



COntent Mediator architecture for content-aware nETworks

European Seventh Framework Project FP7-2010-ICT-248784-STREP

Deliverable D7.1 Dissemination and Standardisation Plan and 1st Year Progress Report

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Document Control

Title: Dissemination and Standardisation Plan and 1st Year Progress Report
Type: Public
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Doc ID: D7.1-v1.0.doc

AMENDMENT HISTORY

Version	Date	Author	Description/Comments
Vo.1	Oct 26, 2010	Georgios Petropolous	1 st version, ToC
Vo.2	Jan 21, 2011	Wei Koong Chai, Ioannis Psaras	First draft with all standardisation, dissemination and concertation effort organized.
Vo.3	Jan 25, 2011	Wei Koong Chai	First complete draft for consortium review
Vo.4	Feb. 7, 2011	Wei Koong Chai	Final draft.
V1.0	Feb.14, 2011	Wei Koong Chai	Final version ready for submission

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1 Executive Summary

The Content Mediator architecture for content-aware networks (COMET) project aims to define a novel content-oriented Internet architecture that will radically simplify content access and will support content distribution in a network-aware fashion. The proposed architecture could be deployed over the current Internet but has aspects that may benefit or even influence evolutionary or revolutionary Future Internet architectures.

This deliverable mainly consists of two parts. The first part of the document outlines the plans layout for COMET's dissemination and standardisation activities. In particular, we list the target research conferences, journals, concertation activities and standardisation bodies that we will target during the course of the project. Hence, this deliverable will be the point of reference for the future Deliverables D7.2 and D7.3, whose subject will be the dissemination activities during Years 2 and 3 of the project.

The second part of the document reports our dissemination, standardisation, concertation and exploitation activities during the first year of the project. To ensure wide impact, both academic and industrial partners spent substantial effort in disseminating the output from the project to their relevant avenues and fora. The dissemination activities are mainly based on our research investigations, which we have included in Deliverables D2.1, D2.2, D3.1 and D4.1. The main effort of the exploitation activities in Year 1 has been directed towards the patent of an invention by TID. In the present document, we focus on our efforts during the first year of the project, in terms of concertation, dissemination, standardisation and exploitation. Our efforts were based on submitting our high-quality research papers to top-notch conferences, journals and magazines, attending concertation events organised by the Commission and participating in workshops relevant to the content-aware networks.

2 Dissemination and Standardisation Plan

D7.1 is the first in a series of deliverables, where we intend to outline our Dissemination and Standardisation Plan. In particular, D7.2 (M23) and D7.3 (M36) are going to outline our dissemination activities during the second and third years of the project. Being the first document in this series, D7.1 includes a list of our target dissemination venues and standardisation bodies for the whole duration of the project.

In this Section, we initially refer to the project's Objectives (in Section 2.1) with regard to Concertation, Academic Dissemination, Industrial Dissemination and finally, Standardisation. Then, in Section 2.2, we list our Dissemination Targets, which we group in terms of Concertation, Academic Dissemination, Industrial Dissemination and Standardisation. Finally, in Section 2.3 of the present document, we provide our Dissemination and Standardisation Plans for each of the three years of the project. We focus on the first year, where we also outline our dissemination achievements in Year 1 of COMET project.

2.1 Objectives

The objectives that need to be accomplished from the COMET consortium regarding dissemination and standardization activities of the project can be organized in the following structure:

- Concertation,
- Academic Dissemination,
- Industrial Dissemination,
- Standardization.

2.1.1 Concertation

The COMET project will disseminate through liaising with other projects (including European ones), through EC cluster events and groups, as well as through other EC-sponsored events. The members of the consortium will actively participate in all activities and events mentioned above, both making the community aware of the COMET project and raising the profile of ICT FP7 programme.

The COMET consortium will be active in all cross-project activities, in order to explore areas of common interest, as well as exchange useful information with other related FP7 projects, especially in the direction of the Future Media Internet. COMET must be aware of ongoing FP7 projects as well as some Call-4 projects that started at the same time.

Participation in ICT Networked Media activities is essential, targeting to notify of project's developments and impact and to receive valuable suggestions, guidance and information about ICT programme policies and activities.

In addition to this and in the context of the recently formed Future Media Networks cluster, COMET will liaise with associated European projects in the area of content networks, present its ideas and receive feedback regarding project's progress.

The COMET consortium commits to support the organization of the Future Internet Assembly process or an annual conference (e.g. ICT-Networked Media Summit), if requested by the EC, by providing papers, attending technical sessions, chairing sessions, etc.

The Smart Objectives for the Concertation Activities are:

- Participation of ideally two (2) COMET representatives in every Future Internet Assembly main event over the course of the project.

2.1.2 Academic Dissemination

The COMET project will disseminate its technical progress and scientific results to the research and academic community through presentations and publications in high-quality conferences and journals, as well as through organization (or co-organization) of three dedicated workshops on content-aware networks. COMET will have to publish the scientific results of the project in seven international peer-reviewed conferences and journals in order to promote them to the academic circles.

In addition, the results of the project, such as the architectural considerations, algorithms, mechanisms, simulation tools and platforms can be used by the academic partners of the COMET consortium (UCL, UniS, WUT) for specialized courses, seminars and other teaching activities to graduate students.

The Smart Objectives for the Academic Dissemination activities are:

- Publication of project's scientific results in around seven (7) international peer-reviewed conferences and journals. Specifically, COMET will publish three (3) papers in Tier 1 conferences or journals and four (4) articles in Tier 2 conferences or journals¹,
- Organization of three (3) workshops, possibly in collaboration with other relevant FP7 projects. Participants from ideally six (6) external organizations are expected to attend each workshop, at least one (1) from FIA clusters and at least two (2) from two different FP7 projects in the same call and objective (Call 4, objective 1.5) specifically. Deliverables D7.1, D7.2 and D7.3 will contain workshop reports and every public workshop material will be uploaded to the COMET website no later than 2 months after each workshop.

2.1.3 Industrial Dissemination

The COMET project will disseminate its technical progress and achievements in industrial and commercial organizations, in order to inform and influence the industrial circles and develop collaborations with these organizations for future exploitation and use of the results.

The industrial partners of COMET (TID, PrimeTel, INTRACOM TELECOM) will produce notes for press releases and will put effort on publishing them as press releases to the media, in order to promote COMET to both national industrial circles and local community. Moreover, a Project Impact FactSheet must be created by the industrial partners of COMET, including information about the expected social and economic impact of the project. COMET will use the Project Impact FactSheet in order to disseminate the project towards industrial and commercial bodies.

An Industrial Dissemination List (IDL) of possible dissemination targets (magazines, conferences, exhibitions and fora) has already been created early in the project, including a brief description of each target and what COMET could present or publish to them. The IDL will be revised throughout the project, capturing any updates or new events.

The COMET consortium must choose the five (5) most promising targets from the IDL, in terms of excellence and potential, in which the project would disseminate its developments and results. Moreover, the COMET prototype will be demonstrated at appropriate exhibitions and conferences, either remotely on the testbed or via a virtualized testbed.

¹ Tier 1 conferences are defined as those with acceptance rate of 30%, or lower, in the widely regarded Networking Conferences Statistics maintained by Kevin Almeroth at the University of California, Santa Barbara (see: <http://www.cs.ucsb.edu/~almeroth/conf/stats/>), while Tier 2 conferences are defined as these with an acceptance rate of 40% or lower in the same set of statistics. We define IEEE journals as being Tier 1 publications, while Tier 2 includes well-reputed periodicals, such as those published by ACM, Elsevier or Springer.

The Smart Objectives for Industrial Dissemination activities are:

- Production of a Project Impact Factsheet (no later than M18),
- Dissemination of the project results to ideally five (5) industrial dissemination outlets identified in the IDL, by the end of the project,
- Production of two (2) notes for press releases by the industrial partners, the first one at the beginning of the project (no later than M3) and the second one at the end of the project (no later than M36). Effort will be undertaken to get both notes published as press releases by the respective PR departments, according to their communication policies.

2.1.4 Standardisation

The COMET consortium will be directly involved and contribute to relevant working groups in standardization bodies (IETF, ETSI), in order to achieve the standardization of project's results. COMET partners will have to participate in working groups, in order to lessen the risk of changing any draft specifications produced by the project.

COMET will be active in the standardization activities organized by the project NextMedia, contributing to standards associated with the Future Media Internet area in FP7, with specifications and papers for mechanisms and architectures in the field of content-aware networks. Moreover, COMET encourages the creation of ETSI-ISG FIA in collaboration with NextMedia.

The Smart Objectives for the Standardization activities are:

- Submission of at least one (1) draft to the IETF,
- Contribution to the ETSI-ISG FIA.

2.2 Dissemination Targets

As already stated before, in this Section we provide a list of the Dissemination Targets for the duration of the whole project. This will serve as the basis for the future D7.2 and D7.3, where we will focus on the dissemination achievements during the second and third years of the project, respectively.

2.2.1 Concertation

2.2.1.1 The European Future Internet Initiative

Description: The European Future Internet Initiative (EFII) is an initiative founded by 16 of the leading ICT companies in Europe; they target the development of a new approach to address the challenges of the Future Internet in Europe.

