

Abstract
Among the major reasons for the success of the Internet have been the simple networking architecture and the IP interoperation layer. However, the traffic model has recently changed. More and more applications (e.g. peerto-peer, content delivery networks) target on the content that they deliver rather than on the addresses of the servers who (originally) published/hosted that content. This trend has motivated a number of content-oriented networking studies. In this paper we summarize some the most important approaches.

Keywords
Content Centric, Future Media Internet architecture
Acknowledgement

This paper is partially based on the EC funded projects NextMedia (ICT-249065) and COAST (ICT-248036) and the work that has taken place at the European Commission Future Content Networks Group (FCN), and the Future Media Internet Architecture Think Tank (FMIA-TT), supported by the project NextMedia.

Session 6 - Content distribution

Paper 9 - *Implementation of Adaptive Multimedia Application Concept in iDTV Environment*

Authors
Filip Hanzl, Zdenek Mikovec, Pavel Slavik (Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic)

Abstract
This paper describes a model of adaptation of multimedia application. The adaptation is based on user's progress in using a content of the application and a plan that defines long-time usage strategy of the application. The model was applied to education application but it can be used also in other use-cases. This model was designed to be easy to implement and use, and it is an alternative to robust learning models. The implementation of the model is presented on Physical Exercise application.

Keywords

Acknowledgement
Research described in the paper was partially conducted within the framework of the Vital Mind project (Research project number ICT-215387, http://www.vitalmindproject.eu), funded by the European Commission.

Paper 10 - *Using Peer to Peer and Social Networking to support new models for IP based streaming services*

Authors
Ch. Patrikakis, N. Papaoulakis, P. Sipsas, I. Schmidt (National Technical University of Athens, Greece)

Abstract
In this paper, the use of a platform for distribution of streaming multimedia over IP through and the use of Peer to Peer technologies in combination with Social Networking is presented. A particular use case scenario is given, which can offer alternative ways for Service Providers to support IP based streaming services to end users, featuring the involvement of the latter in the media distribution architecture in return for reduced pricing. To support the above and also meet the requirements for Quality of Service, state of the art encoding techniques are be utilized, which are based on scalable and multiple description coding. The platform is under implementation in the context of the FP7 project SARACEN.

Keywords
Peer to Peer, Multimedia distribution, IP networking
Acknowledgement

The work presented in the paper has been performed in the context of and has been support by the IST FP7 project SARACEN: Socially Aware, collaboRative, scAlable Coding mEdia distributioN. The authors would like to thank all project partners for their support.

Session 7 - Content summarisation

Paper 11 - *Multi-sensored vision for autonomous production of personalized video summaries*

Authors
Fan Chen, D. Delannay, and C. De Vleeschouwer (ICTEAM, Université catholique de Louvain, Belgium)

Abstract
Democratic and personalized production of multimedia content is a challenge for content providers. In this paper, members of the FP7 APIDIS consortium explain how it is possible to address this challenge by building on computer vision tools to automate the collection and distribution of audiovisual content. In a typical application scenario, a network of cameras covers the scene of interest, and distributed analysis and interpretation of the scene are exploited to decide what to show or not to show about the event, so as to edit a video from of a valuable subset of the streams provided by each individual camera. Generation of personalized summaries through automatic organization of stories is also considered. In final, the proposed technology provides practical solutions to a wide range of applications, such as personalized access to local sport events through a web portal, cost-effective and fully automated production of content for small-audience, or automatic log in of annotations.

Keywords
Automatic production, personalized summarization, multi-camera.
Acknowledgement
The author would like to thank the APIDIS partners for their support in the acquisition of the video material exploited in this work. They also thank the European Commission and the Walloon Region for funding part of this work through the FP7 APIDIS and WIST2 WALCOMO projects, respectively.

Paper 12 - *Efficient Video Indexing on the Web: A System that Leverages User Interactions with a Video Player*

Authors
Ioannis Leftheriotis , Chrysoula Gkonela and Konstantinos Chorianopoulos (Ionian Univesity, Department of Informatics, Greece)

Abstract
In this paper, we propose a user-based video-indexing method, that automatically generates thumbnails of the most important scenes of an online video stream, by analyzing users' interactions with a web video player. As a test bench to verify our idea we have extended the YouTube video player into the VideoSkip system. In addition, VideoSkip uses a web-database (Google Application Engine) to keep a record of some important parameters, such as the timing of basic user actions (play, pause, skip). Moreover, we implemented an algorithm that selects representative thumbnails. Finally, we populated the system with data from an experiment with nine users. We found that the VideoSkip system indexes video content by leveraging implicit users

interactions, such as pause and thirty seconds skip. Our early findings point toward improvements of the web video player and its thumbnail generation technique. The VideoSkip system could compliment content-based algorithms, in order to achieve efficient video-indexing in difficult videos, such as lectures or sports.

Keywords
Video, Indexing, Thumbnails, Pragmatics, Semantics, YouTube Google App Engine, Interactive TV.
Acknowledgement
This study was partially supported by the European Commission Marie Curie Fellowship program (MC-ERG-2008-230894). We are also grateful to the participants of the study and to many constructive comments by the anonymous reviewers

Abstracts of papers from 4th InterMedia Open Forum at UCMedia 2010

Paper 1 - *"Throwing Gesture as a Way for Photo Sharing between Mobile Phones and Interactive Tables"*

Authors
Fadi Chehimi, Enrico Ruzkio (University of Lancaster)

Abstract
This paper introduces a multi-user photo sharing system between mobile phones and interactive tables which allows users to "throw" photos off the phone screen onto the table surface for viewing and sharing. The introduced approach depends on having the phone held on hand rather than placed on table to allow for natural gestures and more freedom when interacting with phone-totable applications.

Keywords
Interactive tables, mobile phones, sharing
Acknowledgement
This work is supported by the NoE INTERMEDIA funded by the European Commission (NoE 038419).

Paper 2 - *"User evaluation of dynamic user-centric networking"*

Authors
Riccardo Rapuzzi (DIST, University of Genoa), Raffaele Bolla (DIST, University of Genoa), Matteo Repetto (Consorzio Nazionale Interuniversitario per le Telecomunicazioni (CNIT))

Abstract
In user-centric networking users become the endpoint of their communication sessions. This approach intrinsically accounts for mobility management, as terminal handovers and session migrations are expected when the user moves. However, effectiveness of session migration procedure is not trivial to assess, because it mainly concerns the subjective impressions that human users have about their interaction with the system, thus a common approach is to carry out user-evaluation at live demos. In this paper we

describe the user evaluation of our dynamic user-centric networking framework, done at a national science exhibition through a Voice-over-IP application running on top of it.

Keywords
User-centric networking, Mobility management, User-evaluation
Acknowledgement
The authors would like to thanks Stefano Chessa and his staff at ISTI-CNR in Pisa for their invaluable help in providing the localization by sensor networks framework used in the live demo. The authors would also thanks Ludovica Primavera who assisted them in preparing the questionnaires, interviewing visitors during the live demo and car-rying out user evaluation in a professional and qualified way. (Intermedia project ???)

Paper 3 - ***"Metadata-based Content Management and Sharing System for Improved User Experience"***

Authors
Markus Waltl, Christian Raffelsberger, Christian Timmerer, Hermann Hellwagner (Klagenfurt University, Austria)

Abstract
In the past years the amount of multimedia content on the Internet or in home networks has been drastically increasing. Instead of buying traditional media (such as CDs or DVDs) users tend to buy online media. This leads to the difficulty of managing the content (e.g., movies, images). A vast amount of tools for content management exists but they are mainly focusing on one type of content (e.g., only images). Furthermore, most of the available tools are not configurable to the user's preferences and cannot be accessed by different devices (e.g., TV, computer, mobile phone) in the home network. In this paper we present a UPnP A/V-based system for managing and sharing audio/visual content in home environments which is configurable to the user's preferences. Furthermore, the paper depicts how this system can be used to improve the user experience by using MPEG-V.

Keywords
Metadata, UPnP A/V, Content Management, Content Sharing, MPEG-V, Sensory Effects, User Experience
Acknowledgement
This work was supported in part by the EC in the context of the NoE INTERMEDIA (NoE 038419)

Paper 4 - ***"An Application Framework for Seamless Synchronous Collaboration Support in Ubiquitous Computing Environments"***

Authors
Seunghyun Han, Niels A. Nijdam, and Nadia Magnenat-Thalmann (MIRALab, University of Geneva),

Abstract
Dynamic and heterogeneous nature of ubiquitous computing environments introduces additional requirements to support synchronous collaboration. Such requirements include support of various interaction types, flexible data couplings, and transparent context adaptation. To meet those requirements, in this paper, we propose the manipulation based application model. In comparison to the presentation semantics split model, we introduce the manipulation in between the presentation and shared semantics. A manipulation is a fragment of the semantics, which is dynamically created when a presentation requires personalized interaction to the shared semantics. A manipulation

enables transparent context adaptation by migrating its states to a new manipulation of the different presentation to adapt the current context, e.g., user location change. We prototyped the proposed application framework and tested the feasibility of the framework.

Keywords
Synchronous collaboration, ubiquitous computing, application framework, context adaptation
Acknowledgement
This work is supported by the InterMedia (38419) project in the framework of the EU IST FP6 Programme.

