



NEM Open Media Discussion Forum –

The NEM Forum

- Debating Paper -

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Executive Summary

The NEM Open discussion Forum (the NEM Forum) is currently featuring as a think tank anticipating ideas, views, and expressing comments about how NEM is running. The forum is open to any expert (European and elsewhere) willing to express views and comments on relevant issues affecting NEM. It is a complement to the formal structure of NEM as a technology platform and as such, it is a pioneer tool to gather contributions from experts of the NEM field, who are not capable to follow the intensive life of activities of NEM (vision, strategic research agenda, Activities, position papers, etc.). NEM Forum was launched in 2008 at the occasion of the NEM Summit and constituted a significant milestone in the life of NEM. The activities of NEM Forum constitutes a de-facto advisory think-tank for NEM Steering Board.

This document tries to provoke debates within the NEM Open Discussion Forum and is intended to serve as a basis to motivate discussions on specific issues, following the previous two formal meetings which The NEM Forum has held at the occasion of the NEM Summits in 2008 and 2009. The contributions are aimed at supporting a disruptive view on how research should be done in the future, how research should be prioritized, how research programmes can better support NEM researchers, etc, etc.

A number of topics are identified and described to generate comments and inputs from the interested stakeholders.

Comments can be expressed to the following email: jsesena@rose.es or at the NEM website, [discussion forum page](#).

Background on previous discussions within the NEM Forum can be found at www.nem-initiative.org

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NEM Open Media Forum

Debating Paper

1.- Background

In order to ensure that the views of the Strategic Analysis are complemented with a wider set of views and are not directly constrained to the NEM community, an **Open discussion Forum** on Networked Media was created where in addition to the regular members of NEM, individual experts (notably from Users and Exploitation Entities) are invited to comment and contribute.

The objective of this activity is to extend the participation to all those experts who belong to different constituencies (Universities, Associations, Technology Centres, Industries, users, etc.) and who may express opinions and views based on their individual knowledge. The aim is to collect points of view and opinions from individuals, who would complement those of NEM which represents widely the industrial views legitimately biased for the benefit of industries.

This Networked Media Open discussion Forum is a permanent think tank anticipating ideas, views, and expressing comments about how NEM, Networked Media and the new super-sector (as called by sectoral associations to the media sector) are running. This forum is supported by senior experts (mostly those working in NEM Institutions), with strategic profiles rather than research profile, whose opinions are sought as a complement to other corporate or R&D Institutions positions and visions.

During the last years a large number of discussions have been launched within the Forum, for example about “New generation mobile TV-Market and Technology”, “International cooperation” or regarding the participation of the “NEM Small and Medium Enterprises” in the NEM platform and the research programmes. As a consequence of these discussions new NEM Activities were launched and now **International Cooperation** and **NEM SME** related activities are carried out also within **GlobalNEM** and **NEM SME Activity**.

Currently there are more than **150 participants** within the Forum that have explicitly accepted to become Forum members. NEM interested stakeholders are invited to express comments on any of the topics raised for debate.

2.- Discussions points

As per the previous meetings and audio conferences held by those interested in the Open Discussion Forum debates, a number of topics have been identified for further discussions, aiming to provoke some new munitions for further research work within the NEM community, better procedures for facilitating the optimum impact from NEM research projects into exploitation and new businesses.

Below, topics are described to generate comments and inputs from the Open Media Discussion Forum interested stakeholders. Proposals for new topics are welcome too. Results from these discussions will be forwarded to NEM Steering Board and NEM General Assembly, as appropriate, for further official NEM positioning.

Topics for which comments are sought:

- **International cooperation.** Need to enlarge and extend research with researchers overseas. Regions of priority.
- Enlarge participation of **Small and Medium size Enterprises (SMEs)** in the regular activities of NEM and NEM related research projects.
- **New Societal challenges.** How NEM can contribute. Which European Societal challenges are of highest priority from the NEM points of view?
- **Standardization.** To what extend NEM related projects and NEM activities can foster standardization activities. Is there a possibility to build a standardization work programme priorities in relation to NEM technologies, services and applications?
- NEM meetings to demonstrate and disseminate the results of NEM related projects; promotion of a sort of **NEMinvest Forum**, where investors, capital ventures, users and buyers of technology, can understand the results achieved by NEM related projects and further exploitation can be organized, fostered.
- **Simplification of research programmes** at European, National and Regional levels. Possible measures to simplify procedures, reviews, etc. Moving controls from a-priori assessment to a-posteriori checks.
- **Transversal research cooperation.** Identify mechanisms which can foster the launch of transversal projects including NEM related technologies, as main core technologies or supporting technologies, but addressing other sectors: health, transport, security, space, etc. Cooperation with emerging Public-Private Partnerships (Future Internet, Green Car, Energy efficient buildings, etc.)
- **Extensive use of Regional Structural Funds.** Identify mechanisms by which current Structural Funds can be made available to support NEM Strategic Research Agenda. Organize NEM days within the annual European Regions Week?

- **Public procurement.** Explore to what extent the public procurement can constitute the first and crucial push for the adoption of the results of NEM technologies and NEM related projects achievements. Can NEM community be organized to serve as pole of discussion and promotion for public procurement?

2.1 International Cooperation

There are a significant number of cooperation projects with other regions in the world in the NEM field. These projects are in process or have already developed some initiatives as a result of his cooperation activities. These results include strategic research agendas for the different countries, running or planning roadmaps for the coming years, definition of key research themes aligned with the European Networked Media sector, etc. A list of cooperation projects is provided in Annex I.

Here is a graphical summary reflecting the ongoing cooperation EU- Regions around the world indicating those Regions where specific projects are running.

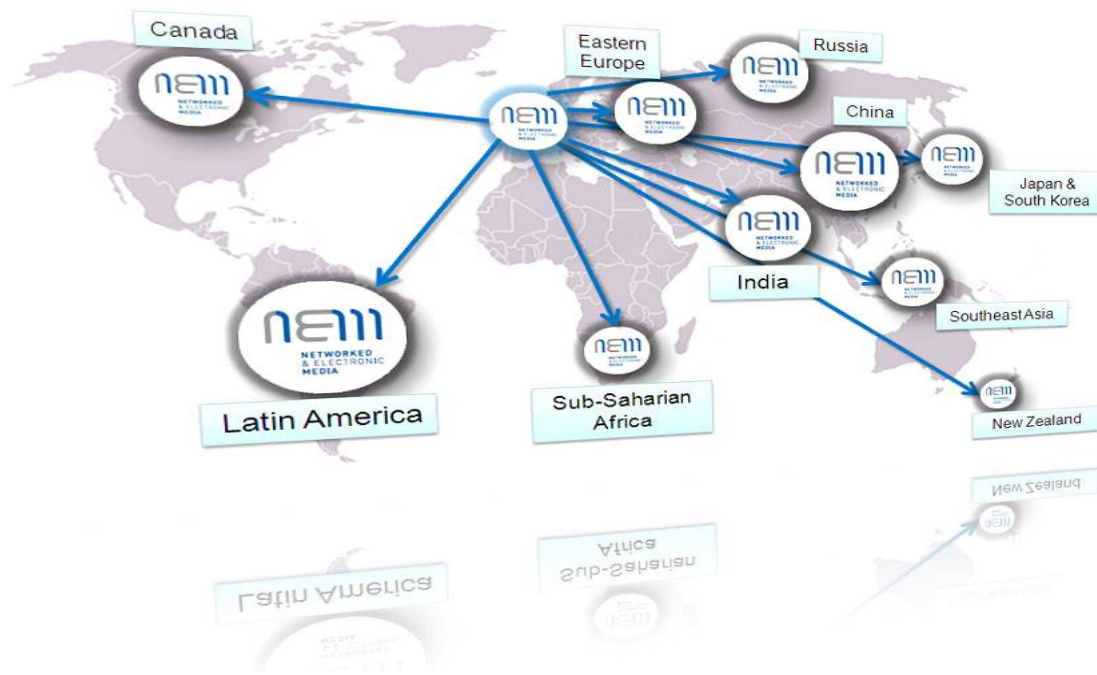


Fig. 1: NEM International Cooperation

These international cooperation activities contribute to the European strategic goal to improve their competitiveness on an international level in the ICT sector and more specifically in the NEM sector.