In particular they want a holistic approach that brings together the application domains and the ICT expertise to develop an Internet that fully supports the business processes of the different sectors, while taking advantage of the common aspects of these diverse sectors.

They organize meetings (2 per year), commonly called assemblies and conferences, where European projects that investigate the area of future Internet present their work progress and receive feedback from other common-interest projects; during these conferences the companies gather attention from policy makers, industry and academia participating in the events.

For instance, the Future Internet Assembly (FIA) consists of hundreds of European researchers from more than 100 projects, in which they have the opportunity to discuss technical and non-technical issues, explore their ideas, cooperate and further collaborate in the field of Future Internet.

At least two (2) COMET representatives must attend both of the FIA meetings each year, fulfilling one of the Smart Objectives described in Section 1 of this document; during these meetings the

project participants should have the opportunity to present project's developments and receive valuable feedback and suggestions.

Website: <http://www.future-internet.eu>

Previous Event: FI Conference Valencia, April 14-16th 2010, Valencia, Spain (<http://www.fi-valencia.eu>)

Next Event: FI Assembly Ghent, December 16-17th 2010, Ghent, Belgium (<http://www.fi-ghent.eu>)

2.2.1.2 Information and Communication Technologies

Description: Information and Communication Technologies (ICT) is the gathering point for actors from ICT research such as universities, business people, investors and public authorities, exploring all areas of common interest as well as possible collaborations in digital technologies research. It is Europe's most visible forum for ICT research and innovation.

The project could present its scientific progress and results in any of the events organized by the ICT, in order to disseminate the project and gather attention from both industrial and academic circles.

Next Event: ICT 2010, September 27-29th 2010, Brussels, Belgium (http://ec.europa.eu/information_society/events/ict/2010/index_en.htm).

2.2.1.3 Networked Media

Description: The main objective of the Networked Media cluster activities is to set up a framework of cooperation among Networked Media projects and to facilitate programme management by the Commission Services.

This cooperation could take the form of sharing of procedures, databases and test platforms, discussion of intermediate results, interchange of deliverables.

Projects may use this framework to start bilateral cooperation or, when justified, to cluster with other projects around specific topics of interest and eventually seek consensus on architectures, standards, inputs to policy.

COMET is classified in the Future Media Networks Cluster of this objective. There must be representatives of COMET project in both Consultation and Concertation events.

Website: http://cordis.europa.eu/fp7/ict/netmedia/home_en.html

Previous Events:

- Consultation and Workshop on thematic priorities in the Networked Media Systems research area, January 19th 2010, Brussels, Belgium (http://cordis.europa.eu/fp7/ict/netmedia/workshop/ws19012010_en.html)
- 5th FP7 Networked Media Concertation Meeting, February 3-4th 2010, Brussels, Belgium (http://cordis.europa.eu/fp7/ict/netmedia/concertation/0210_en.html)

Next Event: 2011 events are still to be announced.

2.2.1.4 Networked & Electronic Media

Description: Networked & Electronic Media (NEM) community is being created by various European stakeholders who focus on the areas of media, communications and electronics, aiming to support the growth of European economy with the development of innovative network and communication platforms. NEM members have the opportunity to discuss such issues in NEM summits held on a yearly basis.

The COMET project could present the project's developments in any of the conferences organized by NEM, addressing the field of Networking and delivery infrastructure as well as Content search.

COMET could also be present in the exhibitions, where it could display and present to industries its expected results and services after the completion of the project.

Website: <http://www.nem-initiative.org/Default.asp>

Next Event: 2010 NEM Summit, October 13-15th 2010, Barcelona, Spain (<http://nem-summit.eu/>)

2.2.2 Academic Dissemination

2.2.2.1 Journals

2.2.2.1.1 Tier 1 Journals

- **IEEE Communications**

Description: IEEE Communications Magazine was the number three most-cited journal in telecommunications and the number eighteen cited journal in Electrical and Electronics Engineering in 2004, according to the annual Journal Citation Report (2004 edition) published by the Institute for Scientific Information.

This magazine covers all areas of communications such as lightwave telecommunications, high-speed data communications, personal communications systems, ISDN, and more.

IEEE Communications is a very high-impact magazine, suitable for dissemination of new architectures as well as more specific networking issues. As such, it is very suitable for COMET in order to disseminate both the high-level architecture as well as more specific networking issues, such as naming and QoS considerations. Being a high-quality and high-impact magazine though, it requires a considerable amount of work for any submission.

Website: <http://dl.comsoc.org/ci/>

- **IEEE Network**

Description: IEEE Network is the leading IEEE Magazine on all areas related to Networking. It is one of the most cited Magazines in its field and covers all areas of networking and communications, from computer networks to mobile communications.

IEEE Network is a very high-impact magazine, where the audience is interested on both architectures and new approaches to communications and networks. As such, it is suitable for the dissemination of the COMET project results, since COMET addresses evolutionary and revolutionary future media architecture issues. Acceptance to IEEE Network requires substantial amount of work, since the competition is very high.

Website: <http://dl.comsoc.org/ni/>

- **IEEE/ACM Transactions on Networking**

Description: The IEEE/ACM Transactions on Networking is committed to the timely publication of high-quality papers that advance the state-of-the-art and practical applications of communication networks. Both theoretical research and applied contributions and tutorial expositions of permanent reference value are published. The topics covered by this journal include network architecture and design, communication protocols, network software, network technologies, network services and applications and network operations and management.

It is an extremely high-quality and high-impact journal for dissemination of theoretical studies on computer networks. Being one of the mostly highly cited journals in computer networks, the acceptance ratio is extremely low and the reviewing process takes from one to three years. In terms of the COMET project, this journal is only suitable if we develop a concrete mathematical model that describes, in mathematical terms, the operational properties of the COMET architecture.

Website: <http://www.ton.seas.upenn.edu/>

- **IEEE Journal of Selected Areas of Communications (JSAC)**

Description: Each issue of the IEEE Journal on Selected Areas in Communications (JSAC) is devoted to a specific technical topic, which is significant to the research community and becomes valuable reference. The technical topics covered by JSAC issues span the entire field of communications and networking.

IEEE JSAC is a very high-quality and high-impact journal for dissemination of both theoretical and measurement-based studies. It is a “special-issue only” journal, meaning that the editorial-board announces CFPs on specific areas of computer networking. Therefore, submission to this journal depends on whether a suitable CFP will be announced during the course of the project.

Website: <http://www.jsac.ucsd.edu/>

- **IEEE Transactions on Network and Service Management (TNSM)**

Description: IEEE Transactions on Network and Service Management (IEEE TNSM) is a journal for timely publication of archival research on the management of networks, systems, services and applications, as well as on issues in communications software, service engineering, policies and business processes for network and service management.

IEEE TNSM is a very high-quality journal that focuses on Network Management issues, rather than purely networking topics. COMET could potentially publish concrete results of management aspects in content networks. However, submissions to this journal need to include comprehensive proposals of solid and technically sound material.

Website: <http://dl.comsoc.org/tnsm/>

- **Elsevier Computer Networks**

Description: Computer Networks journal publishes papers about communication network architectures and protocols, including aspects of applications and services. Moreover, it focuses on specific fields, e.g., network management, security, privacy and modelling.

The topics of Computer Networks journal are aligned with COMET’s area of research, especially, as COMET aims to create a new architecture that deals with content aware delivery service. This work will also cover protocols, modelling and performance evaluation, while taking into account the security, scalability and privacy.

Website:

http://www.elsevier.com/wps/find/journaldescription.cws_home/505606/description#description

- **Elsevier European Journal of Operational Research (EJOR)**

Description: The European Journal of Operational Research (EJOR) publishes papers contributing on the methodology of operational research and on the practice of decision-making. In particular, EJOR focuses mainly on theory and methodology contributing to operational research and to its theoretical foundations as well as innovative applications of operational research describing novel ways to solve real problems.

The EJOR could be a target for COMET dissemination because of its impact on community of researchers working on operational research. The possible COMET contribution would cover application of decision making and optimization theory to content aware networks

Website:

http://www.elsevier.com/wps/find/journaldescription.cws_home/505543/description#description

2.2.2.1.2 Tier 2 Journals

- **Elsevier Computer Communications**

Description: Computer Communications is a peer-reviewed international journal that publishes high-quality scientific articles (both on theory and on more practical topics) and survey papers covering all aspects of future computer communication networks (on all layers, except the physical layer), with a special attention to the evolution of the Internet architecture, protocols, services, and applications.

Website:

http://www.elsevier.com/wps/find/journaldescription.cws_home/525440/description#description

- **Springer Journal of Network and Systems Management**

Description: The Journal of Network and Systems Management offers peer-reviewed original research along with surveys and case studies in the fields of network and system management. The journal regularly disseminates significant new information on the telecommunications and computing aspects of these fields, as well as their evolution and emerging integration. It covers architecture, analysis, design, software, standards, and migration issues related to the operation, management, and control of distributed systems and communication networks for voice, data, image, and networked computing.

The Springer Journal of Network and Systems Management (JNSM) had been the key journal for network, system and service management for some 15 years before the IEEE Transactions on Network and Service Management (TNSM) was established a few years ago. JNSM is tier-2 journal that publishes two open call and two special issues per year. Acceptance rate is generally below 30% and it could be a suitable venue for publishing aspects of the COMET management architecture that cannot be submitted to the IEEE TNSM.