Paper 5 - ***"An Enhanced Window Space Distributed As The Network Content"***

Authors
Suma Noji (Shobi University, Japan), Kazunobu Azuma (Kuu-kan com. Inc., Japan), Keita Yamazaki (Shobi University, Japan)

Abstract
This paper proposes a new method to create user centric content applying enhanced reality and related systems. In this content, a user finds a picture representing virtual scenery, with perspective, through a physical window frame. This system was achieved utilizing generally-available devices such as a CCD camera, a display monitor and a mobile PC. We implemented a new application to represent a moving window view consisting of multi-layered 2D pictures rather than 3D models. Computer vision technology was used for recognition of the user's head movement, which was input into the system as the interaction parameter. The enhanced window content can be distributed over a network and provides an extremely open and imaginative space for users in their everyday life.

Keywords
Interactive multimedia, Enhanced Reality, Computer Graphics, Network Content.

Abstracts of the papers from the Special Session on Future Media Internet at TEMU 2010

Paper1 - "*Towards the Deployment of a new "Media Ecosystem" For Future Internet-based Content Network*"

Authors

Y. Chen (CNRS LaBRI Lab., University of Bordeaux), D. Negru (CNRS LaBRI Lab., University of Bordeaux)

Abstract

Future multimedia services require efficient collaboration of all participants, including service providers, network operators and end-users. In this paper, we propose a novel architecture to build a "Media Ecosystem", where useful information is shared among participants to achieve Content-Awareness on the network layer, Network and User

Context-awareness on the service layer. Cross-layer optimization is thus enabled to enhance the overall system and provide an open, flexible and scalable environment for all participants. The proposed architecture allows every user – first – to access the offered multimedia services in various contexts, and – second – to share and deliver his own audiovisual content dynamically, seamlessly, and transparently to other users.

Keywords

Multimedia Service, Network/Content/Context-Awareness, Content Adaptation, Cross-layer Monitoring

Acknowledgement

The architecture and approach presented in this paper are elaborated within the ALICANTE Project, funded by the European Community's Seventh Framework Programme FP7/2007-2013 under grant agreement n°248652/ /ICT-ALICANTE/

Paper 2 - "*Indirect trust information exchange for supporting mobility in the Internet of Things*"

Authors

H. C. Leligou, P. Trakadas, T. Zahariadis, P. Karkazis, S. Voliotis (Dept. of Electrical Engineering, TEI of Chalkis, Psahna, Greece)

Abstract

Wireless Sensor Networks (WSN) is expected to be an integral part of the Internet of Things, while security is an inherent vulnerability of wireless communications, which is further aggravated in WSN due to the low computational and memory resources of the involved nodes. Moreover, the routing procedure is accomplished in a cooperative manner in these systems assigning the role of router in all active nodes. To protect against malicious behaviour, trust management systems have been proposed. Each node monitors the behaviour of its neighbours before it decides which node to use for forwarding its packets. This requires a number of interactions before each node decides about the trust-worthiness of its neighbours. However, when nodes are moving, before they complete a sufficient number of interactions, they are found in a different neighbours and any trust information built becomes obsolete and useless. In this case, the exchange of trust information between nodes accelerates the process of trust build-up at the expense of node and network resource consumption. In this paper, we present a novel trust –aware routing solution, which incorporates an indirect trust exchange model to support mobility. The performance of the proposed solution for mobile WSNs is investigated at the aid of computer simulations.

Keywords

Sensor networks, security attack, secure routing, trust model

Acknowledgement

The work presented in this paper was partially supported by the ARTEMIS Project SMART and the FP7 211998 AWISSENET project.

Paper 3 - "*Content aware searching, caching and streaming*"

Authors

T. Zahariadis (Synelixis Solutions), F. Junqueira (Yahoo!Iberia), L. Celetto (STMicroelectronics), E. Quacchio (STMicroelectronics), S. Niccolini (NEC Europe), P. Plaza (Telefonica I+D)

Abstract

The Future Media Internet is expected to be dominated by content-oriented traffic, including but not limited to P2P traffic, which does not conform to the client-server paradigm and generates unnecessary indirection overheads when users try to retrieve the desired data. In this paper, we describe the approach we are following in the EU project COAST in order to face the increasing need for a content centric internet. We aim to build a Future Content-Centric Network (FCN) overlay architecture able to find the desired data in the closest networking cache and forward it to the users in an efficient, timely and network-friendly way.

Keywords

Distributed Searching, Content Centric Internet, Netwok Architecture

Acknowledgement

This publication is based on work performed in the framework of the Project COAST-ICT-248036, which is partially funded by the European Community. The authors would like to acknowledge the contributions to the COAST Project of colleagues from STM, Synelixis, Yahoo, NEC, TID, Fraunhofer HHI, Technische Universitaet Berlin, Politechnico di Torino, Fundacio Barcelona Media Universitat Pompeu Fabra, University of California, Los Angeles, Seoul National University.

Paper 4 - "*Fast algorithm for H.264/AVC Intra Prediction Based on Discrete Wavelet Transform*"

Authors

D. Ruíz, O. Patiño, D. Jiménez, J. M. Menendez (Grupo de Aplicación de Telecomunicaciones Visuales Universidad Politécnica de Madrid, Madrid, España)

Abstract

H.264 or MPEG-4 AVC (Advanced Video Coding) is the new world-wide accepted international Standard for video coding, approved by ITU-T and ISO. New Tools have been added to improve the coding efficiency allowing a save up above of 50%, when is compared with previous standards (H.263, MPEG-2 y MPEG-4). From April 2007 there is a new set of profiles known as "all-Intra". They were born as a sub-set from the "High" profile and have reached a high impact within broadcast industry where the

highest quality video formats are demanded. The high efficiency of "all-Intra" mode in H.264 is due to Rate Distortion Optimization (RDO) technique. RDO chooses for each macroblock (MB) the best partition mode and directional prediction. However, the computational burden becomes extremely high due to huge number of prediction-prediction modes that should be evaluated. This article shows a new algorithm for fast partition mode algorithm based on Discrete Wavelet Transform (DWT). It allows reducing the number of candidate modes to those which are strictly defined for each partition. By using the local 2D-DWT over each MB, information of the homogeneity is obtained. It is got from multiresolution analysis of the transformed coefficients in each sub-band. This way it is easier to classify quickly the optimum partition mode avoiding the exhaustive seek made by RDO.

Keywords

Discrete Wavelet Transform, Intra Prediction, H.264/MPEG-4 AVC, Rate Distortion Optimization, Homogeneity analysis.

Paper 5 - "*A Management Architecture for a Multi-domain Content-Aware Network*"

Authors

E. Borcoci, R. Iorga (University POLITEHNICA Bucharest, Romania)

Abstract

This paper proposes solutions for managing a a novel virtual Content-Aware Network (CAN) overlay, oriented mainly to intelligently support multimedia content distribution over multi-domain networks. The CAN layer offers to the higher layers content aware connectivity services and cooperates with an upper service layer-which in its turn is network-aware. The CAN layer is made on top of traditional network layer. The assembly constitutes a flexible novel architecture oriented to the Future Internet needs – where the content becomes more and more significant. The paper proposes preliminary solutions for the management and control plane functionalities at CAN layer, introducing also the main vertical and horizontal interfaces with neighbor entities. This work is a continuation of the starting effort to define the requirements and architecture inside of a new European FP7 ICT research project, ALICANTE.

Keywords

Content-aware networking, network aware applications, quality of services, multimedia distribution, connectivity services, Future Internet.

Abstracts of the papers from the Workshop on Future Media Networks and IP-based TV (FMN-IPTV) at INFOCOM, April 10, 2011, Shanghai

http://imde.cio.umh.es/FMN-IPTV-2011/

These papers appear in:
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Digital Object Identifier (DOI):
10.1109/INFCOMW.2011.5928764

Session 1 Delivery and Resources Allocation

Paper 1 - "*Hard-Deadline-based Frame Filtering Mechanism Supporting the Delivery of Real-Time Video Streams*"

Author:

J. Liu (University of North Dakota, USA)

Digital Object Identifier (DOI): 10.1109/INFCOMW.2011.5928933

Page(s): 85-90

Abstract

This paper describes a cross-layer filtering mechanism which facilitates real-time video frames to meet their stringent decoding deadlines in the existence of network congestion. The basic idea is to remove the dysfunctional video frames, which have missed their decoding deadlines, from transmission as early as possible, since they no longer serve for the functioning of a real-time media streaming application. The filtering mechanism consists of a pair of components which operate at the encoder and the decoder, respectively. The decoder-side component identifies the dysfunctional frames and sends the notifications to the encoder. The encoder-side component removes the identified dysfunctional frames from transmission. By removing dysfunctional frames from transmission, the video frames that are behind the dysfunctional frames are eligible for transmission at an earlier time and are made likely to meet their decoding deadlines. Meanwhile, removing dysfunctional frames from transmission also serves to maintain a stable and low queueing delay. The filtering mechanism relies on a user-space transport stack which enables the application-controlled transmission of data segments. The effectiveness of the filtering mechanism has been demonstrated through experiments in emulated networks.