Some expected results of international cooperation activities are the following:

- Extend European cooperation at worldwide level, aiming to enlarge the markets where R&D results could be exploited.
- Sharing and use of synergies and best practices between regions.

- Foster projects proposal submission with international partners in European programmes and participation of European entities in international programmes in other regions.

More Information:

- [NEM International Cooperation](#)
- [CORDIS – International Cooperation](#)

Some discussion topics on this theme:

- How to implement best practices developed in some regions in other areas?
- How to use projects results as a basis for future cooperation actions with other regions?
- Identify new regions where developed NEM projects can be applied.

2.2 NEM SMEs

SMEs have become increasingly important in our society as providers of employment opportunities and as key players for the well-being of local and regional communities. European SMEs represent more than 90% of the overall European industrial entities. However, the visibility of SMEs in the specific field of R&D is really low, being in the order of 10%.

With the aim of identify research priorities that are of interest for SMEs a questionnaire have been developed and distributed among entities interested in the Networked Media sector. The final goal of this action is to learn more about the interests of NEM SMEs and thus be able to focus NEM SME Activity efforts on these priorities and liase with international initiatives, projects, bodies and events promoting SME interests.

More Information:

- [NEM SME Activity](#)

Some discussion topics on this theme:

- How to stimulate SME participation in R&D?
- Would it be beneficial the use of financial prizes to stimulate the SME participation in R&D?

- What are the main barriers/problems for taking part in R&D/Innovation programmes for SMEs?

2.3 Grand Societal Challenges

In its first Annual Report, the European Research Area Board (ERAB) emphasized that there was a need, a ‘New Renaissance’ than can meet the new societal challenges ahead. This will be a paradigm shift in how we think, live and interact together, as well as a paradigm shift in what the role and place of society should be.

The ‘New Renaissance’ needs a thriving and open European Research Area (ERA) by 2030. The Report proposes, among other fundamental themes, an ERA driven by societal needs to address the ‘Grand Challenges’, such as climate change, energy supply, water resources, ageing societies, healthcare and sustainable prosperity for all. For this theme, a number of milestones are defined which will indicate the rate of progress to achieving a fully-functioning ERA by 2030. For example:

- A third of public, non-military research is geared to grand societal challenges, with a multi-disciplinary approach.
- 30% of all scientists, including humanities and social sciences, are trained in research fields relevant to the Grand Challenges.
- Multi-disciplinary academic training is generalized to educate our research community into the complexity of the Grand Challenges, without diminishing the importance of discipline-based expertise.
- The tools of ‘e-science’ are deployed throughout the ERA, permitting international collaboration so that all researchers will see themselves as part of the global research system.

European Technology Platforms (ETPs) as key part for ensuring an adequate focus of European research play an important role in helping Europe to achieve these ambitious goals and addressing the societal challenges faced cross Europe.

More Information

- [ERAB first annual report: "Preparing Europe for a New Renaissance A Strategic View of the European Research Area"](#)
- [NEM General Assembly – Grand Societal Challenges](#)

Some discussion topics on this theme:

- How NEM can help to fight the European Grand Societal Challenges?
-

- How to foster the interaction of NEM with experts in the fields of climate change, energy supply, water resources...?

2.4 Standardization

There is a general consensus that standardization is a pre-requirement to ensure that many of the general challenges are met through the development of concrete and specific technologies which can allow the availability of new products and services. However, the way standardization is carried out differs depending on the specific technologies, environment of services, players, consumers, etc. The NEM Research Community is invited to further elaborate towards improvement of the European Standardization environment.

More Information

- [Annex to NEM SRA v7: Relevant Standardisation bodies for NEM research topics](#)

Some discussion topics on this theme:

- How to incorporate standardization issues to R&D projects?
- How to make effective contributions to standardization bodies?
- How to potentiate the use of standards to non NEM members?

2.5 NEMinvest Forum

Participants in projects funded under the Framework Programmes are required to use and disseminate the results generated by the project (“foreground”). Dissemination is meant to promote the results as swiftly and effectively as possible to benefit the whole community and avoid duplication of R&D efforts.

Dissemination is also important to the interests of the participants. In fact, an adequate description of “the potential impact through the development, dissemination and use of project results” at the application stage may positively affect the evaluation of the project proposal, thus contributing to its consideration for funding. Moreover, prompt and effective dissemination of the project results may help participants in the subsequent market exploitation and establishment of fruitful and future collaborations.

In this context, it could be raised a sort of Forum (NEMInvest Forum) where investors, capital ventures, users and buyers of technology could understand the results achieved by NEM related projects and further exploitation could be organized and fostered. Within this Forum, key-people from both sides (NEM projects/Investors) would be connected.

Some discussion topics on this theme:

- How to organize the NEMInvest Forum?
- Who are the key-people?
- What would be the appropriate timing?

2.6 Simplification of research programmes

The European Commission has presented a Communication on simplifying the implementation of the Research Framework Programmes. According to the Commission for the future Europe 2020 Strategy to be successful, simplification the access to these programmes is needed.

The simplification strategy presented in this Communication can be divided in three parts. The first one relates to changes that can be made under the current legal framework and includes the reduction of the time taken to award grants and make payments, fixing the calls for proposals' deadlines taking into account major holiday periods, or using prizes as a new way of stimulating research.

The second part concerns radical changes to the current financial rules. A wider use of “average cost methodologies” or lump-sum payments to personnel without any need of recording time for account purposes are some of the ideas in this field.

The third and final part concerns changes which could be implemented under future framework programmes. One of the ideas raised out by the Commission is to adopt a “payment by results” principle for certain categories of projects. That is to say, payment of full amounts would be linked to whether the research objectives are achieved. Other ideas for simplification may also be incorporated after the mid-term review of the FP7 to be presented in October 2010.

Finally, concrete legal proposals to simplify research funding will be included in a proposal on the triennial review of the Financial Regulation which the European Commission will present soon.

Simplification is also a major goal of the upcoming Commission proposal on the triennial review of the Financial Regulation. The Commission intends to seize that opportunity to review budget delivery mechanisms and set financial rules for the next financial framework.

Since the Financial Regulation provides the general framework for the implementation of the EU budget, including research expenditure, its successful review will allow further progress in simplification in the research area, including through translating it in the sectoral RTD legislation. Simplification will therefore be one of the key elements of the preparation of the future Framework Programmes for Research and Technological Development (FP8).

More Information

- [Communication from the commission](#)

Some discussion topics on this theme:

- How to simplify the implementation of research programmes at European, National and Regional levels?
- How to make more attractive and accessible the research programmes to the best researchers worldwide, to Europe's industry and entrepreneurs, to universities and other research and innovation actors.

2.7 Transversal research cooperation

It is clear that NEM related technologies could be applied in many different vertical sectors like health, transport, energy, space, etc.. The development of NEM technologies that cover one or more vertical sectors will make possible European alternative approaches to innovation and business models, based on the implementation of transversal research cooperation.