Website: <http://www.cstp.umkc.edu/jnsm/home.html>

- **European Transactions on Telecommunications**

Description: European Transactions on Telecommunications (ETT) seeks papers on the various applications of telecommunications, such as communication networks, communication theory, information theory, mobile networks, optical communications, cryptography/security, signal processing, transmission systems and wireless communications.

Website: <http://www3.interscience.wiley.com/journal/104087069/home>

- **Springer Annals of Telecommunications**

Description: This international journal publishes original peer-reviewed papers in the field of telecommunications, covering all essential topics of modern telecommunications, ranging from digital communications, communication networks and the internet, to the software, protocols and services, uses and economics.

The COMET contribution may focus on COMET architecture, designed mechanisms and algorithms covering content naming, resolution, routing and forwarding. Moreover, the results of performance and scalability studies may also be presented.

Website: http://www.annales-des-telecommunications.com/fr_accueil.html

2.2.2.2 Conferences

2.2.2.2.1 Tier 1 Conferences

- **ACM International Conference on emerging Networking EXperiments and Technologies (CONEXT)**

Description: Top level ACM conference, mainly focusing on the “computer science” side of communication networks. This conference could be ideal for publishing general (preferably

radical) architectures/frameworks of future content-centric networks proposed by the COMET project; Again, submissions need to be accompanied with solid ideas on specific supporting protocols and mechanisms as well as their evaluations, ideally through “real” experiments rather than simple simulations.

Website: <http://www.sigcomm.org/learn/conext-conference>

- **IEEE Conference on Computer Communications (INFOCOM)**

Description: Top level IEEE conference on communications and networks, mainly focusing on the network “engineering” side. Solid technical works on specific algorithms, protocols and techniques dealing with content-aware networks could be submitted there. Any submission to this conference needs to be supported with very concrete technical ideas and extensive experimental results (or analytical modelling).

Website: <http://www.ieee-infocom.org/>

- **IEEE International Conference on Network Protocols (ICNP)**

Description: Top level IEEE conference on network protocols. This conference could be ideal for publishing specific content-handling and networking (e.g. resolution and routing) protocols and mechanisms in future content-centric networks. Submission to this conference should be supported with solid (even ground-breaking) ideas with comprehensive experimental results.

Website: <http://www.ieee-icnp.org/>

- **IFIP Networking**

Description: High-level conference on computer networks, which comes just after INFOCOM and CoNext in terms of impact. This conference could be used for some “interim” research output on content-aware networks in the COMET project, with some good experimentation results.

Website: <http://networking2011.org/>

- **IEEE/IFIP Network Operations and Management Symposium (NOMS)**

Description: The NOMS conference focuses on approaches and technical solutions for novel management paradigms that deal with the new management issues in future infrastructures such as Web 2.0 or beyond service environments, cloud computing platforms, large-scale data-centers, and the Future Internet; it also targets conventional issues in large and complex services, systems, and networks.

The COMET’s area of interest intersects with most of the topics of this conference. The problem of content-aware network brings new management requirements, but on the other hand, it automates the content delivery management assuming openness of interfaces.

Website: <http://www.ieee-noms.org/>

- **IEEE/IFIP International Conference on Network and Service Management (CNSM)**

Description: Conference on management technologies of computer networks that intends to become a flagship conference in network and service management with sub-20% acceptance rate. This conference could be used for submitting the proposed management paradigms on future content centric networks from the COMET project.

Website (for the 2010 event): <http://www.cnsm2010.org/>

- **IFIP/IEEE International Symposium on Integrated Network Management (IM)**

Description: The IM focuses on research in the area of management, operations and control of networks, networked services and applications, as well as distributed systems. The topics of interest covers: management technologies, including resource allocation, service management,

QoS management, cross-layer approaches; management of networks, services and systems, including content hosting and delivery networks.

The IM is in scope of COMET interest because the management is key function of content aware networks covering not only network management but also content management.

Website: <http://www.ieee-im.org/>

2.2.2.2.2 Tier 2 Conferences

- **Wired/Wireless Internet Communications (WWIC)**

Description: International Conference on Wired/Wireless Internet Communications (WWIC) has been established as a highly selective conference focusing on the rapidly developing field of wireless networking and providing an international forum for the presentation and discussion of cutting-edge research in the field. The conference addresses research topics such as the design and evaluation of protocols, the dynamics of the integration, the performance tradeoffs, the need for new performance metrics, and cross-layer interactions.

Well-known venue for dissemination of either theoretical- or measurement-based results. It can also be used for publishing radical ideas on computer networking that are parts of on-going studies.

Website: <http://omega005.sm.ltu.se/wwic2010/>

- **IEEE Global Communication Conference (GLOBECOM)**

Description: Well-known IEEE conference on communications and networks. It can be used for submitting specific content/networking techniques with reasonable amount of experimental results.

Website: <http://www.ieee-globecom.org/>

- **IEEE International Conference on Communications (ICC)**

Description: Well-known IEEE conference on communications and networks. It can be used for submitting specific content/networking techniques with reasonable amount of experimental results.

Website: <http://www.ieee-icc.org>

- **IEEE International Conference on Computer Communication Networks (ICCCN)**

Description: Well-known IEEE conference on communications and networks. It can be used for submitting specific content/networking techniques with reasonable amount of experimental results.

Website (for the 2011 event): <http://www.icccn.org/icccn11/>

- **IEEE International Conference on Local Computer Networks (LCN)**

Description: The LCN focuses on practical, leading-edge applications and research in the area of computer networks. One of the assumptions in the COMET project is the ability of introducing the content aware network into existing Internet. This will require pragmatic solution that will bring superior functionality using present equipment. As a consequence, LCN is a direct target for COMET dissemination.

Website: <http://www.ieeelcn.org/>

- **International Teletraffic Congress (ITC)**

Description: ITC provides a venue for researchers interested in understanding and improving the way traffic is handled in communication networks. The ITC is focused on traffic management procedures and mechanisms, modelling and understanding of new architectural principles and concepts for future networks, including content-centric networking, architectural elements and business models.

The ITC could be a target for COMET dissemination because ITC collects specialists of network modelling and performance evaluation. The possible COMET contribution covers models of content aware networks, performance evaluation of COMET architecture, scalability studies, etc.

Website: <http://www.i-teletraffic.org/itc22/home/>

- **IEEE High Performance Switching and Routing (HPSR)**

Description: The focus of IEEE HPSR conference is an innovative technology of high-speed, high-capacity and high-quality data transmission and switching for wired and wireless networks. The HPSR conference will cover aspects of routing and signalling protocols, multicast switching, cross layer optimization in switches and routers.

The HPSR conference could be a target for COMET dissemination since it is one of the most important events bringing together researchers, engineers and practitioners working on routing and switching. The possible COMET contribution would cover content-aware routing algorithms and content-specific forwarding.

Website: <http://www.ieee-hpsr.org>

2.2.3 Industrial Dissemination

2.2.3.1 Magazines

- **ACM Queue**

Description: Queue is the ACM's magazine for practicing software engineers. Queue focuses on the technical problems and challenges that arise, while taking a critical look at current and emerging technologies, highlighting problems that are likely to arise and posing questions that software engineers should be thinking about.

ACM Queue could be a possible industrial dissemination target for COMET, where the project could publish a paper describing its content-centric architecture and mechanisms and its impact on current Internet architecture.

Website: <http://queue.acm.org/index.cfm>

- **EContent**

Description: EContent is the most respected source for information about the digital content industry, being dedicated to content. The magazine identifies and explains emerging digital content trends, strategies, and resources.

EContent is an extremely relevant dissemination target, as it focuses on COMET's central area of research, i.e., content. COMET could disseminate its proposing techniques and mechanisms on content publication, search and delivery and its general high-level architecture.

Website: <http://www.econtentmag.com>

- **Euromedia**

Description: Euromedia has established itself as one of the leading exponents of in-depth analysis across broadband business spectrum, examining companies, technologies and trends. Coverage of broadband technology, content, delivery and monetization across all platforms are at the focus of the Euromedia.

New business models and benefits to associated actors (e.g. ISPs) produced by the implementation of COMET could be published in Euromedia magazine.

Website: <http://www.advanced-television.com/magazines/Euromedia.htm>

- **TELECOM2.0**

Description: TELECOM2.0 Magazine is a leading international magazine for next-generation communications, focusing on the convergence between Telecom, Media, Web2.0, Content, m-Commerce, m-Banking, Analytics, Entertainment, Security, etc. The audience comprises of operators, providers, carriers, broadcasters, content owners and OEMs, including trade shows globally.

In this high-quality magazine, COMET could present new business models produced by its implementation, as well as its benefits to network operators, content providers and owners.

Website: <http://www.telecom2.com>

- **Total Telecom**

Description: Total Telecom is the leading communications link between end-users and the vendors, carriers and resellers of telecommunications technology and services, focusing on news from the global Communications industry.

New business models and benefits to associated actors produced by the implementation of COMET could be published in Total Telecom.