Keywords

Decoding , Delay , Encoding , Filtering , PSNR , Real time systems , Streaming media

Paper 2 - "*Utility-Based Resource Allocation for Mixed Traffic in Wireless Networks*"

Author: L. Chen, B. Wang, X. Chen, X. Zhang, D. Yang (Beijing University of Posts and Telecommunications, P.R. China)

Page(s): 91-96

Abstract

In order to solve the problem that the existing resource allocation strategies cannot give integrative consideration to QoS, spectrum efficiency for mixed traffic, this paper

proposes a utility-based resource allocation algorithm for mixed traffic in wireless networks. The unified utility function for users with different traffics is studied first. After that, the optimization model for the resource allocation is established based on the unified utility function. A heuristic algorithm based on the solution of the model is proposed in the mixed traffic scenario after analyzing the optimization model. The algorithm which has lower complexity than the existing work can automatically guarantee the QoS requirement for the real-time traffic and make a tradeoff between throughput and fairness for users with best effort traffic due to the unified utility function. Numeric simulation results indicate that the algorithm is very applicable for mixed traffic, and the resource requirements for QoS users can be satisfied preferentially in the mixed traffic scenario.

Keywords

Aggregates , Analytical models , Optimization , Quality of service , Resource management , Throughput , Wireless networks

Session 2 Delivery and Resources Allocation

Paper 3 - "*IPTVMON: A Secure Multicast Overlay Network for Load-balancing and Stable IPTV Service Using SIP*"

Author: C. Wang, Y. Chu, T. Wei (Ming Chuan University, Taiwan)

Page(s): 97-102

Abstract

IPTV is an emerging multimedia network application over prevalent Internet. IPTV over P2P streaming network preserves significant advantages in scalability over conventional client-server architecture. IPTV media content delivered in P2P networks over public Internet still preserves the issues of privacy and intellectual property. In this paper, we use SIP protocol to construct a secure application-layer multicast overlay network, called SIPTVMON, with load-balancing and stability. SIPTVMON can secure all the IPTV media delivery paths against the eavesdroppers via elliptic-curve Diffie-Hellman (ECDH), SIP signaling and AES encryption. The proposed SIPTVMON also optimizes the load-balancing overlay tree by not only the link bandwidth to minimize the service latency, but also the life time to minimize the service degradations from frequent users' joins and leaving. The performance results from simulation and experiments in very large scale demonstrate the SIPTVMON's cost-effectiveness in quality of privacy protection and stability with good perceptual quality of objective PSNR values for IPTV.

Keywords

Bandwidth , IPTV , Internet , Optimization , Protocols , Stability analysis , Streaming media

Paper 4 - "Learning in User-Centric IPTV Services Selection in Heterogeneous Wireless Networks"

Author: M. Khan, S. Marx (DAI-Labor, Technical University Berlin, Germany), H. Tembine (SUPELEC, Paris, France)

Page(s): 103-108

Abstract

It is envisioned that in IPTV services will be run on the top a heterogeneous mix of network infrastructure. The existence of multi-mode terminals enable users get associated to the best available networks according to user preferences and application specific requirements. In this paper we study the user-centric service selection for IPTV services. We propose the user satisfaction function for video services and validate this function against the objective measurement results. The users select the service based on his satisfaction function. We model the service selection problem using dynamic games. We also introduce novel scheme called cost of learning that incorporates the cost to switch to an alternate IPTV service provider. Using the Evolutionary game dynamics, we study the convergence and stability properties in user-centric IPTV service selection problem. We propose a trusted third party based architecture solution to realize the user-centric network selection. For the proof of concept simulations were run in OPNET and Mathematica.

Keywords

Convergence , Delta modulation , Games , Heuristic algorithms , IPTV , Robustness , Switches

Paper 5 - "*Digital Content Information Repository for Future Media Streaming*"

Author: K. Mishima, Hitoshi Asaeda (Keio University, Japan)

Page(s): 109-114

Abstract

Digital content delivery environment has been significantly changed due to advancements of computer and network resources. Since users who want to receive media content must first obtain the content information, a scalable system to provide the available content information to prospective users is required for the future media network. In this paper, we propose a content information repository system using distributed data storage. The proposed system not only provides scalability but manages a huge amount of content information. In this paper, we describe the design and implementation of the proposed content information repository system. The performance evaluation of the actual implementation is also provided on the PlanetLab testbed.

Keywords

Access control , Internet , Media , Protocols , Registers , Routing , Seminars

Paper 6 - "*In-network content based image recommendation system for Content-aware Network*"

Author: M. Barrilero, S. Uribe, M. Alduan, F. Sánchez, F. Alvarez (Polytechnic University of Madrid, Spain)

Page(s): 115-120

Abstract

This paper describes a novel content-based image recommendation system based on new image low level descriptors derived from the well known MPEG-7 parameters. Furthermore, it also proposes the integration of this recommendation system into a content-aware network architecture to enhance and enrich the content delivery and improve user's experience.

Keywords

Entropy , Image color analysis , Internet , Media , Multimedia communication , Transform coding

Acknowledgements

This publication is based on work performed in the framework of the Spanish national project BUSCAMEDIA (CEN-20091026), which is partially funded by the CDTI – Ministry for Science and Innovation. The authors would like to acknowledge the contributions of colleagues from the partners of the BUSCAMEDIA project.

Abstracts of the papers from the Special Session on Technologies and Applications for Social-Networks and Internet of Things Integration at CASoN 2011

Paper 1 - "*Distributing real time user generated video over P2P networks*"

Authors
Nikolaos Papaoulakis, Charalampos Z. Patrikakis, Christina Androulaki, Lemonia Argyriou, Irene Schmidt

Paper 2 - *"Personalized adaptive media interfaces for multimedia search"*

Authors Silvia Uribe, Federico Álvarez and José Manuel Menéndez

Abstract
The personalization and adaptation of user interfaces for multimedia search engines is a subject widely studied to enhance the management of multimedia content search. In this paper, we present a new multimedia semantic search engine called BUSCAMEDIA and its adaptive user interface, which allows accessing the search system regardless of the content or user device in a unified and adaptive manner. Furthermore, with the purpose of assessing interface adaptation to user's needs and preferences, search usability is also

studied. For this reason, several usability metrics have been selected and applied to create and offer a tailored design to the user.

Acknowledgements

Paper 3 - "*Multimedia Search and Retrieval over Integrated Social and Sensor Networks*"
Authors Paul Moore and John Soldatos

Abstracts of the papers from the MONET Special Issue on Mobility and Media

These papers appear in:
Mobile Networks and Applications, Springer. June 2011. Volume 16, Number 3, Page(s): 351-360, DOI: 10.1007/s11036-010-0259-1

Editorial - "Editorial for Mobility and User-Centric Media"
Authors
Petros Daras, Oscar Mayora-Ibarra, Isidro-Laso Ballesteros

Page(s): 350

Paper 1 - "*Seamless Content Delivery over Mobile 3G+/4G Networks*"
Authors
Theodore Zahariadis, Karsten Grüneberg, Luca Celetto

Page(s): 351-360

Abstract
Widespread and affordable mobile broadband access opens up opportunities for delivery of new streaming services everywhere and anytime. However, what is expected to fundamentally change the way how people use the network is the ability to produce, and seamlessly deliver and share their own multimedia content. In this paper we describe the content distribution and adaptation architecture that we have implemented and tested, the results utilising new coding formats of video coding (e.g. SVC, MVC) and new methods for increasing the robustness of video delivery.

Keywords
scalable video coding – multi-view coding – multi-description coding – cross layer adaptation – 3G+/4G mobile networks

Acknowledgements
Part of this work has been funded by the EC under projects FP-ICT-214063 SEA, FP7-ICT-248036 COAST and FP7-ICT-249065 NextMedia.

Paper 2 - "*Visual Targeted Advertisement system based on user profiling and content consumption for Mobile Broadcasting Television*"

Authors
Silvia Uribe, Federico Alvarez, José Manuel Menéndez, Guillermo Cisneros

Page(s): 361-374

Abstract
Content personalisation is one of the main aims of the mobile media delivery business models, as a new way to improve the user's experience. In broadcasting networks, the content is sent "one to many", so a complete personalisation where the user may select any content is not possible. But using the mobile bidirectional return channel (e.g. UMTS connection) visual targeted advertising can be performed in a simple way: by off-line storing the advertisement for selectively replacing the normal broadcasted advertisement. In fact, these concepts provide powerful methods to increase the value of the service, mainly in mobile environments. In this article we present a novel intelligent content personalisation system for targeted advertising over mobile broadcasting networks and terminals, based on user profiling and clustering, as a new solution where the use of content personalisation represents the competitive advantage over traditional advertising.

Keywords
content personalisation – targeted advertising – mobile television – clustering – profile segmentation – DVB-H

Paper 3 - "*A system for mobile active music listening based on social interaction and embodiment*"

Authors
Giovanna Varni, Maurizio Mancini, Gualtiero Volpe, Antonio Camurri

Page(s): 375-384

Abstract
Social interaction and embodiment are key issues for future User Centric Media. Social networks and games are more and more characterized by an active, physical participation of the users. The integration in mobile devices of a growing number of sensors to capture users' physical activity (e.g., accelerometers, cameras) and context information (GPS, location) supports novel systems capable to connect audiovisual content processing and communication to users social behavior, including joint movement and physical engagement. In this paper, a system enabling a novel paradigm for social, active experience of sound and music content is presented. An instance of such a system, named Sync'n'Move, allowing two users to explore a multi-channel pre-recorded music piece as the result of their social interaction, and in particular of their synchronization, is introduced. This research has been developed in the framework of the EU-ICT Project SAME (www.sameproject.eu) and has been presented at Agora

Festival (IRCAM, Centre Pompidou, Paris, June 2009). In that occasion, Sync'n'Move has been evaluated by both expert and non expert users, and results are briefly presented. Perspectives on the impact of such a novel paradigm and system in future User Centric Media are finally discussed, with a specific focus on social active experience of audiovisual content.