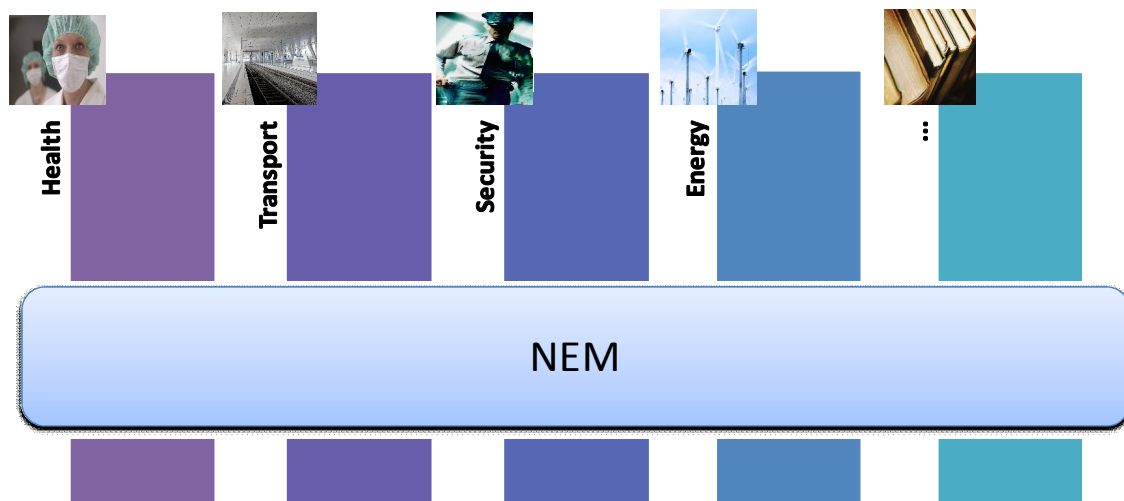


Fig. 2: NEM Transversal Projects

Some discussion topics on this theme:

- What mechanisms could foster the launch of transversal projects?

- How to apply the success of a project in other vertical sectors?
- How to cooperate with emerging Public-Private Partnerships? (Future Internet, Green Car, Energy efficient buildings, ...)

2.8 Extensive use of Regional Structural Funds

Structural Funds is an integral part of European Union policies. Helping to implement regional, social or agricultural policies in member countries. EU cohesion policy is about solidarity; helping lagging regions to catch up in order to strengthen the economic, social and territorial ‘cohesion’ of the Union. The structural Funds and Cohesion Funds (SF/CF) are available to reach this goal.

The SF/CF programming period (2007-2013) focuses on the link with the goals of the Lisbon Agenda (*competitiveness*) and Gothenburg (*sustainable development*) and NEM investments are important for regional development.

Some discussion topics on this theme:

- How to use Regional Structural Funds efficiently?
- Current Structural Funds could be made available to support NEM Strategic Research Agenda?

2.9 Public procurement

Total public procurement in the EU – i.e. the purchases of goods, services and public works by governments and public utilities - is estimated at about 16% of the Union’s GDP or €1500 billion. Its importance varies significantly between Member States ranging between 11% and 20% of GDP. The opening up of public procurement within the Internal Market has increased cross-border competition and improved prices paid by public authorities. There remains potential for significant further competition in procurement markets and for further savings for taxpayers.

Public procurement is subject to Community and international rules although not all public procurement is subject to these obligations. Under these rules public sector procurement must follow transparent open procedures ensuring fair conditions of competition for suppliers. Some purchases can be exempted from Community rules under certain conditions (ex: arms, munitions and war material, if this is necessary for the protection of the essential interests of security) and purchases below thresholds must respect the principles of the Treaty only.

The legislative package of public procurement Directives, approved in 2004 by the European Parliament and the EU's Council of Ministers, will help simplify and modernise procurement procedures, for example by facilitating electronic procurement in the public sector.

The correct and rapid implementation of the new Directives should help open up public procurement, improve the functioning of the Internal Market and enable the EU to reap the full benefits from an enlarged Internal Market.

More information

- [EU Public Procurement – Key Documents](#)
- [Public Procurement Policy](#)

Some discussion topics on this theme:

- To what extent the public procurement can constitute the first and crucial push for the adoption of the results of NEM technologies and NEM related projects achievements?
- Can NEM community be organized to serve as pole of discussion and promotion for public procurement?

2.10 FP8: Maximizing impact on society

In Europe it has been widely accepted that there exists a gap between research activities and its results and the final product or service that impacts on the society.

Efforts have been recently made to incorporate innovation as part of ETPs activities as a possible solution to overcome this systemic failure, thus converting ETPs into ETiPs, and promoting innovative activities as a logical bridge between research and society, following research activities and previous to the commercial phase.

The Lund declaration and the Grand Societal Challenges are another attempt to focus research activities already since the very beginning on important societal needs and therefore facilitating the later impact of research results on society.

All these previously mentioned actions and initiatives have been excellently welcomed by the European research community, but it is necessary to complement them with a structural change in FP8 that reinforces this common trend towards the maximization of impact on society of research activities. Being the Framework Programme the most important European instrument for the promotion of research activities in Europe, it is essential that this Programme is adapted to this new scenario.

These changes in FP8 should address and respond to the following aspects:

- Making that research activities conducted in FP8 are followed by an innovation phase that puts results into the market, benefiting the society.
 - o Impact section should include an investment plan foreseen the innovative phase that would come right after the project end, proposing possible sources of funding or investors, and a market foresight study.
- Research cycle in becoming shorter and shorter, and the time between research milestones and products/services put into the market as result of these research activities is counted in months. This aspect is particularly relevant for some sectors, such as ICT for instance, and it is definitely crucial for the final success of the research process.
 - o FP8 projects should include the possibility of having intermediate results before the project end, that could be derived from the research chain into the innovation phase and then to the market.
 - o After this innovative and market phase, feedback could be also brought back to the research chain in order to improve the technologies involved with opinions from the users.

More Information

- [Lund declaration](#)
- [ERAB first annual report: "Preparing Europe for a New Renaissance A Strategic View of the European Research Area"](#)

Some discussion topics on this theme:

- How to incorporate an innovation phase to FP8 projects?
- How to make that FP8 projects could produce intermediate results put into the market, making shorter research cycles in research projects?

ANNEX I: International Cooperation Projects

Following is summary information about past and ongoing projects for each international region:

| LATIN AMERICA | | | |
|-----------------|---|--|---|
| Project Acronym | Title | Coordinator | International Partners |
| SALA+ | Support Action for a European and Latin America Strategic Cooperation on Networked Media R&D | AETIC Principe de Vergara 74 MADRID SPAIN | Germany, United Kingdom, France, Argentina, Chile, Costa Rica, Uruguay, Colombia. |
| SALA3D | European and Latin American Strategic Cooperation on 3D Internet R&D | AETIC Principe de Vergara 74 MADRID SPAIN | Uruguay, Colombia |
| MANCOOSI | Managing the complexity of the open source infrastructure | UNIVERSITE PARIS DIDEROT (France) Name: DI COSMO, Roberto (Professor) | Argentina |
| FIRST | Implementing cooperation on Future Internet and ICT Components between Europe and Latin America | ROSE Vision Av. Europa 42, MADRID SPAIN | Brazil, Mexico, Colombia, Costa Rica |
| FORESTA | Fostering the Research Dimension | ROSE Vision | Brazil, Mexico, Argentina, |

| | | | |
|------------------|---|--|---|
| | of Science and Technology Agreements | Av. Europa 42, MADRID SPAIN | Colombia, Chile, Costa Rica |
| PRO-IDEAL | Promotion of an ICT dialogue between Europe and America Latina | INMARK ESTUDIOS Y ESTRATEGIAS S.A. AVENIDA LLANO CASTELLANO 43 MADRID SPAIN | Brazil, Argentina, Uruguay, Chile |
| OASIS | Open architecture for accessible services integration and standardisation | FIMI S.R.L. FIMI via Saul Banfi Casella Postale 2104 SARONNO ITALY | Mexico, China |