Website: <http://www.totaltele.com>

2.2.3.2 Conferences

- **CDN Worldsummit**

Description: A world event focusing on the Telco CDN opportunity. Particularly, strategies and technologies for addressing the Content Delivery Market are presented, as well as the rapidly changing CDN landscape is evaluated; moreover, the CDN Worldsummit is interested in market entry case studies, expansion strategies, and options for technical architectures.

Business models and expected benefits to network operators, content publishers and other associated actors, could be presented in this conference.

Website: <http://www.cdnstrategies.com>

- **Consumer Communications & Networking Conference**

Description: IEEE CCNC is organized specifically to help the consumer electronics industry drive the advance of the numerous wireless and wireline communications technologies that will provide on-demand access to both entertainment and information anytime, anywhere, regardless of time or location.

Peer-to-Peer networking and content distribution are some of the targeted areas of the IEEE CCNC conference, which are also identified as areas of interest for COMET.

Website: <http://www.ieee-ccnc.org/2011>

- **EURO-NGI Conference on Next Generation Internet (NGI) Networks**

Description: The conference is a key event contributing to reach the EU targets of integrating the European research effort in the Next Generation Internet domain and to strengthen the collaboration with non-European researchers and institutions. Scientists and practitioners from industry and academia, as well as contributions from outside Euro-NF are invited in this conference.

COMET project focuses on designing a content-oriented future Internet architecture, which is an area of interest for this conference.

Website: <http://euronf.enst.fr/NGI2010>

- **IASTED International Conference on Internet and Multimedia Systems and Applications (IMSA)**

Description: The IASTED International Conference on Internet and Multimedia Systems and Applications (IMSA) is a major contact venue for research scientists, engineers, and practitioners throughout the world to present their latest developments and applications in this field. IMSA aims to strengthen relations among universities, research laboratories, and industries, discussing topics, such as content distribution, retrieval and delivery, among several others. Such topics constitute COMET's area of interest and research, thus the project could present its scientific results to this conference.

Website: <http://www.iasted.org/conferences/home-695.html>

- **International Conference on Advanced Information Networking and Applications (AINA)**

Description: The conference covers theory, design and application of computer networks and distributed computing systems. The AINA seeks original contributions from both industry and academia in all relevant areas, including topics such as communication protocol and architecture, Internet technology and IP-based applications, Peer-to-Peer (P2P) systems, innovative networking and applications, multimedia communications and Quality of Services (QoS). All these topics are areas of research in COMET, thus partners could present project's results in AINA.

Website: <http://aina2011.i2r.a-star.edu.sg/cfp.html>

- **International Workshop on Internet Engineering & Web services (InWeS)**

Description: The International workshop on Internet Engineering & Web services provides an excellent international forum for sharing knowledge and results in theory, methodology and applications of Internet Engineering and Web services environment. The aim of the workshop is to provide a platform to the researchers and practitioners from both academia as well as industry to meet and share cutting-edge development in the field.

Techniques and mechanisms developed throughout the project could be presented in this conference by COMET partners.

Website: <http://airccse.org/inwes/inwes2010.html>

2.2.3.3 Exhibitions

- **FUTURECOM**

Description: FUTURECOM is a Telecom and IT event that gathers market stakeholders from around the globe and offers the attending companies and professionals an adequate and stimulating environment for the development of businesses, relationships and knowledge. It has been recognized as an event aiming to guide the market on the new technologies and the most modern trends of communications.

COMET's prototype could be demonstrated in this exhibition, gathering attention from huge international industrial and commercial organizations.

Website: http://www.futurecom.com.br/eng/index_eng.html

- **IBC**

Description: IBC is the premier annual event for professionals engaged in the creation, management and delivery of entertainment and news content worldwide. The IBC exhibition demonstrates state-of-the-art electronic media technology and provides unrivalled networking opportunities.

COMET project could present its results as well demonstrate its prototype in this exhibition, gathering attention from huge industrial and commercial organizations around the globe.

Website: <http://www.abc.org/>

- **NAB Show**

Description: NAB Show is an exhibition synonymous to content and next-generation technologies. Leading broadcast engineers, technicians and media professionals from around the world gather for comprehensive coverage of cutting-edge technologies and issues, such as content distribution and delivery, which could potentially be of interest to the COMET project.

Website: <http://www.nabshow.com/2010/default.asp>

2.2.3.4 *Fora*

- **StreamingMedia**

Description: StreamingMedia is a premier online destination for professionals seeking industry news, information, articles, directories and services. The site features thousands of original articles, hundreds of hours of audio/video content, breaking news, research reports, industry directory, and case studies that showcase the latest real-world streaming media implementations. Its weekly e-newsletter, Streaming Media Xtra, has a senior level readership of industry insiders, now exceeding 37,000. StreamingMedia.com brings a more focused approach to content by providing users with the knowledge they need for real world implementations of streaming media technology and applications.

As this is an area of interest for the project, the COMET consortium could publish an article, describing the possible benefits in streaming media technology with the use of COMET system.

Website: <http://www.streamingmedia.com/>

- **TMForum**

Description: With more than 700 corporate members in 195 countries, TM Forum is a leading industry association targeting to service providers in the communications, media and cloud service markets. The Forum provides business-critical industry standards and expertise to enable the creation, delivery and monetization of digital services. TM Forum brings together the world's largest communications, technology and media companies, providing an innovative, industry-leading approach to collaborative R&D, along with wide range of support services including benchmarking, training and certification.

The Forum produces the international Management World conference series, as well as thought-leading industry research and publications, in which COMET could present its results and impact in current Internet technology.

Website: <http://www.tmforum.org/>

2.2.4 **Standardisation**

2.2.4.1 *ETSI*

Description: The European Telecommunications Standards Institute (ETSI) produces globally-applicable standards for ICT, including fixed, mobile, radio, broadcast and internet technologies.

ETSI is an independent, not-for-profit organization based in Sophia Antipolis, France, which is officially recognized by the European Union (EU) as a European Standards Organization. ETSI consists of more than 700 member organizations from 62 countries worldwide.

ETSI Directives is a set of documents that define the legal status, purpose, scope and all aspects of ETSI and also cover all the work produced during the entire standardization process, from inception and approval to publication of an ETSI standard.

Website: <http://www.etsi.org/WebSite/homepage.aspx>

Standardization Process:

- Industry Specification Groups - Industry Specification Groups (ISGs) append to the existing standards development process. An ISG is an activity organized around a set of ETSI work items addressing a specific technology field and is often supported by relevant Working Groups.
- Work Items - The ETSI Work Programme is composed of the work programmes of all the technical bodies. The work programme of each technical body consists of Work Items. A Work Item is the description of a standardization task, and results in a single standard, report, or similar document. The technical body approves each Work Item, which is then formally adapted by all members of the technical body via a web-based procedure. A technical body has to approve the deliverables for publication and the Work Item results, which are then submitted to further levels of approval before publication.
- Decision Making – Decision making by the technical body, including approval of draft Deliverables, is accomplished either by simple consensus or by a weighted vote. Each participant's membership fee determines its voting weight, which in turn depends mostly upon the company's financial status as well as other factors. A proposition passes if at least 71% of the weighed votes cast are in favour.

COMET-related Groups: COMET could support an ETSI ISG on Media in collaboration with FP7 NextMedia. One of the NextMedia goals is to support the launch of an Industry Specification Group (ISG) on Future Internet Architecture and to analyze other regulatory and standardization bodies to offer joint standardization inputs, coordinated between projects, thus achieving higher standardization possibilities. NextMedia started with setting up procedures to launch the ISG on Future Media Architecture (FIA) as part of the well-established European Telecommunication Standards Institute (ETSI).

The scope of the ISG FIA is to:

- define the requirements for Future Internet Architectures,
- design a reference model and the building components of Future Internet Architectures,
- define interoperability, orchestration, communication and self-organization issues and constrains of Future Internet Architectures resources and systems (networking, computation, storage, content, context), and
- define technologies for content-aware and network-aware caching and multi-source context-aware multimedia streaming.

The ISG FIA shall not:

- define business models for Future Internet Architectures,
- define service-based architectures and applications,
- define security architectures and security protocols,
- define communication interfaces, ontologies and semantics.

2.2.4.2 IETF

Description: The Internet Engineering Task Force (IETF) is a large open international organization, which is the gathering point for network designers, operators, vendors, and researchers focusing on the evolution of the Internet architecture and its smooth operation. It is open to any interested individual.

The IETF Mission Statement is documented in RFC 3935 and the Tao of the IETF is also available as RFC 4677.