Keywords
Mobile active music listening – social signal processing – synchronization

Paper 4 - "*An Adaptive Control System to Deliver Interactive Virtual Environment Content to Handheld Devices*"

Authors
Gianluca Paravati, Andrea Sanna, Fabrizio Lamberti, Luigi Ciminiera

Page(s): 385-393

Abstract
Wireless communication advances have enabled emerging video streaming applications to mobile handheld devices. For example, it is possible to display and interact with complex 3D virtual environments on mobile devices that don't have enough computational and storage capabilities (e.g. smart phones, PDAs) through remote rendering techniques, where a server renders 3D data and streams the corresponding image flow to the client. However, due to fluctuations in bandwidth characteristics and limited mobile device CPU capabilities, it is extremely challenging to design effective systems for streaming interactive multimedia over wireless networks. This paper presents a novel approach based on a controller that can automatically adjust streaming parameters basing on feedback measures from the client device. Experimental results prove the effectiveness of the proposed solution in coping with bandwidth changes, thus providing high Quality of Service (QoS) in remote visualizations.

Keywords
Video streaming to mobile devices – closed-loop controller – QoS – remote visualization

Paper 5 - "*Authentications and Key Management in 3G-WLAN Interworking*"

Authors
Xinghua Li, Xiang Lu, Jianfeng Ma, Zhenfang Zhu, Li Xu, Young Ho Park

Page(s): 394-407

Abstract
The successful deployment of WLAN for high speed data transmission and 3G cellular systems for wide coverage and global roaming has emerged to be a complementary platform for wireless data communications. But security in the 3G-WLAN interworking, especially the efficient authentication and valid key management, has been remaining a challenging issue. What's more, some emerging security challenges are neglected by 3GPP specifications as well as the previous studies. This paper first analyzes and evaluates the current contributions in this field, and then puts forward

some design issues. Thereafter, by modifying the EAP-AKA keying framework we propose an improved authentication scheme which enables a WLAN user to efficiently access packet switch services through the 3G networks. What's more, through the new keying framework the user can efficiently realize the future re-authentications and handover authentications. The proposed authentication scheme, the corresponding re-authentications and handover authentications are simulated, and results indicate that our scheme can reduce authentication latency significantly.

Keywords
Authentication – key management – 3G systems – wireless local area network (WLAN)

Acknowledgements
This work is supported by the National Natural Science Foundation of China (60702059, 60872041, 60972078), the Key Program of National Natural Science Foundation of China (60633020), the Opening Foundation of Key Lab of Cryptglogic Technology and Information Security, Ministry of Education, Shandong University, funds of Key Lab of Fujian Province University Network Security and Cryptology (09A001), the Fundamental Research Funds for the Central Universities, Mobile Network Security Technology Research Center of Kyungpook National University.

Springer Journal on Multimedia Tools: Special Issue on User Centric Media

Paper 1 - An architectural approach towards Future Media Internet

Authors
Theodore Zahariadis; Federico Alvarez; John Paul Moore Olmstead

Abstract
Internet is the most important information exchange means nowadays and has become the core communication environment, not only for business relations, but also for social and human interaction. Yet, the immense success of Internet has created even higher hopes and expectations for new immersive and real-time applications and services, without guarentees that the Internet will be able to support them. To face the new requirements coming from these new applications and services, several architectural approaches have been proposed. Regarding media, content-centric architectural approaches have been proposed to meet the new requirements, following either an evolutionary or a clean-slate approach. This paper highlights the main architectural functions and presents a revolutionary protocol stack and a holistic architectural approach that targets Future Media Internet (FMI). Among the architectural functions and the holistic approach, the paper presents solutions to overcome the current content delivery limitations, moving intelligence in the network and converting it into a content oriented/centric network, that goes well beyond current CDNs; supporting the functionalities for producing, publishing, caching, finding and consuming content; and a novel Future Media Internet protocol stack and network architecture.

Keywords

Open Future Internet Architecture, Media Internet, User-Centric, Content-awareness, Content location awareness

Acknowledgement

This work has been partially funded by the EC via the projects FP7-248036-COAST and FP7- 249065 NextMedia. Moreover, the authors would like to acknowledge the EC special interest group Future Media Internet Architecture-Think Tank (FMIA-TT) for various contributions.

Paper 2 - Automatic Generation of 3D Outdoor and Indoor Building Scenes from a Single Image

Authors
Georgios Vouzounaras; Petros Daras; Michael G. Strintzis

Abstract
In this paper, a novel approach for creating 3D models of building scenes is presented. The proposed method is fully automated and fast, and accurately reconstructs both outdoor images of a building and indoor scenes, with perspective cues in real-time, using only one image. It combines the extracted line segments to identify the vanishing points of the image, the orientation, the different planes that are depicted in the image and concludes whether the image depicts indoor or outdoor scenes. In addition, the proposed method efficiently eliminates the perspective distortion and produces an accurate 3D model of the scene without any intervention from the user. The main innovation of the method is that it uses only one image for the 3D reconstruction, while other state-of-the-art methods rely on the processing of multiple images. A website and a database of 100 images were created to prove the efficiency of the proposed method in terms of time needed for the 3D reconstruction, its automation and 3D model accuracy and can be used by anyone so as to easily produce user-generated 3D content: http://3d-test.iti.gr:8080/3d-test/3D_recon/

Keywords

Single-view 3D reconstruction; projective correction; vanishing point detection; uncalibrated camera

Acknowledgement

This work was supported by the EU FP7 project 3DLife Network of Excellence project, ICT-247688.

Paper 3 - Modeling User Perception of 3D Video Based on Ambient Illumination Context for Enhanced User Centric Media Access and Consumption

Authors
Gokce Nur; Hemantha Kodikara Arachchi; Safak Dogan; Ahmet M. Kondoz

Abstract
For enjoying 3D video to its full extent, it is imperative that access and consumption of it is user centric, which in turn ensures improved 3D video perception. Several important factors including video characteristics, users' preferences, contexts prevailing in various usage environments, etc have influences on 3D video perception. Thus, to assist efficient provision of user centric media, user perception of 3D video should be modeled considering the factors affecting perception. Considering ambient illumination context to model 3D video perception is an interesting research topic, which has not been particularly investigated in literature. This context is taken into account while modeling video quality and depth perception of 3D video in this paper. For the video quality perception model: motion and structural feature characteristics of color texture sequences; and for the depth perception model: luminance contrast of color texture and depth intensity of depth map sequences of 3D video are used as primary content related

factors in the paper. Results derived using the video quality and depth perception models demonstrate that these models can efficiently predict user perception of 3D video considering the ambient illumination context in user centric media access and consumption environments.

Keywords

3D video, 3D user perception model, depth perception, user centric 3D media access and consumption, video quality perception.

Acknowledgement

Paper 4 - QoE-driven and network-aware adaptation capabilities in mobile multimedia applications

Authors

Jose Oscar Fajardo.;Ianire Taboada;Fidel Liberal

Abstract

This paper deals with the analysis of mobile multimedia services, with special focus on current media resolutions for mobile handsets. Since variable network conditions entail variable quality levels, nowadays several applications implement some kind of dynamic service adaptation in order to mitigate these effects. This paper analyzes the service performance from an end-to-end perspective, taking into account the several agents involved in the service provision. From a detailed study, the different possible sources of degradations are identified as well as their impact into the expected quality as perceived by end users. Based on the obtained results, the possible effects of different adaptation capabilities are discussed. The identification of the main source of degradations at the destination endpoint improves the adaptation capabilities and enhances the service performance in terms of perceived quality.

Keywords

Mobile multimedia, Quality of Experience, adaptation, network degradation

Acknowledgement

The research leading to these results has received funding from the European Community's Seventh Framework Programme FP7/2007-2013 under grant agreement num. 214751/ /ICT- ADAMANTIUM/.

Paper 5 -User-Centric Mobility Management for Multimedia Content Access

Authors

Matteo Repetto; Raffaele Bolla; Riccardo Rapuzzi

Abstract

Current mobility protocols and architectures are mainly targeted to devices or applications and they usually lack the ability to support user-centric paradigms; moreover, they usually face a single aspect of the problem, i.e., terminal handover or session mobility. Full mobility support is only available to specific applications or protocols (e.g., SIP) but these approaches do not exploit all facilities for movement detection at the network/link layers and do not allow to use the same framework for different applications.

This paper proposes a generic mobility framework for terminal handover and session migration. It pursues the user-centric paradigm and builds a cross-layer architecture, yielding to a high level of generality, applicability and flexibility.

Unlike other approaches, it does not require any modification in correspondent peers and works with a minimal network infrastructure. Software implementations are described for two representative real- time multimedia applications, i.e., media streaming and interactive conference.
The effectiveness of the framework was analyzed by means of both performance measurements in
local and Internet testbeds and user evaluation during a live demo conducted at a national science exhibition.

Keywords

Mobility architecture, pervasive communication, user-centric media, personal address.