CANADA

| Project Acronym | Title | Coordinador | International Partners |
|-----------------|--|--|---------------------------------|
| INTELLEO | Intelligent learning extended organisation | INSTITUT FUR ANGEWANDTE SYSTEMTECHNIK BREMEN GMBH WIENER STRASSE 1 28359 BREMEN GERMANY | Canada |
| AEGIS | Open accessibility everywhere: groundwork, infrastructure, standards | ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS CHARILAOU THERMI ROAD 6 KM 6TH KM PO Box 361 57001 THERMI THESSALONIKI GREECE | Canada, China, United States |

| | | | |
|--------------|--|---|-----------------------|
| WHERE | Wireless hybrid enhanced mobile radio estimators | DEUTSCHES ZENTRUM FUER LUFT UND RAUMFAHRT E.V. LINDER HOHE 51147 KOELN GERMANY | Canada, China |
| SCY | Science Created by You | UNIVERSITEIT TWENTE DRIENERLOLAAN 5 7522 NB ENSCHEDA NETHERLANDS | Canada |
| 4WARD | Architecture and design for the future Internet | ERICSSON AB 164 80 STOCKHOLM SWEDEN | Canada, United States |

| BELARUS | | | |
|------------------------|--|---|--|
| Project Acronym | Title | Coordinador | International Partners |
| SCUBE-ICT | Strategic cooperation between Ukraine, Belarus and EU in information and communication technologies | INTERNATIONAL ENVIRONMENT AND QUALITY SERVICES NORTH GREECE LTD NESTOROS TYPA ST. 7 54646 THESSALONIKI GREECE | Belarus, Ukraine. |
| EXTEND | Extending ICT research co-operation between the European Union, Eastern Europe and the Southern Caucasus | PLANET S.A LOUISE RIENCOURT 64, APOLLON TOWER na 11523 ATHENS GREECE | Belarus, Ukraine, Armenia, Azerbaijan, Moldova, Georgia. |
| ISTOK-SOYUZ | Information society technologies to open knowledge for Eastern Europe and | INNO AG Karlstrasse 45b Postfach 3366 KARLSRUHE | Belarus, Kazakhstan, Russia, Ukraine, Armenia, |

| | |
|--------------|---------|
| central Asia | GERMANY |
|--------------|---------|

| RUSSIA | | | |
|------------------------|--|--|---|
| Project Acronym | Title | Coordinador | International Partners |
| SYNC3 | Synergetic content creation and communication | ATHENS TECHNOLOGY CENTER SA CONSULTING Rizariou Street 10 PO Box 15233 ATHENS GREECE | Russia |
| ISTOK-SOYUZ | Information society technologies to open knowledge for Eastern Europe and central Asia | INNO AG Karlstrasse 45b Postfach 3366 KARLSRUHE GERMANY | Belarus, Kazakhstan, Russia, Ukraine, Armenia, |
| IMPACT | Improving access to text | Koninklijke Bibliotheek Prins Willem Alexanderhof 5 Po Box 90407 2595 Be Den Haag Netherlands | Russia |

| AFRICA SUB-SAHARANS | | | |
|-----------------------------|--|---|---|
| Project Acronym | Title | Coordinador | International Partners |
| IST-AFRICA 2009-2011 | Regional Impact of Information Society Technologies in <i>Africa</i> | limc International Information Management Corporation Limited 13 Docklands Innovation Park, 128 East Wall Road 3 Dublin | Namibia, Lesotho, Uganda, South Africa, Tanzania, Mozambique, Botswana |

| Ireland | | | |
|-----------------------|--|---|--|
| EUROAFRICA-ICT | Supporting the development of collaborative research on ICT between sub-Saharan Africa, the Caribbean and Europe | SIGMA Consultants 1240 Route Des Dolines Buropolis Sophia Antipolis 06560 Valbonne France | Jamaica, Uganda, Senegal, South Africa, Rwanda |

| INDIA | | | |
|--------------------------|--|---|------------------------|
| Project Acronym | Title | Coordinador | International Partners |
| EURO-INDIA SPIRIT | Euro-India ICT Co-operation | ERCIM - European Research Consortium for Informatics and Mathematics | India |
| SYNCHRONISER | Enhancing the impact of Euro-India ICT Policy Dialogue | TESEO Avenue de Tervuren 32-34 7th floor 1040 Bruxelles, Belgium | India |

| KOREA | | | |
|-----------------|---|--|------------------------|
| Project Acronym | Title | Coordinador | International Partners |
| KORANET | Korean scientific cooperation network with the European Research Area | International Bureau of the Federal Ministry of Education and Research, German Aerospace Agency | Korea |

| GERMANY | | | |
|---------------|--|---|-----------------------------|
| COAST | COntent Aware Searching, retrieval and sTreaming | STMICROELECTRONICS SRL EUROPEAN R&D AND PUBLIC AFFAIRS VIA C.OLIVETTI 2 Casella Postale 2004 AGRATE BRIANZA ITALY | Korea, United States |
| 3DLIFE | Bringing the Media Internet to Life | QMUL - Queen Mary, University of London Ebroul Izquierdo UNITED KINGDOM | Korea |
| NOTUBE | Networks and ontologies for the transformation and unification of broadcasting and the Internet | VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG FACULTY OF SCIENCES AMSTERDAM NETHERLANDS | Korea |
| LARKC | Large scale semantic computing semantic Web technologies distributed reasoning probabilistic reasoning web-scale inference information retrieval | UNIVERSITAET INNSBRUCK DIGITAL ENTERPRISE RESEARCH INSTITUTE Technikerstrasse 21 Postfach 6020 INNSBRUCK AUSTRIA | Korea, United States, China |

| JAPAN | | | |
|-----------------|-----------------------------------|-----------------------------------|------------------------|
| Project Acronym | Title | Coordinador | International Partners |
| KYOTO | Knowledge yielding ontologies for | VERENIGING VOOR CHRISTELIJK HOGER | Japan, Taiwan |

| | |
|-------------------------------|--|
| transition-based organization | ONDERWIJS WETENSCHAPPELIJK ONDERZOEK EN PATIENTENZORG FACULTEIT DER LETTEREN DE BOELELAAN 1105 1081HV AMSTERDAM NETHERLANDS |
|-------------------------------|--|

SOUTH ASIA

| Project Acronym | Title | Coordinador | International Partners |
|-----------------|--|--|--|
| SEACOO | Further developing strategic RandD cooperation with South-East Asia on ICT | SIGMA CONSULTANTS 1240 ROUTE DES DOLINES BUROPOLIS SOPHIA ANTIPOLIS 06560 VALBONNE FRANCE | Vietnam, Indonesia, Cambodia, Philippines, Malaysia, Thailand, Singapore |
| SECAS | Strategies for European ICT RTD Collaboration with Australia and Singapore | EUTEMA TECHNOLOGY MANAGEMENT GMBH DR. KARL-LUEGER- RING 10 Postfach 1010 WIEN AUSTRIA | Singapore, Australia |

TAIWAN

| Project Acronym | Title | Coordinador | International Partners |
|-----------------|---|---|------------------------|
| KYOTO | Knowledge yielding ontologies for transition-based organization | VERENIGING VOOR CHRISTELIJK HOGER ONDERWIJS WETENSCHAPPELIJK | Japan, Taiwan |