Website: <http://www.ietf.org/>

Standardization Process:

- IETF Mailing Lists and meetings - Much of the work is done through IETF meetings, which are held three times per year, as well as via mailing lists. Any individual planning to attend an IETF meeting could join the IETF announcement mailing list. Issues concerning meeting information and announcements are posted in the IETF announcement mailing list, whereas technical issues and discussions are done in the IETF general discussion mailing list. Both registration and payment of a registration fee are essential in order to attend an IETF meeting.
- Working Groups - Working Groups are actually mailing lists in which anyone subscribing can discuss issues of this WG. There are seven functional areas which consist of several WGs: Application area, Internet area, Operations and Management area, Real-time Applications and Infrastructure area, Routing area, Security area and Transport area.
- BOFs – If there is no relevant WG in a certain area that an individual could contribute to, then a new WG needs to be formed. If there are also other individuals who are interested on the same topic in this particular area, then a face-to-face meeting needs to be held. Such meetings are called Birds of a Feather (BOFs) meetings and have to be approved by the Area Director in the relevant area before it can be scheduled. Moreover a mailing list could also be set up, where all participants could start discussing and working on the topic.
- RFCs and Internet Drafts – Every IETF standard is published as a Request for Comments (RFC) and every RFC starts out as an Internet Draft (I-D). The procedure in order to publish a standard is the following:
 - Publish the document as an Internet Draft.
 - Receive comments on the draft and edit the draft based on the comments.
 - Repeat the steps above, until the draft is efficiently discussed. Then it is submitted to the IESG.

If the IESG approves the draft to become an Internet standard, then it is published as a Proposed standard and after six months it can become a Draft standard. A few years after a document has been a Draft standard, it can become an Internet standard.

COMET-related groups: The COMET project could participate in several existing IETF groups, depending on its architecture and technical progress.

- Application-Layer Traffic Optimization (ALTO): The specific Working Group designs and specifies Application-Layer Traffic Optimization (ALTO) services that provide peer-to-peer applications with information to perform better-than-random initial peer selection. Providing more information for use in peer selection can improve P2P performance and lower ISP costs. COMET could help in providing some of this information and can allow for easy discovery of peers through the use of the COMET Naming Architecture.
- Decoupled Application Data Enroute (DECADE): The DECADE Working Group, among others, identifies the requirements to enable target applications to utilize in-network storage. Requirements include the ability for an application to store, retrieve and manage data, indicate access control policies, suitable to an environment with users across multiple administrative and security domains and resource control policies for storing and retrieving data. In this respect, COMET can help in storing the content through the caching content servers as well as in retrieving and managing the content until the end user receives it.
- DNS Extensions (DNSEXT): The DNSEXT Working Group actively advances DNS protocol-related RFCs on the standards track while thoroughly reviewing further proposed extensions. If a DNS-based approach for Name Resolution is adapted in COMET then this new extension can be reviewed under the umbrella of this Working Group.
- Global Routing Operations (GROW): The purpose of the GROW Working Group is to consider the operational problems associated with the IPv4 and IPv6 global routing systems, including

but not limited to routing table growth, the effects of the interactions between interior and exterior routing protocols, and the effect of address allocation policies and practices on the global routing system. Through the COMET Content Forwarding Plane and the routing protocols that will apply, COMET will attempt to give a solution to these problems.

- **Multiple Interfaces (MIF):** The purpose of the MIF Working Group is to describe the issues of attaching to multiple networks on hosts and document existing practice. The COMET architecture can assist a host attached to multiple networks in making decisions about default router selection, address selection, DNS server selection, choice of interface for packet transmission, and the treatment of configuration information received from the various networks.

However, COMET would aim at creating Working Groups under the areas of Internet and Routing that are the most related with the project's objectives and goals. Topics such as the naming architecture and consequently the suggested Domain Naming Architecture as well as the routing paths of the Content Forwarding Plane can be addressed under the umbrella of the Working Groups of the IETF. Nevertheless, as the project progresses the aspects of the project that can be standardized may vary.

2.2.4.3 IRTF

Description: The Internet Research Task Force (IRTF) consists of Research Groups, working on topics related to Internet protocols, applications, architecture and technology. Research Groups require a stable long-term membership in order to promote the development of research collaboration in exploring research issues.

The IRTF Research Groups guidelines and procedures are described more fully in RFC 2014.

Website: <http://www.irtf.org/index>

Standardization Progress:

- Research Groups - A Research Group can be formed when an individual or group of individuals are interested in creating one. These individuals will have to submit a charter for the proposed group to the IRTF Chair along with the list of proposed founding members, and wait for approval. If it is approved, then they must define its Research Group Name, Chair(s), Mailing list(s), Membership Policy and Description of Research Group.

Each Research group is autonomous and defines its own operation policy and procedures. The main purpose of a group is to make progress and produce results towards a specific research area. If, at some point, it becomes evident that a Research Group does not make enough progress in its research areas, or fails to regularly inform the community of its results, the IRTF Chair can either terminate the group or define a different research area where the group could focus.

- Research Group Documents – The work of a Research Group usually results in publication of research papers, as well as RFCs.

COMET-related Groups: The COMET project could participate in this particular IRTF group in which it could contribute to.

- Routing Research Group: in the area of routing algorithms and mechanisms.

2.3 Planning

All Smart Objectives regarding Dissemination and Standardization of the COMET project, that must be accomplished, were briefly described in Section 1 of this document and are summarized in **Table 2.1**.

Table 2.1 List of Smart Objectives

Smart Objectives	Dissemination Type	Milestones
Organization of 3 workshops	Academic Dissemination	M36
Participation of COMET in every FIA meeting	Concertation	M36
At least 7 publications in international peer-reviewed conferences and journals (3 in Tier 1, 4 in Tier 2)	Academic Dissemination	M36
Production of Project Impact Factsheet	Industrial Dissemination	M18
Dissemination of project's results to 5 industrial dissemination outlets	Industrial Dissemination	M36
Submission of at least 1 draft to IETF	Standardization	M36
Contribution to ETSI-ISG	Standardization	M36
Production of 2 notes for press releases by industrial partners	Industrial Dissemination	M3 & M36

2.3.1 Year 1

Considering the fact that during the first year of the project there will not be enough progress in technical achievements of the project, the COMET consortium will not be able to fulfil all of the Objectives mentioned in the Table 2.1.

However, during the first year, at least two (2) COMET representatives were present in every Future Internet Assembly plenary meeting. The exact details of the COMET presence in these events are given in Section 3 of the present document. Although no session was organised in order to disseminate the project's progress, the consortium has arranged for a session to be organised in FIA Budapest.

The Industrial partners of the COMET consortium have produced press releases and a lot of effort has been put to publish these draft documents as press releases by their PR departments. The exact publication details of each press release are given in Section 3 of the present document.

The first COMET-ENVISION liaison meeting took place during the first year of both projects. It was held during the ICT event 2010, on 28th September 2010. Attendants: David Griffin (UCL) and Miguel Río (UCL), from the ENVISION project, George Pavlou (UCL), Andrzej Beben (WUT), Jordi Mongay (WUT) and Gerardo García (TID), from the COMET project. The next COMET-ENVISION liaison meeting will be next year, in particular, in September 2011, in Cyprus. Both projects are going to have their regular general meetings after which a common meeting is going to be held.

In addition to this, if there is enough progress in defining technical issues and architecture of the project, the COMET consortium should consider publishing an article in a Tier 2 journal.

2.3.2 Year 2

Year 2 of the project will be crucial, as the project is expected to produce technical progress and scientific results, which should be disseminated to both academic and industrial communities.

COMET should attend or publish articles in at least one (1) Tier 1 conference or journal and two (2) Tier 2 conferences or journals. The COMET consortium (and the academic partners specifically) should decide which academic dissemination targets (described in Section 2.2) would be relevant and efficiently promote the project's scientific progress.

Moreover, COMET should also organize a workshop (perhaps in coordination with another FP7 project e.g. ENVISION), in which the project's first achievements and expected results could be presented to the academic community. As already mentioned above, a common COMET-ENVISION meeting is scheduled for September 2011, in Cyprus, where the two projects are going to spend one day with presentations on each side to show the progress and find common areas of interest.

The Industrial partners of the COMET consortium should also create the Project Impact Factsheet, which will provide all social and economical implications of the project and will be the main instrument in project's dissemination to industrial and commercial organizations. COMET should also consider publishing articles or attending and presenting its progress in two (2) industry-related magazines or conferences and exhibitions.

Last but not least, as in year 1, COMET representatives must attend to every FIA plenary meeting, as well as other EU, FP7-related events and activities.

2.3.3 Year 3

By Year 3, the technical work of the COMET project will be almost finished and the consortium should present its results and outcomes towards the research community, academic circles and industrial and commercial organizations.

COMET should present or publish papers in at least two (2) Tier 1 conferences or journals and in one (1) Tier 2 conference or journal. Moreover, the COMET project should organize one (1) or two (2) (depending on whether the project will organize a session in FIA event in Y1) workshops, in which the project's results could be presented and promoted to both academic and industrial community, as well as relevant European projects.

The COMET consortium should also be present in FIA plenary meetings (as in previous years), disseminate the project's results or demonstrate the COMET prototype to three (3) industry-related targets (described in section 2.3), as well as contribute to standardization organizations, such as IETF and ETSI-ISG. In fact, COMET will contribute to the standardization with the submission of at least one (1) draft to the IETF. The groups in each standardization body that COMET should participate and contribute (or create if necessary) must be identified by the consortium before year 3.

Finally, each Industrial partner of COMET should create a second note of press release, try to submit it to the Public Relations department and put effort on publishing them as press releases to the media, in order to promote the project in their local media and make the community aware of project's goals, expected results and impact.