Acknowledgement

The authors would like to thanks Stefano Chessa and his staff at the Institute of Information Science and Technologies (ISTI) of the Italian National Research Council (CNR) in Pisa for their invaluable help in providing the localization by the sensor network framework used in the live demo. The authors would also like to thanks the psychologist Ludovica Primavera for his assistance in preparing and analyzing the questionnaires for the user evaluation.

Paper 6 -CStream: Neighborhood Bandwidth Aggregation for Better Video Streaming

Authors

Thangam Seenivasan; Mark Claypool

Abstract

Despite the popularity of watching videos online, challenges still remain in video streaming in many scenarios. Limited home broadband and mobile phone 3G bandwidths mean many users stream videos at compromised quality. To provide additional bandwidth for streaming, we propose Cstream, a system that aggregates bandwidth from multiple cooperating users in a neighborhood environment for better video streaming. CStream exploits the fact that wireless devices have multiple network interfaces and connects cooperating users with a wireless ad-hoc network to aggregate their unused downlink Internet bandwidth. CStream dynamically generates a streaming plan to stream a single video using multiple connections, continuously adapting to changes in the neighborhood and variations in the available bandwidth. CStream is developed and evaluated on a test bed of computers, allowing for a detailed, controlled evaluation of performance. Analysis of the results shows a linear increase in throughput over single-connection streaming and improved video quality as the number of cooperating users in a neighborhood increase.

Keywords

video streaming ; wireless ; bandwidth aggregation

IEEE Communications Magazine: Special Issue on Future Media Internet

These papers appear in:

Communications Magazine, IEEE. March 2011. Volume: 49 Issue:3. ISSN: 0163-6804.

Page(s): 110 - 157

Editorial - "Future media Internet"

Guest Editors

Zahariadis, T. Pau, G. Camarilo, G.

Page(s): 110 - 111

Digital Object Identifier (DOI)

10.1109/MCOM.2011.5723807

Abstract

The Internet has become the most important medium for information exchange and the core communication environment for business relations as well as for social interactions. Every day millions of people all over the world use the Internet for a plethora of daily activities including searching, information access and exchange, multimedia communications enjoyment, buying and selling goods, and keeping in touch with family and friends, just to name a few. This article discusses future media Internet.

Keywords

Computer architecture , Internet , Multimedia communication , Peer to peer computing , Special issues and sections , Streaming media , Technology forecasting , Three dimensional displays

Paper 1 - "Curling: Content-ubiquitous resolution and delivery infrastructure for next-generation services"

Authors

Wei Koong Chai (University College London), Ning Wang (University of Surrey), Ioannis Psaras and George Pavlou (University College London), Chaojiong Wang (University of Surrey), Gerardo García de Blas and Francisco Javier Ramon Salguero (Telefónica Investigación y Desarrollo S.A.U.), Lei Liang (University of Surrey), Spiros Spirou (Intracom SA Telecom Solutions), Andrzej Beben (Warsaw University of Technology), Eleftheria Hadjioannou (PrimeTel PLC)

Page(s): 112 - 120

Digital Object Identifier (DOI)

10.1109/MCOM.2011.5723808

Abstract

CURLING, a Content-Ubiquitous Resolution and Delivery Infrastructure for Next Generation Services, aims to enable a future content-centric Internet that will overcome the current intrinsic constraints by efficiently diffusing media content of massive scale. It entails a holistic approach, supporting content manipulation capabilities that encompass the entire content life cycle, from content publication to content resolution and, finally, to content delivery. CURLING provides to both content providers and customers high flexibility in expressing their location preferences when publishing and

requesting content, respectively, thanks to the proposed scoping and filtering functions. Content manipulation operations can be driven by a variety of factors, including business relationships between ISPs, local ISP policies, and specific content provider and customer preferences. Content resolution is also natively coupled with optimized content routing techniques that enable efficient unicast and multicast- based content delivery across the global Internet.

Keywords

Filtering , IP networks , Internet , Next generation networking , Registers , Ubiquitous computing

Acknowledgement

This work was undertaken under the Information Society Technologies (IST) COMET project, which is partially funded by the Commission of the European Union. We would also like to thank our project partners who have implicitly contributed to the ideas presented here.

Paper 2 - "A Survey on content-oriented networking for efficient content delivery"

Page(s): 121 - 127

Digital Object Identifier (DOI)

10.1109/MCOM.Bertrand Mathieu and Selim Ellouze, Orange Labs

Nico Schwan, Bell Labs

David Griffin and Eleni Mykoniati, University College London

Toufik Ahmed, University Bordeaux-1

Oriol Ribera Prats, Telefonica I&D 2011.5723809

Authors

Jaeyoung Choi, Jinyoung Han, Eunsang Cho, Ted "Taekyoung" Kwon, and Yanghee Choi, (Seoul National University)

Abstract

As multimedia contents become increasingly dominant and voluminous, the current Internet architecture will reveal its inefficiency in delivering time-sensitive multimedia traffic. To address this issue, there have been studies on contentoriented networking (CON) by decoupling contents from hosts at the networking level. In this article, we present a comprehensive survey on content naming and name-based routing, and discuss further research issues in CON. We also quantitatively compare CON routing proposals, and evaluate the impact of the publish/subscribe paradigm and in-network caching.

Keywords

IP networks , Internet , Multimedia communication , Network topology , Peer to peer computing , Routing , Streaming media

Acknowledgement

This publication is partially based on work performed in the framework of the Project COAST- ICT-248036, which is supported by the European Community. This work is

also supported by NAP of Korea Research Council of Fundamental Science and Technology, and the IT R&D program of MKE/KEIT (10035245: Study on Architecture of Future Internet to Support Mobile Environments and Network Diversity). The ICT at Seoul National University provides research facilities. Professor Ted "Taekyoung" Kwon was on sabbatical leave at Rutgers University, where he had in-depth discussions with Professor Dipankar Raychaudhuri.

Paper 3 - "Peer-to-peer streaming of scalable video in future Internet applications"

Page(s): 128 - 135

Digital Object Identifier (DOI)

10.1109/MCOM.2011.5723810

Authors

Naeem Ramzan (Queen Mary University of London), Emanuele Quacchio (STMicroelectronics), Toni Zgaljic and Stefano Asioli (Queen Mary University of London), Luca Celetto (STMicroelectronics), Ebroul Izquierdo (Queen Mary University of London), Fabrizio Rovati (STMicroelectronics)

Abstract

Scalable video delivery over peer-to-peer networks appears to be key for efficient streaming in emerging and future Internet applications. Contrasting the conventional server-client approach, here, video is delivered to a user in a fully distributed fashion. This is, for instance, beneficial in cases where a high demand for a particular video content is imposed, as different users can receive the same data from different peers. Furthermore, due to the heterogeneous nature of Internet connectivity, the content needs to be delivered to a user through networks with highly varying bandwidths. Moreover, content needs to be displayed on a variety of devices featuring different sizes, resolutions, and computational capabilities. If video is encoded in a scalable way, it can be adapted to any required spatio-temporal resolution and quality in the compressed domain, according to a peer bandwidth and other peers¿ context requirements. This enables efficient low-complexity content adaptation and interoperability for improved peer-to-peer streaming in future Internet applications. An efficient piece picking and peer selection policy enables high quality of service in such a streaming system.

Keywords

Bandwidth , Internet , Peer to peer computing , Protocols , Static VAr compensators , Streaming media , Technology forecasting

Acknowledgement

The authors wish to thank Simone Zezza from the Department of Electronics, Politecnico di Torino, for his help with revising this manuscript. This research has been partially funded by the European Commission under contract FP7- 247688 3DLife, FP7-248474 SARACEN, and FP7-248036 COAST

Paper 4 - "Improving end-to-end QoE via close cooperation between applications and ISPs"

Page(s): 136 - 143

Digital Object Identifier (DOI)

10.1109/MCOM.2011.5723811

Authors

Bertrand Mathieu and Selim Ellouze (Orange Labs), Nico Schwan (Bell Labs), David Griffin and Eleni Mykoniati (University College London), Toufik Ahmed (University Bordeaux-1), Oriol Ribera Prats (Telefonica I&D)

Abstract

In recent years there has been a trend for more user participation in Internet-based services leading to an explosion of user-generated, tailored, and reviewed content and social-networking- based applications. The next generation of applications will continue this trend and be more interactive and distributed, putting the prosumers at the center of a massively multiparticipant communications environment. Furthermore, future networked media environments will be high-quality, multisensory, multi-viewpoint and multistreamed, relying on HD and 3D video. These applications will place unprecedented demands on networks between unpredictable and arbitrarily large meshes of network endpoints. We advocate the development of intelligent cross-layer techniques that, on one hand, will mobilize network and user resources to provide network capacity where it is needed, and, on the other hand, will ensure that the applications adapt themselves and the content they are conveying to available network resources. This article presents an architecture to enable this level of cooperation between the application providers, the users, and the communications networks so that the quality of experience of the users of the application is improved and network traffic optimized.

Keywords

Encoding , Internet , Media , Peer to peer computing , Servers , Streaming media , Three dimensional displays

Acknowledgement

This work was supported by the ENVISION project (http://www.envision-project.org), a research project partially funded by the European Union's 7th Framework Program (contract no. 248565). The authors wish to thank all project participants for their valuable comments and contributions to the work described in this article.