ONDERZOEK EN
PATIENTENZORG
FACULTEIT DER
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DE BOELELAAN 1105
1081HV
AMSTERDAM
NETHERLANDS

| BRAZIL | | | |
|------------------------|---|---|--|
| Project Acronym | Title | Coordinador | International Partners |
| FIRST | Implementing cooperation on Future Internet and ICT Components between Europe and Latin America | ROSE Vision Av. Europa 42, MADRID SPAIN | Brazil, Mexico, Colombia, Costa Rica |
| FUTON | Fibre optic networks for distributed and extendible heterogeneous radio architectures | NOKIA SIEMENS NETWORKS PORTUGAL SA NSN FC GLOBAL DC RUA IRMAOS SIEMENS 1 1 PO Box 2720-093 LISBOA PORTUGAL | Brazil |
| FORESTA | Fostering the Research Dimension of Science and Technology Agreements | ROSE Vision Av. Europa 42, MADRID SPAIN | Brazil, Mexico, Argentina, Colombia, Chile, Costa Rica |
| DYNALEARN | Engaging and informed tools for learning conceptual system knowledge | UNIVERSITEIT VAN AMSTERDAM SPUI 21 Postbus 19268 | Brazil |

| | | | |
|------------------|--|--|---|
| | | 1012WX AMSTERDAM NETHERLANDS | |
| PRO-IDEAL | Promotion of an ICT dialogue between Europe and America Latina | INMARK ESTUDIOS Y ESTRATEGIAS S.A. AVENIDA LLANO CASTELLANO 43 - PO Box 28034 MADRID SPAIN | Brazil, Argentina, Uruguay, Chile |

| MEDITERRANEAN AREA | | | |
|---------------------------|--|--|-------------------------------|
| Project Acronym | Title | Coordinador | International Partners |
| IDEALIST2011 | Trans-national cooperation among ICT national contact points | Deutsches Zentrum Fuer Luft - Und Raumfahrt Ev Linder Hoehe N/A 51147 Koeln GERMANY | |

| CHINA | | | |
|------------------------|---|--|-------------------------------|
| Project Acronym | Title | Coordinador | International Partners |
| ALICANTE | Media Ecosystem Deployment Through Ubiquitous Content-Aware Network Environments | CNRS - Centre National De La Recherche Scientifique - Labri FRANCE | China |
| MULTICUBE | Multi-objective design space exploration of multi-processor soc architectures for embedded multimedia | POLITECNICO DI MILANO DIPARTIMENTO DI ELETTRONICA E INFORMAZIONE | China |

| | | | |
|-----------------|--|---|-----------------------------|
| | applications | Via Ponzio 34/5 Casella Postale 2013 MILANO ITALY | |
| N-CRAVE | Network coding for robust architectures in volatile environments | CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS DIRECTOR OF CENTRAL ADMINISTRATION 6TH KM CHARILAOU-THERMI ROAD PO Box 57001 THERMI-THESSALONIKI GREECE | China |
| OASIS | Open architecture for accessible services integration and standardisation | FIMI S.R.L. FIMI via Saul Banfi Casella Postale 2104 SARONNO ITALY | Mexico, China |
| LARKC | Large scale semantic computing semantic Web technologies distributed reasoning probabilistic reasoning web-scale inference information retrieval | UNIVERSITAET INNSBRUCK DIGITAL ENTERPRISE RESEARCH INSTITUTE Technikerstrasse 21 Postfach 6020 INNSBRUCK AUSTRIA | Korea, United States, China |
| HELIUM3D | High efficiency laser-based multi-user multi-modal 3D display | DE MONTFORT UNIVERSITY THE GATEWAY LEICESTER UNITED KINGDOM | China |
| ROLE | Responsive open learning environments | FRAUNHOFER-GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN | China |

| | | | |
|-----------------|---|---|------------------------------|
| | | FORSCHUNG E.V HANSASTRASSE 27C 80686 MUENCHEN GERMANY | |
| AEGIS | Open accessibility everywhere: groundwork, infrastructure, standards | ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS CHARILAOU THERMI ROAD 6 KM 6TH KM PO Box 361 57001 THERMI THESSALONIKI GREECE | Canada, China, United States |
| WHERE | Wireless hybrid enhanced mobile radio estimators | DEUTSCHES ZENTRUM FUER LUFT UND RAUMFAHRT E.V. LINDER HOHE 51147 KOELN GERMANY | Canada, China |
| EFIPSANS | Exposing the features in IP version six protocols that can be exploited/extended for the purposes of designing/building autonomic networks and services | ERICSSON AB 164 80 STOCKHOLM SWEDEN | China |

ANNEX II: NEM Related Standardization Bodies

This Annex details the standardization bodies working in the NEM area.

ITU

The **International Telecommunication Union** (ITU) (ref. www.itu.int) is the leading United Nations agency for information and communication technology issues, and the global focal point for governments and the private sector in developing networks and services. For nearly 145 years, ITU has coordinated the shared global use of the radio spectrum, promoted international cooperation in assigning satellite orbits, worked to improve telecommunication infrastructure in the developing world, established the worldwide standards that foster seamless interconnection of a vast range of communications systems and addressed the global challenges of our times, such as mitigating climate change and strengthening cybersecurity.

ITU also organizes worldwide and regional exhibitions and forums, such as ITU TELECOM WORLD, bringing together the most influential representatives of government and the telecommunications and ICT industry to exchange ideas, knowledge and technology for the benefit of the global community, and in particular the developing world.

ITU is dealing with **both the administration of frequency spectrum and satellite orbits** as well as with technical questions related to **telecommunication. International Standards** are developed

within the ITU Radiocommunication Sector ITU-R and the ITU Telecommunication Sector ITU-T.

The third sector, ITU-D, is engaged in improving the telecommunication infrastructure world-wide

and especially for the developing countries (ref. details under <http://www.itu.int/net/about/index.aspx>).

From broadband Internet to latest-generation wireless technologies, from aeronautical and maritime navigation to radio astronomy and satellite-based meteorology, from convergence in fixed-mobile phone, Internet access, data, voice and TV broadcasting to next-generation networks, ITU is committed to connecting the world.

ITU was founded by 20 European Governments in Paris on 17 May 1895, and is thus the **oldest international organization**. Today, ITU represents more than 190 Member States and more than 700 **Sector Members and Associates**. Numerous institutions and companies are so-called sector members, i.e. participate in the work of one or more of the three ITU Sectors. The name ITU was adopted in 1934. ITU is based in Geneva, Switzerland.

CENELEC

CENELEC, the European Committee for Electrotechnical Standardization (ref. www.cenelec.eu), was created in 1973 as a result of the merger of two previous European organizations: CENELCOM and CENEL. Nowadays, CENELEC is a non-profit technical organization set up under Belgian law and composed of the National Electrotechnical Committees of 31 European countries. In addition, 11 National Committees from neighbouring countries are participating in CENELEC work with an Affiliate status.

CENELEC's mission is to prepare voluntary electrotechnical standards that help develop the Single European Market/European Economic Area for electrical and electronic goods and services removing barriers to trade, creating new markets and cutting compliance costs.

The CENELEC TC 206 committee is taking care of "Consumer equipment for entertainment and information and related sub-systems". Its mission is to develop standards for audio, video and multimedia sub-systems and equipment for consumer use. Most of work items are related to NEM activities. Among them, it can be mentioned:

- Equipment interfaces for set top boxes in the digital television domain
- Common interface specification for conditional access and other decoder applications
- Satellite channel router to control outdoor units in the receiving television systems with single dwelling and multiple dwelling units

The coordination of this TC with other technical committees is very important and in particular with DVB, EUREKA 147 (or successor – European Commission initiative), ETSI and EACEM.

ETSI

The European Telecommunications Standards Institute (ETSI) (ref. www.etsi.org) produces globally-applicable standards for Information and Communications Technologies (ICT), including fixed, mobile, radio, converged, broadcast and internet technologies.

ETSI is officially recognized by the European Union as a European Standards Organization. The high quality of his work and the open approach to standardization has helped them evolve into a European roots - global branches operation with a solid reputation for technical excellence.

ETSI is a not-for-profit organization with more than 700 ETSI member organizations drawn from 62 countries across 5 continents world-wide.

The principal role of the ETSI shall be technical pre-standardization and standardization at the European level in the following fields:

- Telecommunications.
- Areas common to telecommunications and information technology in co-ordination with CEN and CENELEC.
- Areas common to telecommunications and broadcasting (especially audio-visual and multimedia matters) in co-ordination with CEN, CENELEC and the EBU.