The initial planning for the accomplishment of all dissemination and standardization objectives throughout the 3 years of the project is summarized in the following **Table 2.2**:

Table 2.2 Smart Objectives per year

	Year 1	Year2	Year 3
Concertation	Participation in all FIA meetings.	Participation in all FIA meetings.	Participation in all FIA meetings.
Academic Dissemination	Publication in at least 1 Tier 2 conference/journal. Organization of a session in a FIA meeting.	Publication in at least 1 Tier 1 and 2 Tier 2 conferences/journals. Organization of a workshop or session in a FIA meeting.	Publication in at least 2 Tier 1 and 1 Tier 2 conferences/journals. Organization of a workshop or session in a FIA meeting.
Industrial Dissemination	Production of notes of Press Releases by the industrial partners.	Production of Project Impact Factsheet. Publication or attendance in 2 industry-related conferences/exhibitions and magazines.	Production of notes of Press Releases by the industrial partners. Publication or attendance in 3 industry-related conferences/exhibitions and magazines.
Standardization	-	-	Contribution to ETSI-ISG. Submission of at least one draft to the IETF.

3 1st Year Progress Report

3.1 Concertation

3.1.1 Concertation Activities in Year 1

- **Consultation Workshop on Future Research Priorities in the Networked Media Systems Area, Brussels, 19th January 2010**

- Prof. George Pavlou of University College London attended the workshop and gave a presentation entitled “Towards Future Self-managed Content-centric Networks” (URL: http://cordis.europa.eu/fp7/ict/netmedia/workshop/ws19012010_en.html).

Description: Research issues on self-adapting future ubiquitous content-centric networks were highlighted, considering both evolutionary and visionary or revolutionary approaches. Some of these aspects will be addressed in the context of COMET.

- Francisco Javier Ramón Salguero of Telefónica I+D attended the workshop and gave a presentation entitled “Content Mediation for Efficient Traffic Distribution” (URL: http://cordis.europa.eu/fp7/ict/netmedia/workshop/ws19012010_en.html).

Description: Initial vision of the project was presented to all interested sector actors in the Networked Media Systems research area. The goal of the consultation and the ensuing workshop was to define R&D challenges, address the networked media sector requirements and EU priorities for collaborative projects supported under the ICT priority of the Seventh Framework Programme (period 2011-2013).

- Dr. Ning Wang of University of Surrey attended the workshop and gave a presentation entitled “Thoughts on Future Networking and Network Management for Ubiquitous Media Delivery” (URL: http://cordis.europa.eu/fp7/ict/netmedia/workshop/ws19012010_en.html).

Description: In the presentation he pointed out some important research directions and issues related to future media-centric networking and network management. Specific items include business model innovation, development strategies in realising media-centric network platforms and integrated media-network management paradigms.

- **1st Future Content Networks (FCN) group Workshop, Brussels, 20th January 2010**

- Prof. George Pavlou of University College London attended the workshop and gave a presentation entitled “Future Content Networks: Network-related Research Issues” (URL: <http://www.gatv.ssr.upm.es/nextmedia/images/minutes.pdf>).

Description: Both evolutionary and revolutionary future content networks were identified, proposing virtualized parallel network planes as a means to introduce revolutionary approaches in a graceful fashion. Some of the evolutionary and revolutionary aspects presented will be addressed in the context of COMET.

- **5th FP7 Networked Media Concertation Meeting, Brussels, 3rd-4th February 2010**

- Francisco Javier Ramón Salguero from Telefónica I+D attended the workshop and a presentation on the COMET project. (URL: <http://cordis.europa.eu/fp7/ict/netmedia/docs/concertation03022010/comet.ppt>).

Description: Initial vision of the project presented to the rest of the Networked Media area project managers. This meeting is organised to facilitate the communication between the EC and the project managers and between the project managers themselves.

- **Networked Media – Current Research, Results and Future Trends, published in March 2010**
 - Contribution made in 23rd February 2010 of the COMET project brochure for the EC publication that includes all the new projects that were selected in the 4th Call for Proposals.

Description: By this contribution, COMET appears in the publication along with the relevant information about state-of-the-art in research and developments on Networked Media. This publication presents various ongoing European activities and future trends in the field of Networked Media technologies.
- **Future Internet (FI) Cluster meeting, Sophia Antipolis, 9th March 2010**
 - Prof. George Pavlou of University College London attended the meeting and gave a presentation entitled “The Content Mediation Approach Towards Future Information-Centric Networks” (URL: <http://euronf.enst.fr/archive/185/COMET.pdf> and <http://www.etsi.org/WebSite/NewsandEvents/201003FutureInternetCluster.aspx>).

Description: The high-level COMET architecture and approach were presented along with potential top-level solutions.
- **1st Future Media Internet Architecture Think Tank meeting, Valencia, 14th April 2010**
 - Prof. George Pavlou of University College London attended the meeting and gave a presentation entitled “Future Media Internet Architecture: Network-related Issues”.

Description: The key challenges for a Future Media Internet Architecture were presented, asking also key questions about the suitability of a Content-Centric Network (CCN) model about all future interactions and the long-term future sustainability of such an approach. The COMET work will try to shed light to some of these issues.
- **Future Media Networks (FMN)-cluster publication, September 2010.**
 - The COMET consortium contributed to an FMN publication, which is a report on the research, challenges in future media networks. The report is going to be published by the Commission and distributed at ICT 2010, the NEM Summit, the next FIA meeting in Ghent, 8th September 2010.
 - The COMET consortium contributed to another FMN publication on research challenges in future media networks. COMET contributed the “Chapter 4: Content Mediation in Future Media Networks” (pp. 8-9) of the publication. It was published by the Commission and distributed at ICT 2010 (September 27th-29th 2010).
- **Information and Communication Technologies (ICT) 2010 and Networked and Electronic Media (NEM) Summit, Barcelona, 13th -15th October 2010.**
 - A video presentation on the COMET project was shown in the exhibition stand of the Future Media Networks cluster. The video shows the benefits for end users of the unified interface for content access, comparing the current access to content in the Internet with the future access to content with COMET. The video also describes roughly the approach proposed in the project. This video was shown during ICT 2010 on 29th September 2010.
 - Prof. George Pavlou of University College London took part in the Future User-Centric Media Networks session presenting “Future Media Internet Architecture: Evolutionary and Revolutionary Approaches”.

Description: The key challenges for a Future Media Internet Architecture were presented, highlighting potential evolutionary and revolutionary approaches, presenting the key features that differentiate them and asking some key questions that need to be answered before proceeding to the revolutionary clean-slate approaches.

- Sergios Soursos of Intracom Telecom, a member of NEM's GA, attended the General Assembly meeting and joined the FMN cluster booth where the abovementioned COMET video was projected. Several discussions with representatives of other projects belonging to the FMN cluster took place. Additionally, during the main event, Sergios Soursos attended several sessions about Content Delivery and User Centric Content Technologies that are of direct interest to COMET. Finally, Sergios Soursos attended the NextMedia workshop, a side-event of NEM summit. There, attendance plans for the FIA Ghent sessions were made. The participants investigated which sessions were interesting for NextMedia to have a representative at. Sergios Soursos shared information about other sessions, since he has been caretaker of the Future Internet Socio-Economics (FISE) group and had collaborated with several other caretakers in the previous years.
- The first COMET-ENVISION liaison meeting also took place during the ICT event 2010, on 28th September 2010. The attendants were David Griffin (UCL) and Miguel Río (UCL), from the ENVISION project, George Pavlou (UCL), Andrzej Beben (WUT), Jordi Mongay (WUT) and Gerardo García (TID), from the COMET project. As part of this meeting, we agreed to have regular general meetings after which a common meeting is going to be held.
- **Future Media Internet Cluster meeting, Brussels, 29th-30th November 2010.**
 - A presentation made during the meeting of the Future Media Internet cluster, held during the second day of the Concertation meeting (Brussels, 29th-30th November 2010). The presentation highlights the main advances of the COMET project during Year 1, showing two of the COMET use cases and a snapshot of the COMET architecture.

Sergios Soursos attended the FIA Ghent meeting, 15-17 December 2010, as a representative of Intracom Telecom, and FP7 projects COMET and SmoothIT. His main purpose was to promote the COMET project and its objectives by increasing its visibility to the European research community. This was achieved by presenting the high-level architecture of COMET, adapted to the requirements of Future Internet Architecture (FIArch) group. It was the first FIArch's session organized within FIA, so it was quite important that COMET was present. It is expected that COMET will contribute to the next FIArch sessions. Sergios Soursos, along with TID and UCL representatives, were invited to join the Future Media Internet Architecture Think Tank (FMIA-TT) group, where more specific architectural issues with respect to media-aware networks were discussed. Apart from the FIArch session, Sergios Soursos also attended a few other sessions, namely the "Linked Open Data I", the "Information as an economic good" and the "Experimentation" sessions, as well as the opening and closing sessions. Finally, Sergios Soursos visited several booths at the exhibition area.
- Prof. George Pavlou of University College London also attended FIA representing COMET and took also part in the Future Media Internet Architecture Think Tank (FMIA-TT) group, where more specific architectural issues with respect to media-aware networks were discussed.
- **COMET-NextMedia meeting, Madrid, 10th December 2010.**
 - A COMET-NextMedia meeting was held on 10th December 2010 with representatives from NextMedia (Federico Álvarez (UPM) and María Alduán (UPM)) and COMET (Francisco Javier Ramón (TID) and Gerardo García (TID)). Actions of collaboration have been identified especially on functionalities of the COMET architecture that could potentially be standardised by SDOs such as IETF and ETSI. A follow-on meeting has been agreed to be held at the beginning of 2011.