Paper 5 - "System architecture for enriched semantic personalized media search and retrieval in the future media internet"

Page(s): 144 - 151

Digital Object Identifier (DOI)

10.1109/MCOM.2011.5723812

Authors

María Alduán, Faustino Sánchez, Federico Álvarez, David Jiménez, and José Manuel Menéndez (Universidad Politécnica de Madrid), Carolina Cebrecos (Indra Sistemas S.A.)

Abstract

This article describes a novel system and its architecture to handle, process, deliver, personalize, and find digital media, based on continuous enrichment of the media

objects through the intrinsic operation within a content oriented architecture. Our system and its architecture provide a solution that enhances the delivery, sharing, experience, and exchange by providing the methods to semantically describe contents with a multilingual-multimedia-multidomain ontology; annotate the content against this ontology; process the content and adapt it to the network and the network status, taking into account the user behavior and the user terminal device to consume the content; and enriching the content at any additional iteration or process, over a content-oriented architecture based on standardized interfaces. The article presents the architecture, modules, functionalities, and procedures, including the system application model to the future media Internet concepts for content-oriented networks.

Keywords

Internet , Media , Multimedia communication , Ontologies , Semantics , Syntactics

Acknowledgement

This publication is based on work performed in the framework of the Spanish national project BUSCAMEDIA (CEN- 20091026), which is partially funded by the CDTI — Ministry for Science and Innovation and the project AMURA (TEC2009-14219-C03-01). The authors would like to acknowledge the contributions of colleagues from the partners of the BUSCAME DIA project.

Paper 6 - "Automatic creation of 3D environments from a single sketch using content-centric networks"

Page(s): 152 - 157

Digital Object Identifier (DOI)

10.1109/MCOM.2011.5723813

Authors

Theodoros Semertzidis (Informatics and Telematics Institute and Aristotle University of Thessaloniki), Petros Daras (Informatics and Telematics Institute), Paul Moore (Atos Research & Innovation), Lambros Makris (Informatics and Telematics Institute), Michael G. Strintzis (Informatics and Telematics Institute and Aristotle University of Thessaloniki)

Abstract

In this article a complete and innovative system for automatic creation of 3D environments from multimedia content available in the network is presented. The core application provides an interface where the user sketches in 2D the scene that s/he aims to build. Moreover, the GUI application exploits the similarity search and retrieval capabilities of search-enabled content-centric networks to fetch 3D models that are similar to the drawn 2D objects. The retrieved 3D models act as the building components for the automatically constructed 3D scene. Two CCN-based applications are also described, which perform the query routing and similarity search on each node of the CCN network.

Keywords

Graphical user interfaces , IP networks , Logic gates , Protocols , Search problems , Solid modeling , Three dimensional displays

Acknowledgement

This work was supported by the EU FP7 project 3DLife, ICT-247688.

Abstracts of the NextMedia Acknowledged Papers

NextMedia project has been acknowledged in the following papers:

"Architectures for Future Media Internet,"
M. Alduán, F. Álvarez, Th. Zahariadis, N. Nikolakis, F. Chatzipapadopoulos, D. Jiménez, J. Manuel Menéndez,

2nd international conference on User Centric Media (UCMedia), Palma Majorca, 1-3 September 2010.

Future Media Internet Research Challenges and the Road Ahead.
Editors
Isidro Laso-Ballesteros, Petros Daras, Theodore Zahariadis, Federico Alvarez, Paul Moore, Oscar Mayora, Ebroul Izquierdo,

Luxembourg: Publications Office of the European Union, 2010. ISBN 978-92-79-15864-3

Paper - "Towards a Content-Centric Internet"
Authors
Theodore Zahariadis (Synelixis Solutions Ltd, Greece), Petros Daras (CERH/ITI, Thermi, Thessaloniki, Greece), Jan Bouwen (Alcatel-Lucent, Belgium), Norbert Niebert (Ericsson, Germany), David Griffin (University College London, UK), Federico Alvarez (Universidad Politécnica de Madrid, Spain), Gonzalo Camarillo (Ericsson, Finland)

Appears in:
Towards the Future Internet - Emerging Trends from European Research. G. Tselentis et al. (Eds.) IOS Press, May 2010. ISBN 978-1-60750-538-9. Page(s): 209 - 213.

Digital Object Identifier (DOI):
10.3233/978-1-60750-539-6-22

Abstract
In most cases, current Internet architecture treats content and services simply as bits of data transported between end-systems. While this relatively simple model of operation had clear benefits when users interacted with wellknown servers, the recent evolution of the way the Internet is used makes it necessary to create a new model of interaction between entities representing content. In this paper we study the limitations of current Internet and propose a new model, where the smallest addressable unit is a content object, regardless of its location.

Keywords
Content-Centric Internet, Content Networks, Internet Architecture

Paper - "Efficient Streaming in Future Internet"

Authors
Theodore Zahariadis, Ahola Jari, Roberta Fracchia, Federico Alvarez, Thierry Filoche, Harilaos Koumaras

Appears in:
Towards the Future Internet - Emerging Trends from European Research. G. Tselentis et al. (Eds.) IOS Press, May 2010. ISBN 978-1-60750-538-9. Page(s): 209 - 213.

ANNEX II: Call for papers

Personalization in Media Delivery Platforms Workshop at 1st UCMedia 2006

CFP: http://www.usercentricmedia.org/workshops/permed/cfp.shtml

Call for papers

PerMed 2009 - Personalization in Media Delivery Platforms

9 - 11 December- Venice

This workshop will be of interest to most researchers in the Future Media Internet communities:

- Network specialists
- End user media application developers
- Identity, profile and context management specialists
- Video encoding specialists
- Content providers
- Usability experts

Workshop Organizers:

Steering Committee

Paul Moore, Atos Origin
David Salama, Atos Origin
Theodore Zahariadis, Synelixis
Charalampos Z. Patrikakis, National Technical University Athens
Nikolaos Chr. Papaoulakis, National Technical University Athens
Stefan Poslad, Queen Mary University
Mario Nunes, INOV

Organizing Committee

Conference General Chair

Paul Moore (Atos Origin)

First Session Chair

Stefan Poslad (Queen Mary University)

Second Session Chair

Theodore Zahariadis (Synelixis)

Important Dates

- Paper submissions deadline – September 13, 2009
- Notifications of Acceptance – October 19, 2009

2nd UCMedia Conference, Mallorca 2010

CFP: http://www.usercentricmedia.org/cfp.shtml

Call for papers

2nd International ICST Conference on User Centric Media (UCMedia 2010)

Palma de Mallorca, September 1-3, 2010

http://www.usercentricmedia.org/

The aim of the 2nd International ICST Conference on User Centric Media, UCMEDIA 2010, is to enhance the understanding of recent and anticipated advances in user centric media creation, discovery, distribution and consumption in Future Internet, and their applications to entertainment, education, information and arts. UCMedia seeks contributions from different domains, related to technology, business, the creative process and user-based studies. Research based on cross disciplinary approaches is particularly welcomed.

Keynote speaker: Leonardo Chiariglione, CEDEO.net and SmartRM, Inc.

Scope

The focus of UCMedia 2010 is on "The user in Future Media Internet". UCMedia welcomes contributions from academics, technologists, artists, designers, industry representatives and analysts. Papers are solicited on the following topics (but not limited to):

- User Media forms and production
    - User centric media services in the extended home
    - Enhanced content representations (3DTV, Ultra HD TV, holograms, etc).
    - Implementation and experimentation of Future Internet applications e.g. virtual 3D worlds, collaborative platforms and holograms
    - Novel Networked Media Systems to support human creativity at the cross roads of ICT and arts/design research
    - User generated content creation, management and consumption systems
    - Framed communication experiences
    - New forms of interactive storytelling
- Media delivery
    - Open Future Internet network architectures for seamless, scalable multimedia content delivery

- Content-awareness and content location awareness
- Adaptive, polymorphic and reconfigurable systems for Future Media Internet environments
- Content aware networks and network aware content/applications
- Peer-to-peer streaming prototypes and their implementation in the Future Media Internet
- Cross-layer dynamic adaptation and end-to-end QoS issues for heterogeneous networks
- Innovative, adaptive and self-configuring mobile and wireless applications
- Encoding technologies for maintaining the integrity and optimise the quality of experience.
- Content distribution and distributed caching for multimedia content streaming

- User Media access, discovery and consumption
  - User Communities Systems and Platforms
  - Content adaptability and enrichment
  - Search and retrieval of networked multimedia content
  - Personalized Access to Media Systems
  - Trust, privacy, security and protection

Publication

CD proceedings will be distributed during the conference days and will be published by Springer LNICST.

Selected papers of the conference will be invited to submit extended versions to the Springer Multimedia Tools and Applications Jounal Special Issue of on User Centric Media.

Best paper award

A Best Paper Award, sponsored by ICST, will be awarded to UCMedia 2010 best paper. The award will consist of commemorative diploma and a waiver for the registration fee of User Centric Media Conference 2011.

Important Dates

Submission Deadline: June 4th, 2010

Notification to authors: July 5th, 2010

Camera-ready papers due (hard deadline): July 19th , 2010

Organizing Committee

General Chair

Federico Alvarez, Technical University of Madrid, Spain

Program Chair

Cristina Costa, CREATE-NET

Local Arrangements

Chair Antonio Bibiloni, UIB, Spain

Workshops Chairs

Francesco Calabrese, MIT, U.S.