Being the body that standardised the successful GSM standard, and being one of the three Standard Development Organisation (SDO's) that are officially recognised by the European Commission, ETSI is well known ICT-related standards body in Europe.

If a new area for standardisation is identified and accepted for studies, ETSI normally creates a specific Technical Committee (TC) for that purpose. Mainly two Technical Committees are dealing with NEM related standards:

- TC TISPAN: (Telecom & Internet converged Services & Protocols for Advanced Networks) TISPAN is responsible for all aspects of standardisation for present and future converged networks including the next generation networks and including service aspects, architectural aspects, protocol aspects, QoS studies, numbering, naming, addressing, routing, security related studies, home devices and home networking aspects, network management, mobility aspects within fixed networks, using existing and emerging technologies.
- TC MCD: (Media Content Delivery) MCD is the ETSI technical body in charge of guiding and coordinating standardization work aiming the successful overall development of multimedia systems (television and communication) responding to the present and future market requests on media content distribution.

DVB

The Digital Video Broadcasting Project (DVB) is an industry-led consortium of around 250 broadcasters, manufacturers, network operators, software developers, regulatory bodies and others in over 35 countries committed to designing open technical standards for the global delivery of digital television and data services. Services using DVB standards are available on every continent with more than 500 million DVB receivers deployed.

The DVB Project was initiated in 1992 and has subsequently implemented an approach of **precompetitive co-operation** in the development of **open digital TV standards** that can be freely adopted worldwide. By incorporating both commercial and technical bodies within the organisation DVB has succeeded in delivering a range of world-leading transmission standards for television systems operating over a range of media. DVB is not a standardisation body itself: the specifications drafted in the various technical Ad-hoc groups are, after approval in the DVB hierarchy, sent to bodies like ETSI or ITU to obtain formal status as a standard.

The active work in the DVB technical area is performed in ad-hoc groups. Each of these groups works on the grounds of a Commercial Requirements document provided by the

Commercial Module. This is a set of user requirements that outline the market parameters such as user functions, timescales and price range. A DVB specification is developed in the Technical Module and its Working Groups. Here the technological implications of the user requirements are examined and available technologies are explored. Once the Technical Module reaches consensus on the resulting specification, and the Commercial Module's support for it has been ensured, the Steering Board is solicited to give the final approval. It is then offered for standardization to the relevant international standards body (i.e. *ETSI* or *CENELEC*) through the EBU/ETSI/CENELEC Joint Technical Committee as well as sometimes also to the International Telecommunication Union (*ITU-R* or *ITU-T*).

DVB has produced several specifications relevant to the NEM field of work: The DVB-SH, a hybrid satellite and terrestrial system working in the sub-3GHz frequency domain, enables reception of media related services also in areas that are not (yet) covered terrestrially. DVB-S2 has established itself as the de facto standard for HD satellite transmission. Nearly all satellite HD programmes use H.264 video coding and rely on DVB-S2 transmission to keep the relative bandwidth requirements about the same as for MPEG-2/ DVB-S-based SD transmission. DVBIPI specifies the DVB-IPTV.

DVB has produced several specifications relevant to the NEM field of work. The **DVB-S, DVB-C and DVB-T** standards are now benchmarks for the physical layer for delivery of digital TV services cover, respectively, satellite, cable and terrestrial networks. The advent of interactive networks spawned the standardisation of return channels for cable (DVB-RCC), satellite (DVB-RCS), LMDS (DVB-RCL) and terrestrial (DVB-RCT) systems. The DVB-SH, a hybrid satellite and terrestrial system working in the sub-3 GHz frequency domain, enables reception of media related services also in areas that are not (yet) covered terrestrially. The DVB Project also expanded into new areas taking over the activities of the Multimedia Home Platform Launching Group and releasing the DVB-MHP specification.

DVB-S2 has established itself as the de facto standard for HD satellite transmission. Nearly all satellite HD programmes use H.264 video coding and rely on DVB-S2 transmission to keep the relative bandwidth requirements (portion of a 27 or 30 MHz satellite transponder) about the same as for MPEG-2 / DVB-S-based SD transmission. Using those technologies implies the same costs for an HD channel as compared to an SD channel using older technology (which it has to do due to the installed receiver base). Digital transmissions via satellite are affected by power and bandwidth limitations. Therefore DVB-S2 provides for many transmission modes (FEC coding and modulations), giving different trade-offs between power and spectrum efficiency.

The broadcasting of digital television signals has been originally thought to address fixed reception, although mobile reception is also feasible with current basic digital television standards (DVB-T, DVB-S). Advances on signal processing are allowing the affordable use of small and cheap receivers of digital signals. Accordingly, DVB has

now specified **DVB-H** for broadcasting to handheld devices; it includes all the features of DVB-T but with improved error tolerance and features to reduce the battery power needed.

DVB-SH is a transmission system standard designed to deliver video, audio and data services to small handheld devices, such as mobile telephones and PDAs, using S-band frequencies. The key feature of DVB-SH is the fact that it is a hybrid satellite/terrestrial system that will allow the use of a satellite to achieve coverage of large regions or even a whole country. In areas where direct reception of the satellite signal is not possible, a terrestrial gap filler can be used to provide coverage. It is designed to use frequencies below 3GHz, typically around 2.2GHz. The system and waveform specifications have been published as ETSI standards (TS 102 585 and EN 302 583). In December 2006, the European Commission confirmed that a slice of S-Band spectrum can be used for mobile satellite services and that complementary ground components of a hybrid satellite/terrestrial system are also permitted. In September 2007 the regulatory authorities in France indicated that mobile TV services in that country will be provided using a combination of DVB-H and DVB-SH.

April 2008 saw the launch in the USA of a geostationary satellite dedicated to the deployment of a nation-wide DVB-SH network providing video services, navigation information and emergency messaging. Alpha trials of this service are already under way. In Europe, the first DVB-SH technical pilots have been successfully completed and a satellite due for launch in 2009 will target six large European markets.

The DVB-SH system and waveform specifications have been published as formal ETSI standards. Work is continuing within the DVB Project's Technical Module on items such as the development of a set of implementation guidelines and the validation of the interfaces with DVB-IPDC.

DVB-T2 is a new digital terrestrial transmission system developed by the DVB Project. It is the most advanced such system in the world and introduces the latest modulation and coding techniques to enable highly efficient use of valuable terrestrial spectrum for the delivery of audio, video and data services to fixed, portable and mobile devices. DVB-T2 is not designed to replace DVB-T; rather the two standards will coexist in many markets for many years. A carefully managed transition from DVB-T to DVB-T2 at analogue switch-over will allow best use to be made of the 'digital dividend' to offer new services such as HDTV and innovative new datacasting services while economising on valuable spectrum. The DVB-T2 specification was approved by the DVB Steering Board at the end of June 2008. On approval it was released as a DVB BlueBook and sent to ETSI (European Telecommunications Standards Institute) for publication as a formal standard. Vendors are already working on the design of DVB-T2 equipment and pilot services are on air in the UK.⁵

DVB-IPI specifies the DVB-IPTV, the Handbook 1.3 and the HN Guidelines. They include several extensions to the available specifications and they suite as the connection to other international organisations like the ITU and the DLNA.

CPCM is a system for Content Protection & Copy Management of commercial digital content delivered to consumer products and home networks. CPCM manages content usage from acquisition into the CPCM system until final consumption, or export from the CPCM system, in accordance with the particular usage rules of that content. Possible sources for commercial digital content include broadcast (e.g., cable, satellite, and terrestrial), Internet-based services, packaged media, and mobile services, among others. CPCM is intended for use in protecting all types of content - audio, video and associated applications and data.