3.1.2 Summary

Regarding concertation, the aim of the consortium for the first year of the project was to make the community aware of project's objectives and expected impact, as well as liaise with related research projects in the field of content networking. This was succeeded through the attendance of COMET

partners' representatives to major clustering and EC-sponsored events, such as Future Internet Assembly meetings, ICT and NEM Summit, in which project's goals were presented through presentations, posters and video presentations. Moreover, the consortium contributed to Network Media and Future Media Networks publications aiming to disseminate the project to related European projects.

The COMET consortium as committed to the Description of Work and presented to the objectives in Section 2.3.1, had representatives from at least 2 partners in every FIA meeting held during Year 1. In both FIA meetings (FIA Valencia and Ghent) COMET representatives raised project's profile within the community and also presented project's developments and high-level architecture.

3.2 Academic Dissemination

3.2.1 Academic Dissemination Activities in Year 1

3.2.1.1 Journal Publications

- **IEEE Communications Magazine, Special Issue on "Future Media Internet".**
 - UCL and UniS has led the submission of a COMET consortium paper entitled "CURLING: Content-Ubiquitous Resolution and Delivery Infrastructure For Next Generation Services" [1], where the main components of the COMET architecture are presented, together with the CURLING content resolution approach. The CURLING approach comprises the project's revolutionary approach. The paper has officially been accepted for the publication in March 2011. In the camera-ready version, the COMET project will be explicitly acknowledged.

Leading Partner: UCL and UniS

3.2.1.2 Conference and Workshop Publications

- **IEEE/IFIP Network Operations and Management Symposium (NOMS), Osaka, Japan, 19th-23rd April 2010.**
 - Mr. Chaojong Wang from University of Surrey attended the IEEE/IFIP Network Operations and Management Symposium (NOMS) 2010 held in Osaka, Japan on 19-23 April 2010. He presented the full paper titled "A Dynamic Peer-to-Peer Traffic Limiting Policy for ISP Networks", [2], that was accepted for publication at the Conference. He was also awarded a student travel grant by the conference. This research work addresses an efficient management scheme of P2P-based content traffic with network awareness. The overall acceptance rate of NOMS 2010 is 26.9%.
- **ACM SIGCOMM Workshop on Home Networks (HomeNets), New Delhi, India, September 2010.**
 - Dr Ioannis Psaras of UCL attended the ACM Sigcomm conference in New Delhi, India in September 2010 as well as the adjacent workshops. He presented his paper entitled "Incentives and Algorithms for Broadband Access Sharing", [3], in the 1st ACM Sigcomm Workshop on Home Networks (HomeNets). The COMET project was acknowledged and discussed with the workshop's participants, following questions on the details of the paper and the project's focus in general.

Leading Partner: UCL

- **IEEE/IFIP International Conference on Network and Service Management (CNSM), Niagara Falls, Canada, 25th-29th October 2010.**

- Dr Ning Wang of the University of Surrey attended the IEEE/IFIP International Conference on Network and Service Management (CNSM) 2010 held in Niagara Falls, Canada on 25-29 October 2010. He presented the paper titled "Fast Failure Recovery for Reliable Multicast-based Content Delivery", [4], that was accepted for publication at the Conference (Minicom). CNSM, which used to be IEEE/IFIP Manweek events, is one of the major conferences on network and service management technologies, and this year the overall acceptance rate is 24%.

Leading Partner: UniS

- **ITU-T Workshop on the Networks of the Future, Warsaw, Poland, 16th – 17th November 2010.**

- Dr Andrzej Beben of the Warsaw University of Technology gave a talk entitled "Content Aware Networks" [5] on ITU-T Workshop on The Networks of the Future that was held in the National Institute of Telecommunications, Warsaw, Poland, during 16 - 17 November 2010. His presentation shows the advantages of the COMET approach with a special focus on content resolution and delivery process.

Leading Partner: WUT

- **IEEE Global Communications Conference (GLOBECOM), Miami, USA, December 2010.**

- Mr. Chaojiong Wang of the University of Surrey attended the IEEE GLOBECOM Conference in Miami in December 2010. He presented his accepted paper titled "On the Interactions between Non-Cooperative P2P Overlay and Traffic Engineering Behaviors", [6], in the technical session of Next-Generation Networking (NGN10: Peer-to-Peer Networking). After the presentation, specific questions were asked by the audience regarding the technical aspect of the paper, and finally the COMET project was acknowledged. The overall acceptance rate of this year's GLOBECOM conference is 35%.

Leading Partner: UniS

- **ACM CoNext Re-Architecting the Internet Workshop (ReArch), Philadelphia, USA, December 2010.**

- Mr Joao Araujo of UCL attended the ACM CoNext conference in Philadelphia, USA in December 2010 as well as the adjacent workshops. He presented his paper entitled "A Mutualistic Resource Pooling Architecture", [7], in the ACM CoNext Workshop on ReArchitecting the Internet (ReArch). The COMET project was acknowledged and the objectives of the project were discussed among the Workshop's participants.

Leading Partner: UCL

- **IFIP Networking, 9-13 May 2011, Valencia, Spain**

- UCL has submitted the paper entitled "Modelling and Evaluation of CCN Caching Trees", [8] to the IFIP Networking conference, a leading, tier-1 conference in the broad area of computer networks. The paper was submitted on the 10th of December and it has been officially accepted. The paper outlines our research investigations on caching for content-aware networks.

Leading Partner: UCL

- UCL has submitted the paper entitled “Balancing by PREFLEX: Congestion Aware Traffic Engineering”, [9], to the IFIP Networking conference, a leading, tier-1 conference in the broad area of computer networks. The paper was submitted on the 10th of December and it has been officially accepted.

Leading Partner: UCL

- **Future Network & Mobile Summit, 15-17 June 2011, Warsaw, Poland**

- The paper entitled "COMET: Content mediator architecture for content-aware networks", [10], was submitted and presents the overall COMET architecture, describes main processes and implementation options as well as QoS engineering and content-aware forwarding concepts. The paper has been officially accepted.

Leading Partner: WUT, Involved Partners: All

3.2.2 Summary

The project consortium has been active in the dissemination of the research results, as can be seen by the list above even at the initial stage of the project. Several publication attempts have been made, most of which resulted in acceptance of our papers at high quality avenues. To summarise, we have currently had

- Tier-1 journal paper: 1 paper accepted
- Tier-1 conference: 2 papers published with 2 more accepted
- Tier-2 conference: 1 paper published
- Other conferences / workshops: 3 papers published with 1 more accepted

As a milestone of our publication list we consider our IEEE Communications Magazine publication, where we describe COMET’s revolutionary approach to content resolution and delivery in next generation content-aware networks. Based on our ongoing research and design activities, we foresee more quality papers to be published in top-notch conferences and journals in the context of the COMET project.

3.3 Industrial Dissemination

3.3.1 Industrial Dissemination Activities in Year 1

Below we provide a list of the Industrial Dissemination Activities during the first year of the project and we discuss briefly their impact on the progress of the project and/or the experiences gathered and the lessons learned from these events.

- Presentations made internally to Telefonica Group business units in order to disseminate COMET project on 12th February 2010. Feedback was gathered from participants and was discussed with the project partners.
- The description of COMET project for Industrial dissemination was published in PrimeTel’s website February 2010 (URL: <http://www.prime-tel.com/main/main.aspx?id=443>). Introducing COMET as part of PrimeTel’s projects in progress.
- Web announcement of COMET project for Industrial dissemination in PrimeTel’s website February 2010 (URL: <http://www.prime-tel.com/main/main.aspx?id=390>). Introducing COMET as part of PrimeTel’s projects in progress.
- Submission of a press release in English to the corresponding department in PrimeTel PLC. The press release aims to attract favourable media attention and provide publicity to the COMET project in foreign media. PrimeTel’s press office department reviewed the document and as a first step the press release has been uploaded in the press release section

of the company's website (URL: <http://www.primetel.com.cy/en/pressroom/deltia-typoy/primetel-participates-comet>). Actions have been also made in order to publish COMET's press release in European and international magazines and journals.