Mauro Martino, MIT,, US

Special Session on Future Media Internet at TEMU 2010

TEMU 2010 – Int. Conf. On Telecommunications and Multimedia
July 14-16, 2010, Chania, Greece
Special Session: "Future Media Internet"

TEMU2010 (International Conference on Telecommunications and Multimedia (Chania, Greece) 14-16 July 2010) is an international conference to present new and original research results and the latest state-of-the-art in Telecommunications and Multimedia. It fosters communication and discussion among researchers, scientists and students working in the design, implementation and application of telecommunications and multimedia fields. The conference will provide three-day Scientific Program, including presentations of invited and regular papers from manufacturers, academia and services providers.
NextMedia is organising a special session called "Future Media Internet" in the event: see http://www.temu.gr/2010/filez/FMI.pdf for more information.
Scope
The Internet is incontrovertibly a great success that has changed our social and economic world. Today, over one billion users access the Internet on regular basis, more than 100 million users have downloaded at least one (multi)media file, and over 47 million of them do so regularly, searching in more than 160 exabytes of content. The content is expected to rise to more than 990 exabytes before 2012, fuelled mainly by users. Inmost cases however, today's Internet treats content and services simply as bits of data transported between end-systems/end-hosts. While this relatively simple model of operation had clear benefits when users interacted with well-known servers, the recent evolution of the way the Internet is used makes it necessary to create new models of interaction between entities representing content. This Special Session aims to target issues related to the Future Media Internet.
Topics

- Content Centric Networking
- Content Centric Routing
- Optimised storage and network caching
- Content indexing and identifying
- Optimised content searching, finding and retrieval

- Content recommendation systems
- 3D media and new user experience
- Efficient Streaming in the Future Internet
- Virtualisation and Sensor Networks
- Smart Cities/Internet of Things
- Session Moderator

Organizer
Dr. Theodore Zahariadis, Technological Educational Institute of Chalkidas, Greece

Workshop on Future Media Networks and IP-based TV (FMN-IPTV) at INFOCOM, April 10, 2011, Shanghai

Workshop Home Page: http://imde.cio.umh.es/FMN-IPTV-2011/

Scope and Topics
The International Workshop on Future Multimedia Networks and IP-based TV (FMN-IPTV) will be a half-day event focusing on the recent disruptions in the future media networks and how these will shape the IP-based television of the future. It is believed that holding it in conjunction with INFOCOM will provide the community with recent advances in IP video that will impact the media networks of the future. The workshop will address the Future Media Internet and IP-based TV, which will not only radically change the telecommunications and the entertainment industries, but they are also expected to stimulate and enhance creativity, professional productivity and community relations. In particular, the workshop intends to have ample time for discussion amongst participants on research topics of emerging trends in the area of seamless media delivery and how the networks, current and future, will support the converged multimedia.
The workshop encourages submissions to attract attendance from both academia and industry. Thus, the workshop seeks innovative technical papers that consolidate and present the leading-edge research prototype development, deployment and performance studies in the following areas:

- Content centric network architectures for scalable multimedia content delivery
- Distributed caching in the network for multimedia content
- Search and retrieval of multimedia objects over distributed networks
- Scalable multimedia compression, transmission, concealment
- Network coding and streaming
- Encoding technologies for maintaining the integrity and optimise the quality of experience
- Cross-layer dynamic adaptation and end-to-end QoS issues for heterogeneous networks
- Reputation, trust and incentives in peer-to-peer streaming systems and sensor networks
- Network design impacts of IP-based video convergence
- Architectures for converged systems especially those targeting multi screens and combining mobility
- Video convergence, Mobile TV, Mobile Social TV applications and interactivity

- Video Content Distribution, Networks and P2P architectures for distributed services
- User experience and user experience design
- Innovative methods for evolving IP-based TV services (including algorithmic aspects of computer networking oriented to billing, pricing and advertising models, large-scale data management, etc.)

Important Dates

Regular Paper Abstract Submission: January 5, 2011 (optional)
Regular Paper Submission: January 17, 2011
Notification of Regular Paper Acceptance: February 22, 2011
Camera-Ready Paper Due: March 10, 2011
FMN-IPTV Workshop: April 10, 2011

Program Chairs

Oscar M Bonastre, University Miguel Hernandez (UMH), Spain
Oscar Mayora, CREATE-NET International Research Center, Italy
Federico Alvarez, Technical University of Madrid (UPM), Spain

Steering Committee

Jon Crowcroft, University of Cambridge, United Kingdom
Pablo Cesar, Centrum Wiskunde & Informatica, Netherlands
Oscar M Bonastre, University Miguel Hernandez, Spain
Theodore Zahariadis, Synelixis, Greece
Petros Daras, CERTH/ITI, Greece
Paul Moore, ATOS Origin, Spain

First IPSoN 2011 Workshop - Integration of Physical and Social-Network Sensing and Mining

CFP: http://www.dirf.org/diwt2011/workshop.asp

CALL FOR PAPERS
First IPSoN 2011 International Workshop
Integration of Physical and Social-Network Sensing & Mining

Co-located with Digital Information and Web Technologies Conference ICADIWT 2011
University of Wisconsin-Stevens Point, USA. August 4-6, 2011.

Accepted workshop papers will be published in the ICADIWT 2011 proceedings and indexed in IEEE Xplore

Mobile devices, wearables and wireless sensor networks have been lately used to monitor and sense real world. On one hand, processing of information that has been sensed in the real world is used to detect human activities, environmental and urban state, healthcare conditions, proximity and concentrations of people, epidemic trends, network and routing planning and other natural and human-generated situations describing aspects of the real world. On the other hand, the evolution of the web in terms of user-generated content and the proliferation of online social networks have generated tremendous amount of information, describing dynamic interaction of people

with each other, with their surroundings and brought together through their common interests in both, virtual and real worlds.

IPSoN Workshop intends to provide a forum for discussions on the topic of Physical and Social-Network Sensing & Mining Integration. The Workshop will explore different challenges involved in the integration of data originated from both sources, physical and online taking into consideration (but not limited) to different research topics such as large scale data integration, participatory sensing from multiple sources, correlation of physical-digital information, geo-located and online social networks correlations, trust and security,

IPSoN Workshop will foster discussions and accept submissions on a comprehensive list of challenges; including, but not limited to:

- Mobility and geo-localization and their impact to/from social networks
- Wireless sensor networks, mobile devices and social network sensing
- Implications to system design of integrated physical and social network sensing
- Correlation from personal & virtual group spaces and sensors
- Impacts of searching and mining the Internet of things to social networks
- Multi-source information integration
- Search in pervasive social databases
- Models and representations of real-virtual dynamics
- Participatory sensing
- Case studies and applications of mixed sensing and mining
- Content centric networks
- Social metrics for network operation
- Middleware for mobile, wsn and social networks
- Web dynamics and grid/cloud computing
- Security, privacy, reputation and trust issues
- Users studies and human factors in real-online combined sensing
- Applications of physical-online sensing

Workshop Organizers

Oscar Mayora, CREATE-NET, Italy
Ryoichi Shinkuma, Kyoto University, Japan
Francesco Calabrese, IBM Research, Ireland and MIT, USA
Paul Moore, ATOS Research, Spain

Important Dates

- Paper submissions deadline - March 20, 2011
- Notifications of Acceptance - April 20, 2011
- Camera ready and Registration -May 15, 2011

ACM Springer Mobile (MONET) Journal Networks and Applications: Special Issue on Mobility and User-Centric Media

Journal Web Site: http://www.springer.com/engineering/signals/journal/11036
CFP:
http://www.springer.com/cda/content/document/cda_downloaddocument/CFP_11036_20080927.pdf

ACM Springer Mobile Networks and Applications (MONET) Journal
Special Issue on Mobility and User-Centric Media

Mobile devices have become essential in our daily lives, and the trend is that they become multipurpose objects where all kinds of personal media will be available. Indeed, the growing computational capabilities of such devices have changed the habits of their users and today it is common that many actions and tasks of our daily activities involving media can "happen" through our portable devices. We have entered the world of integrated user experience where users are not only watching and listening new forms of content on new platforms of technology but also creating content of their own. In this context, the User Centered Media (UCM) require over- coming of numerous long-term challenges. The trend created by UCM is expected to speed up the seamless access to content, regardless of its location / repository or terminal device, leading to pervasive media. It is expected that UCM will support inventive and creative practices in the arts, science, engineering, education, and business by enabling entirely new types of creative media production and its consumption in mobile devices will impose big challenges. Additionally, after the evolution from web 1.0 into web 2.0, where the concept of the active user was introduced as the user to be at the centre of the web, we are living now a new, far-out event: the birth of web 3.0, which is provisioned to be the Future Internet where user-centric content and mobility will play a very active role. This special issue envisions contributions including different aspects of Mobility and User
Centric Media. Some relevant topics include:

- Mobility and interactive media
- Media creation (professional and non-experts) for mobile scenarios
- Pervasive availability of media
- Intelligent mobile-Media
- Personalization and Mobile-Media
- Pervasive Games
- HCI Studies of Mobile-Media
- Localized and context sensitive media
- Content adaptability
- Mobility and 3D media
- Media in augmented, ubiquitous spaces
- Mobile Communities
- 2D/3D object retrieval using mobile devices
- Content-aware networks and network- aware content
- Privacy, security and intellectual property in mobile scenarios
- Next generation mobile TV

Guest Editors:

Isidro Laso-Ballesteros , EU Commission, Belgium
Oscar Mayora Ibarra , CREATE-NET, Italy
Petros Daras , CERTH-ITI, Greece

Schedule:

Manuscript submission deadline: February 1 2010
Notification of acceptance: April 1 2010
Submission of final revised paper: May 15, 2010
Publication of special issue: 3rd or 4th Quarter, 2010 (Tentative)

This special issue additionally collects best papers from "First International Conference on User Centric Future Media Internet – UCMedia 2009" held in Venice, Italy on 9-11 December, 2009.