The **DVB-RCS** standard was developed in response to a request from a number of satellite and network operators. These organizations wanted to be able to deploy VSAT systems to enable two way radio communications, i.e. not only from the satellite to the users, but also allowing the user to be able to send data back up to the satellite and hence into a data network. At the outset of the development of the DVB-RCS standard, the partners in the project wanted a standard for a satellite system that would enable two way communications. In addition to this the satellite standard would need to be open to mitigate the risks of being tied to a single vendor. DVB-RCS is a technical standard, designed by the DVB Project, that defines a complete air interface specification for two-way satellite broadband VSAT (very small aperture terminal) systems. Low cost VSAT equipment can provide highly dynamic, demand-assigned transmission capacity to residential and commercial/institutional users. DVB-RCS provides users with the equivalent of an ADSL or cable Internet connection, without the need for local terrestrial infrastructure.

UPnP/DLNA

UPnP Forum is an industry initiative designed to enable simple and robust connectivity among consumer electronics, intelligent appliances and mobile devices from many different vendors. As a group, we are dedicated to making the connected home and lifestyle mainstream experiences for consumers - and great opportunities for the industry.

The Forum consists of more than 899 vendors, including industry leaders in:

- Computing, printing and networking
- Consumer electronics
- Home appliances, automation, control and security
- Mobile products.

By defining and publishing UPnP device and service descriptions, Forum members work to

- Enable the emergence of easily connected devices and simplify the implementation of network devices
- Allow devices to connect seamlessly
- Drive the development of an ecosystem to support the UPnP devices.

Digital Living Network Alliance (DLNA) began in 2003 when a collection of companies from around the world agreed that they all made better products when those products were compatible.

Members of DLNA share a vision of a wired and wireless interoperable network of Personal Computers, Consumer Electronics and mobile devices in the home enabling a seamless environment for sharing and growing new digital media and content services.

DLNA published its Expanded Guidelines in January 2007. Besides QoS (based on UPnP QoS) it includes link protection guidelines and therewith allows local distribution of premium content. UPnP has continued working on QoS 3.0 which for the first time will include the user's preferences into the policy enforcement. This is highly relevant to the NEM domain.

OMA:

OMA (Open Mobile Alliance) is the leading industry forum for developing market driven, interoperable mobile service enablers. OMA was formed in June 2002 by nearly 200 companies including the world's leading mobile operators, device and network suppliers, information technology companies and content and service providers. The fact that the whole value chain is represented in OMA marks a change in the way specifications for mobile services are done. Rather than keeping the traditional approach of organizing activities around 'technology silos', with different standards and specifications bodies representing different mobile technologies, working independently, OMA is aiming to consolidate into one organization all specification activities in the service enabler space.

OMA is the focal point for the development of mobile service enabler specifications, which support the creation of interoperable end-to-end mobile services. OMA drives service enabler architectures and open enabler interfaces that are independent of the underlying wireless networks and platforms. OMA creates interoperable mobile data service enablers that work across devices, service providers, operators, networks, and geographies. Toward that end, OMA will develop test specifications, encourage third party tool development, and conduct test activities that allow vendors to test their implementations.

OMA has pioneered significant consolidation of mobile service enabler organizations with the integration of the WAP Forum, Location Interoperability Forum (LIF), SyncML Initiative, MMS-IOP (Multimedia Messaging Interoperability Process), Wireless Village, Mobile Gaming Interoperability Forum (MGIF), and the Mobile Wireless Internet Forum (MWIF) into OMA. This consolidation promotes end-to-end interoperability across different devices, geographies, service providers, operators, and networks, and further supports OMA's market and user requirements focus to guide the specification work.

Significant new work in OMA is leading to the development of mobile service enablers in areas such as Device Management, Push-to-talk Over Cellular, Mobile Broadcast, and more.

The OMA focus is on services enablers, to offer functionalities to the application level for building the services to the end-users. IT involvement in almost all the OMA working group aimed to the standardization of several NEM enablers technologies, like Broadcast services, Digital Rights Management, Content Delivery, Rich Media Environment and many others.

ISO/IEC:

ISO (International Organization for Standardization) is the world's largest developer and publisher of International Standards in all technical domains except electrotechnology and telecommunications (ref. <http://www.iso.org>). IEC (International Electrotechnical Commission) is “the world's leading organization that prepares and publishes International Standards for all electrical, electronic and related technologies — collectively known as *electrotechnology*” (ref. <http://www.iec.ch>). Jointly, **ISO/IEC** issue standards on Information Technology and operate a joint ISO/IEC Information Centre, (ref. <http://www.standardsinfo.net/info/livelink/fetch/2000/148478/6301438/index.html>). All MPEG standards have emerged from this joint undertaking, notably from Subcommittee SC29 (see full list of all IEC Technical Committees and Subcommittees under http://www.iec.ch/dyn/www/f?p=102:6:0::: FSP_LANG_ID:25).

The most relevant working group related to NEM technologies within ISO is the Moving Picture Experts Group (MPEG). MPEG is a working group of the joint technical committee for Information Technology, ISO/IEC JTC1 and is in charge of the development of international standards (ISO MPEG) for compression, decompression, processing, and coded representation of moving pictures, audio and their combination. There are various standards published in this field, and they are commonly referred to as MPEG 1, MPEG 2, MPEG 4, MPEG 7 and MPEG 21.

ISO/IEC Moving Picture Experts Group (MPEG): Standardization of digital content representation dedicated to rich-media interactive and streamable services. Some recent standardization results:

- MPEG-4 LAsER (Lightweight Application Scene Representation)
- MPEG-4 AVC (Advanced Video Coding)
- MPEG-7 Query Format
- MPEG-21 (IPMP – Intellectual Property Management and Protection) and (REL – Rights Expression Language)

The most prominent standard in video compression is presumable that on **MPEG-2** which is published under ISO/IEC 13818.

Open IPTV Forum:

The Open IPTV Forum was created in March 2007, to provide an IPTV solution enabling a "plug and play" experience for the end-users and filling a industry gap making it independent from the technology behind it.

The "easy to use" experience usually requires quite a lot of advanced techniques behind the scenes so to say, to be able to provide that "plug and play" experience for the end-user and the end to end IPTV solution is not an exception.

This implies that the different players in the IPTV value chain needed to have a "tool" to easily develop their own products to fit into the "plug and play" solution. The "tool" is the open standards that are created in this Open IPTV Forum.

The Open IPTV Forum is a pan-industry initiative with the purpose of producing end to end specifications for IPTV that will take the next generation of IPTV to the mass market. The forum is fully open to participation across the communications and entertainment industries.

At present the Forum has published an end-to-end Functional Architecture (version 2) and seven volumes of technical specifications, covering: Protocols, Content Metadata, Media formats, Execution Environments and Content and Service Protection.

IEEE:

IEEE is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. IEEE and its members inspire a global community through its highly cited publications, conferences, technology standards, and professional and educational activities.

The IEEE Standards Association (SA) is a leading consensus-building organization that nurtures, develops and advances global technologies. IEEE-SA outputs drive the functionality, capabilities and interoperability of a wide range of products and services that transform the way people live, work and communicate.

With collaborative thought leaders in more than 160 countries, IEEE-SA promotes innovation, enables the creation and expansion of international markets, and helps protect health and public safety.

Standards-making in IEEE takes place in the so-called IEEE Standards Association (IEEE-SA). There are some Working Groups inside IEEE working on NEM related standards like IEEE Communication Society or IEEE Consumer Electronics Society working groups.

IETF:

The Internet Engineering Task Force (IETF) is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of

the Internet architecture and the smooth operation of the Internet. It is open to any interested individual.

The actual technical work of the IETF is done in its working groups, which are organized by topic into several areas (e.g., routing, transport, security, etc.). The IETF holds meetings three times per year.