- Submission of a press release in Greek to the corresponding department in PrimeTel PLC. The press release aims to attract favorable media attention and provide publicity to the COMET project in local media. PrimeTel's press office department reviewed the document and as a first step the press release has been uploaded in the press release section of the company's website (URL: <http://www.primetel.com.cy/pressroom/deltia-typoy/i-primetel-symmetexei-sto-ereynitiko-ergo-comet>). Actions have been also made in order to release COMET's press release in pancyprian magazines and journals.
- Web announcement of COMET project for Industrial dissemination in TID's website on March 2010, getting to know COMET as part of TID's projects in progress. URL: <http://www.tid.es/en/what-we-do/cooperation-projects> (English version), <http://www.tid.es/es/que-hacemos/proyectos-colaboracion> (Spanish version).
- TID submitted a proposal for a press release to the corresponding department in Telefónica. The proposal was submitted on the 22nd of March 2010. The Press release is still being reviewed by the department in charge of the dissemination in Telefónica.
- INTRACOM TELECOM submitted a press release in English in order to attract favourable media attention and provide publicity to the COMET project in foreign media. The press release summarizes the project's goals and expected impact in Internet users, the funding from the E.C., as well as defines the members of the COMET consortium. The COMET project achieves to gain valuable press coverage and credibility in foreign media and be promoted in industrial and commercial European organizations.
- INTRACOM TELECOM submitted a press release in Greek in order to attract favourable media attention and provide publicity to the COMET project in Greek media. The press release summarizes the project's goals and expected impact in Internet users, the funding from the E.C., as well as defines the members of the COMET consortium. The COMET project is expected to gain valuable press coverage and credibility in the media and be promoted in industrial and commercial organizations in Greece.
- The COMET consortium has created the COMET project's Industrial Dissemination List in order to define the project's objectives for its dissemination to industrial and commercial organizations. The Industrial Dissemination List was created by the contribution of all industrial partners in COMET consortium and is published in COMET project's wiki page (http://www.comet-project.org/wiki/doku.php?id=dissemination_plan). It contains a brief description and details about all possible outlets (magazines, conferences, exhibitions and fora) targeting industrial and commercial companies. The COMET consortium will choose from the most promising IDL targets, in terms of excellence and potential, so that the project's developments and results can be presented and promoted to major organizations in IT industry.
- INTRACOM TELECOM has created and published a web announcement in English of the COMET project in INTRACOM TELECOM website (http://www.intracom-telecom.com/en/company/profile/rd/dev_prog3.htm). The purpose is to disseminate the COMET project, its objectives and expected impact on content search and delivery over the Internet.

- INTRACOM TELECOM has created and published a web announcement (in Greek) of the COMET project in INTRACOM TELECOM website (http://www.intracom-telecom.com/gr/company/profile/rd/dev_prog3.htm).
- Through joint effort between the PrimeTel R&D team and PrimeTel's Press Office the 1st press release for COMET has been submitted to the ten most circulated pancyprian media sources. On the 17th of June 2010 the press release was published in the online SIGMALIVE.com portal (<http://www.sigmalive.com/node/277300>). SIGMALIVE.com is the first complete online portal in the Cyprus market and is already the number one portal on the island with over 40,000 daily visitors. SIGMALIVE.com is staffed by a competent team of qualified journalists around the world and is continuously offers updated news on current affairs in Cyprus, Greece and abroad. Also, SIGMALIVE.com allows users to post comments, give their feedback and participate in online forums, constituting the first truly interactive medium in Cyprus.
- Through joint effort between the PrimeTel R&D team and PrimeTel's Press Office the 1st press release for COMET has been submitted to the ten most circulated pancyprian media sources. On the 25th of June 2010, COMET successfully made its third publication in the Cyprus media in the Politis newsletter. This publication, along with the other press releases, aims to inform Cypriots about the goals and objectives of the project. Moreover, making COMET well known from the first year of its lifetime will help us in a later stage for future dissemination of the project's results.
- Through joint effort of the PrimeTel R&D team and PrimeTel's Press Office the 1st press release for COMET has been submitted to the ten most circulated pancyprian media sources. Simerini newspaper, the second most read newspaper in Cyprus with 205,000 copies per week, is the fourth media source that brings forth the COMET project.

3.3.2 Summary

The main effort of the industrial partners (TID, INTRACOM TELECOM and PRIMETEL) has been addressed to the writing of press releases and web announcements and their publication by the PR departments to the media, in order to promote COMET project to both national industrial circles and local community. Moreover, two PRIMETEL's press releases have appeared in newspapers.

Besides, the COMET consortium has created an Industrial Dissemination List (IDL) of possible dissemination targets, including a brief description of each target and what COMET could present or publish to them. This IDL will drive the industrial dissemination activities in the following years.

In addition, the industrial partners have presented internally the COMET project to their business units.

3.4 Standardisation

3.4.1 Standardisation Activities in Year 1

An ETSI TC MCD meeting was held in Nice, France on 22 February 2010. The European Telecommunications Standards Institute (ETSI) produces globally applicable standards for Information and Communications Technologies and is recognised as an official European Standards Organisation by the European Union.

An ETSI Technical Committee (TC) is a semi-permanent entity organized around a number of standardization activities addressing a specific technology area. The ETSI TC Media Content Distribution (MCD) is in charge of guiding and co-ordinating standardization work aimed at a successful overall development of multimedia systems (television and communication) that responds to present and future market expectations for media content distribution.

J. Lopez from ROSE Vision attended the meeting, representing the Networked and Electronic Media (NEM) initiative. The objective was to maintain the relationship between NEM and ETSI TC MCD and to identify input from the NEM platform to standardization. As COMET is a member of the Networked Media cluster of projects, TID, the COMET coordinator, and INTRACOM TELECOM, the WP7 leader, was contacted by J. Lopez for a possible contribution to the meeting. The COMET consortium has a contractual obligation to support related ETSI activities and had otherwise identified the body as a potential standardization outlet. An invitation to participate at a media-related ETSI event was therefore seen by the consortium as an opportunity to establish links to ETSI and gain insight to its procedures. Unfortunately, the request had come only a few days before the meeting. As a compromise INTRACOM TELECOM prepared a small set of slides, explaining the standardization plans of COMET, and Mr J. Lopez used these slides as part of his presentation during the meeting, thus promoting COMET as a relevant project.

Besides, FutureNEM SA contacted the project coordinator of COMET, requesting to answer a survey about obstacles to standardization in Networked Media. This questionnaire was intended to produce an overall picture about the needs, activities on going, gaps related to standardization in the Networked Electronic Media field. The information collected has served to raise existing standardization gaps and regulatory barriers that impede efficient contributions from Networked Media projects to standardization bodies, as well as identifying the most important strengths of NEM related projects in the standardization domain.

TID and INTRACOM TELECOM contributed to answering the questionnaire and results of the survey were presented in Networked Media cluster meeting in Brussels (29th -30th November).

3.4.2 Summary

The COMET consortium did not contribute to any major Standardization bodies and organizations in Year 1, since the project has not produced any significant results yet, however it focused on liaising with related European projects and supporting standardization activities, in order to prepare the ground for contributing in the following years of the project. In this direction, project's standardization plans were presented in a media-related ETSI event and the consortium made some first contacts with standardization initiatives.

3.5 Exploitation

3.5.1 Exploitation Activities in Year 1

Telefónica I+D is seeking for patent on the Content resolution mediation based on DNS.

The basic concept of the invention relies in the creation of a new procedure for DNS content resolution that allows mediation from the network provider, selecting the most suitable application protocols and sources of the content while applying the appropriate dynamic provision rules in the network for the correct transmission of such content. The invention relies on the introduction of a mediation server which offers a DNS interface to clients in order to request content based on a content name. Based on the consumption request from the client, the mediation server performs a DNS resolution request towards a DNS resolution server in order to obtain a content record, a new DNS record that contains all the required information for content mediation.

3.5.2 Summary

The main effort of the exploitation activities in Year 1 has been directed towards the patent of an invention by TID. The basic concept of the invention relies in the creation of a new procedure for DNS content resolution that allows mediation from the network provider.

4 Summary and Conclusions

The COMET consortium is committed to achieve wide impact from our research. This will mainly be through three areas: concertation, dissemination and standardisation. To ensure this, we have set out high impact targets for these dissemination activities and created a plan to achieve them on a yearly basis. The plan takes into account the different stages of research and set out realistic targets at different stages.

In Year 1, COMET aims to create awareness amongst the community on the COMET project and its aim. COMET representatives have attended and presented the project in various major clustering and EC-sponsored events (e.g., Future Internet Assembly meetings). In addition, COMET also contributed in publications by Network Media and Future Media Networks activity that aims to disseminate the project related to European projects. We also had representatives from at least 2 partners in every FIA meeting held this year.

Although this is the first year of the project, the consortium has been productive in scientific publications, disseminating COMET's research output. Within this first year, we have one tier-1 journal paper accepted, 2 tier-1 conference papers published with 2 more accepted and 1 tier-2 paper published. There are also several other publications that widen the dissemination scope. The publication to the IEEE Communications Magazine, in particular, is especially significant for the effort in the first year as it has always has high impact factor. Meanwhile, the industrial partners have also published the project in various channels from internal presentation to press releases and web announcements.

Finally, as the project is still in its early stage of research and development, the COMET consortium has not manage to contribute to any major standardisation bodies. However, we have started to pave the way for the possibility of standardising some of the outputs from COMET. We have focused on liaising with related European projects and supporting standardisation activities in view of contributing in the second and/or third year of the project. In addition, regarding the exploitation activities that have been carried out in Year 1, TID has sought to patent an invention of a new procedure for DNS content resolution that allows mediation from the network provider.

5 References

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6 Abbreviations

COMET	COntent Mediator architecture for content-aware nETworks
STREP	Specific Targeted Research Project

7 Acknowledgements

This deliverable was made possible due to the large and open help of the WP7 team of the COMET project within this STREP, which includes besides the deliverable authors as indicated in the document control. Many thanks to all of them.