Springer Journal on Multimedia Tools: Special Issue on User Centric Media

CFP: http://www.springer.com/cda/content/document/cda_downloaddocument/CFP-11042-20100331.pdf?SGWID=0-0-45-905737-p35538244

Multimedia Tools and Applications

CALL FOR PAPERS

Special Issue on: User Centric Media

The term User Centric Media (UCM) implies high quality media content generated, distributed and experienced by end-users. This type of user centered media requires overcoming of numerous long-term challenges. The trend created by UCM is driven by the more active participation of users to online multimedia content and is expected to speed up as the seamless access to content increases leading to pervasive media. It is expected that UCM will support inventive and creative practices in the arts, science, engineering, education, and business by enabling entirely new types of creative media production and its consumption.

This special issue welcomes high quality scientific contributions focused on all topics ranging in the wide spectrum of User Centric Media, both on theoretical aspects as well as practical frameworks and implementations. Overall, the special issue will outline the recent trends, major challenges, perspectives and identify future directions regarding User Centric Media. Contributions are invited from prospective authors with interests in the indicated special issue topics and related areas of application. All contributions should be high quality, original and not published elsewhere or submitted for publication during the review period.

Scope

Topics of interest for the Special Issue include, but are not limited to:

- User Media forms and production
    - User centric media services in the extended home
    - Enhanced content representations (3DTV, Ultra HD TV, holograms, etc).

- Implementation and experimentation of Future Internet applications e.g. virtual 3D
- worlds, collaborative platforms and holograms
- Novel Networked Media Systems to support human creativity at the cross roads of ICT
- and arts/design research
- User generated content creation, management and consumption systems
- Framed communication experiences
- New forms of interactive storytelling

- Media delivery
  - Open Future Internet network architectures for seamless, scalable multimedia content delivery
  - Content-awareness and content location awareness
  - Adaptive, polymorphic and reconfigurable systems for Future Media Internet environments
  - Content aware networks and network aware content/applications
  - Peer-to-peer streaming prototypes and their implementation in the Future Media Internet
  - Cross-layer dynamic adaptation and end-to-end QoS issues for heterogeneous networks
  - Innovative, adaptive and self-configuring mobile and wireless applications
  - Encoding technologies for maintaining the integrity and optimise the quality of
  - experience.

Guest Editors:

Dr. Cristina Costa , UBiNT group , CREATE-NET Research Center
Dr. Tomas Piatrik , Multimedia & Vision Group , Queen Mary, University of London

Schedule:

Paper Due: October 15, 2010.
Acceptance Notification: January 30, 2011
Camera-Ready Final Paper Due: March 1st, 2011

Publication Date: 2nd Quarter, 2011 (Tentative)

This special issue additionally collects best papers from "First International Conference on User Centric Future Media Internet – UCMedia 2010" held in Palma de Mallorca, on 1-3 September, 2010

IEEE Communications Magazine: Special Issue on Future Media Internet

Journal Web Site: http://dl.comsoc.org/ci/
(July 2011)

Call for Papers
IEEE Communications Magazine
Special Issue on Future Media Internet

Internet is today the most important information exchange mean and has become the core communication environment not only for business relations, but also for social and human interaction. Moreover, it is a common belief that the Internet is evolving towards providing richer and more immersive experiences. Advances in video capturing and creation will lead to massive creation of new multimedia content and internet applications, including 3D videos, immersive environments, network gaming, virtual worlds.

In this respect, Future Media Internet will not simply be a faster way to go online. It will be designed to overcome current limitations and to address emerging trends in the area of seamless media delivery, including: new media agnostic network architectures, content centric networking issues (e.g. new methods of content finding and streaming), diffusion of heterogeneous nodes and devices, new forms of (3D) user centric/user generated content provisioning, emergence of software as a service and interaction with improved security, trustworthiness and privacy. In this evolving environment, rich 3D content as well as community networks (peer-to-peer and cloud) overlays are expected to generate new models of interaction and cooperation, and be able to support new innovative applications, like virtual collaboration environments, personalised services/media, virtual sport groups, on-line gaming, edutainment. In this context, the interaction with content combined with interactive/multimedia search capabilities across distributed repositories, opportunistic P2P and overlay networks and the dynamic adaptation to the characteristics of diverse terminals are expected to contribute towards

such a vision. On the other hand, advances in network coding, 3D video processing, and dynamic adaptation to the network conditions will give rise to innovative applications such as massive multiplayer mobile games and virtual worlds, placing new types of traffic demands and constraints on mobile network architectures.

Research institutes and leading companies, in USA (e.g. the NSF FIND and GENI programmes), in Asia-Pacific (e.g. in Japan through the AKARI Project) and in Europe (e.g. via the EC FIA, FIRE, COAST, NextMedia and many more projects) have started to design the Future Media Internet, which will not only radically change the telecommunications and the entertainment industries, but it is also expected to stimulate and enhance creativity, professional productivity and community relations.

Objectives

The purpose of this special issue in IEEE Communications Magazine is to present to the magazine's audience a concise, tutorial oriented reference of the state-of-the art, current and future research, challenges and trends in the Future Media Internet. To achieve this goal the special issue seeks original research and review papers that survey, consolidate and present the leading-edge research prototype development, trials and early deployment, and performance studies in the following areas:

- Open content centric network architectures for scalable multimedia content delivery
- Encoding technologies for maintaining the integrity and optimise the quality of experience.
- Implementation and experimentation of future media applications e.g. virtual 3D worlds, collaborative platforms and holograms
- Content addressing and identification
- Distributed caching in the network for multimedia content
- Peer-to-peer/overlay streaming prototypes and their implementation in the Future Media Internet
- Search and retrieval of multimedia objects over distributed networks
- Context and location aware middleware for heterogeneous networks
- Innovative, adaptive and self-configuring applications
- Adaptive, polymorphic and reconfigurable systems for heterogeneous networks
- Cross-layer dynamic adaptation and end-to-end QoS issues for heterogeneous networks
- Reputation, trust and incentives in peer-to-peer streaming systems and sensor networks

Schedule for Submissions

Submission Deadline: September 1, 2010
Notification of Acceptance: December 15, 2010
Final Manuscript Due: January 1, 2011
Publication Date: March 1, 2011

Feature Topic Editors

Dr. Theodore B. Zahariadis, Synelixis/TEI of Chalkida, Greece
Dr. Giovanni Pau, University of California Los Angeles, USA
Dr. Gonzalo Camarillo, Ericsson, Finland

Special Issue on Mobility and Social Networks Confluence

Journal Web Site: http://www.springer.com/engineering/signals/journal/11036

ACM Springer Mobile Networks and Applications (MONET) Journal
Special Issue on Mobility and Social Networks Confluence

Mobile devices, wearables and wireless sensor networks have been lately used to monitor and sense real world. On one hand, processing of information that has been sensed in the real world has been used for a wide set of applications. These applications include detection of human activities, environmental and urban state monitoring, estimation of healthcare conditions, proximity and concentrations of people, epidemic trends, network and routing planning and other natural and human-generated situations describing aspects of the physical world. On the other hand, the evolution of the web in terms of user-generated content, crowd sourcing and the proliferation of online social networks have generated tremendous amount of information, describing dynamic interaction among people and their surroundings in both, digital (online) and real worlds, making people-generated information to become a new type of virtual sensor.

In this respect, the amount of information available from the connected world, either belonging to virtual or to physical sources, can describe aspects of reality in a detailed manner if both sources are combined. The kind of dynamics that the integration of digital and physical worlds may generate will have an impact at different levels, involving the human-social-environmental dimensions as well as at the network organization. In this regard, a set of novel research challenges will arise for dealing with such integration of information. This Special Issue intends to report advances on

applications, methods and approaches envisioning to address the new challenges in this field.

Relevant topics

This special issue envisions contributions highlighting the different challenges and opportunities involved in the integration of Mobile Sensing and Social Networking as a bridge between the real and digital worlds. Some relevant topics include:

- Mobility, geo-localization and social networks
- Wireless sensor networks, mobile devices and social network sensing
- System design implications of mixed physical and social network sensing
- Correlation from real & virtual spaces and sensors
- Searching the internet of things and social databases
- Multi-source information integration
- Models of real-virtual dynamics
- Case studies and human factors in mixed worlds sensing and mining
- Social metrics for network operation
- Participatory mobile sensing, crowd sourcing and social media mining integration
- Middleware for mobile, WSN and social networks
- Web dynamics and grid/cloud computing
- Security, privacy, reputation and trust in mixed online-physical worlds
- Applications of mixed physical and social network sensing

Guest Editors:

Oscar Mayora Ibarra, CREATE-NET, Italy
Ryoichi Shinkuma, Kyoto University, Japan

Schedule:

- Manuscript submission deadline: March 16th 2012
- Notification of acceptance: April 30th 2012
- Submission of final revised paper: May 30th, 2012
- Publication of special issue: 3rd or 4th Quarter, 2012 (Tentative)