The IETF working groups are grouped into areas, and managed by Area Directors, or ADs. The ADs are members of the Internet Engineering Steering Group (IESG). Providing architectural oversight is the Internet Architecture Board, (IAB). The IAB also adjudicates appeals when someone complains that the IESG has failed. The IAB and IESG are chartered by the Internet Society (ISOC) for these purposes. The General Area Director also serves as the chair of the IESG and of the IETF, and is an ex-officio member of the IAB.

The Internet Engineering Task Force develops and promotes Internet standards, in particular the TCP/IP protocol suit. The TCP/IP protocol is possibly one of the most used and most successful protocols in the world, and is also the basic building blocks for many other system standards, such as 3GPP.

In addition to working groups around Network issues and Internet area, there are some other working on issues related to Networked Media technologies like IP over DVB, Audio/Video Transport, Internet Wideband Audio Codec, Media Server Control and other within the Virtual applications and infrastructure area.

3GPP:

The original scope of 3GPP (3rd Generation Partnership Project) was to produce Technical Specifications and Technical Reports for a 3G Mobile System based on evolved GSM core networks and the radio access technologies that they support (i.e., Universal Terrestrial Radio Access (UTRA) both Frequency Division Duplex (FDD) and Time Division Duplex (TDD) modes).

The scope was subsequently amended to include the maintenance and development of the Global System for Mobile communication (GSM) Technical Specifications and Technical Reports including evolved radio access technologies (e.g. General Packet Radio Service (GPRS) and Enhanced Data rates for GSM Evolution (EDGE)).

3GPP was created in December 1998 by the signing of the "The 3rd Generation Partnership Project Agreement". The latest 3GPP Scope and Objectives document has evolved from this original Agreement.

The discussions that led to the signing of the 3GPP Agreement were recorded in a series of slides called the "Partnership Project Description" that describes the basic principles and ideas on which the project is based. The Partnership Project Description has not been maintained since its first creation but the principles of operation of the project still remain valid.

The most part of 3GPP activities related to Networked Media sector are oriented to mobile technologies.

HGI:

The Home Gateway Initiative, founded in 2004 by major broadband service providers (BSPs), and joined by leading vendors of digital home equipment, is shaping the way that IP services are delivered to the home.

The HGI publishes requirements for digital home building blocks. Those building blocks are the hardware and software in the digital home that connect consumers and services. They include home gateways, home networks, and home network devices.

HGI projects are triggered by the services vision of our BSP members, and build on the technical collaboration of all the HGI participants. The HGI welcomes BSPs and vendors from across the globe. Our members represent the entire spectrum of players in the broadband home area.

The Home Gateway Initiative is an open forum with the aim to release specifications of the home gateway. HGI was formed to boost the market of home communication services to the millions of broadband customers served by its founding members. The initiative will drive the development of residential gateways supporting the delivery of services. HGI will contribute to appropriate standards bodies and especially to an organization as the ITU-T.

W3C

The World Wide Web Consortium is an international community that develops standards to ensure the long-term growth of the Web. W3C develops technical specifications and guidelines through a process designed to maximize consensus about the content of a technical report, to ensure high technical and editorial quality, and to earn endorsement by W3C and the broader community.

W3C develops technical specifications and guidelines through a process designed to maximize consensus about the content of a technical report, to ensure high technical and editorial quality, and to earn endorsement by W3C and the broader community. Some of these technical specifications related to NEM issues are about Authoring tools, Metadata, Semantic Annotation, Content transformation, etc...

SMPTE

The Society of Motion Picture and Television Engineers (SMPTE) was founded in 1916 to advance theory and development in the motion imaging field. Today, SMPTE serves its members with the latest technology information and education on a rapidly changing industry. SMPTE also is an accredited and globally-respected industry standards-setting body. As the leading technical society for the motion imaging industry, SMPTE is

shaping the future of the constantly evolving content business - and is well-positioned to provide its members with many unique benefits - opportunities to:

- Participate in development of industry standards
- Gain knowledge through web-based and face-to-face seminars, exhibitions and conferences
- Access timely information and resources on the latest technology developments
- Connect with a network of like-minded peers

The most part of SMPTE activities are oriented to Networked Media sector and specifically to the motion pictures technologies.

EBU

The European Broadcasting Union is the largest association of national broadcasters in the world. We promote cooperation between broadcasters and facilitate the exchange of audiovisual content. The EBU works to ensure that the crucial role of public service broadcasters is recognised and taken into consideration by decision-makers.

Many Expert Communities (EC) within EBU working as forums to address all matters concerning NEM Related technologies: Video, Audio, Metadata, Networks and infrastructures, Platforms and Services, Broadcast and Broadband, Spectrum and Integrated Production.

The Khronos Group

The Khronos Group is an industry consortium creating open standards for the authoring and acceleration of parallel computing, graphics and dynamic media on a wide variety of platforms and devices. All Khronos members are able to contribute to the development of Khronos API specifications, are empowered to vote at various stages before public deployment, and are able to accelerate the delivery of their cutting-edge 3D platforms and applications through early access to specification drafts and conformance tests. The most worldwidely known standard of this group is OpenGL, OpenGLes and OpenVG specifications for 2D and 3D graphic API.

ANNEX III: New Grand Societal Challenges

The report of the European Research Area Expert Group (EG) on “*The Role of Community Research Policy in the Knowledge-Based Economy*” was prepared for the European Commission (EC) Research DG over the first nine months of 2009. The group was asked to review, assess and interpret the existing evidence on the state of the knowledge-based economy in Europe as well as on the effectiveness, in terms of roles, objectives and rationales, of the main existing research policy instruments and to come up with recommendations on how to frame and articulate the Community research policy in the post-2010 period. The Terms of Reference (ToR) of the EG explicitly referred to the need for an economic assessment that would bring forth new ideas, analyses and so-called “evidence-based recommendations for actions”, hence, the dominance in this EG of experts from the academic, business and policy making community with a strong economic background; The EG started its reflective work with an internal discussion brainstorming on the major challenges the European Union would be likely to face over the next ten to fifteen years. These major challenges, grouped under the notion of “drivers” were pulled together under five headings which formed the main sections of the EG report and led, in a final section, to a number of conclusions and policy recommendations

The **first driver** the EG believed had affected European research over the last decade, and was likely to affect it even more over the next ten years, is the trend towards globalization and concentration of research in Europe and the rest of the world.

The **second driver** the EG considered in more detail was the notion of **Societal Challenges** (often referred to as “Grand” Challenges). The notion of **Societal Challenges**, which the EG preferred to use, applies to major social problems that cannot be solved in a reasonable time and/or with acceptable social conditions, without a strong and, in the European case, coordinated input requiring both technological and non-technological innovation, and at times, though not necessarily always, advances in scientific understanding.

A Societal Challenge dimension would, in other words add a new objective to public policy, whereby research and innovation are seen not as ends in themselves, but as a means to a wider goal, defined as a societal benefit. The aim is to foster those activities that have greatest impact on achieving the societal challenge, and not necessarily to increase research and improve innovation across the board. The relevant actors include of course private companies in various sectors, but also institutions involved in innovation in the public sector as well as public services, and in setting demand side and regulatory and market frameworks that support innovation.

The second set of recommendations of the EG deals therefore with the question on how to achieve compatibility between such “grand” societal top-down initiatives and a more market-driven resource allocation logic that would allow for “multiple decentralized experiments”. In practice the EG follows the line here as set out in the Lund declaration. Meeting the Societal Challenges will require amongst others: strengthening *frontier* research initiated by the research community itself and taking a lead in the development of enabling technologies in particular along the lines of the so-called *lead-market initiative* such as in the case of “green technologies”. Attention should be given here to measures that can enhance the effectiveness of both public and private research and development investment in the wide and diverse array of “green” technologies facilitating knowledge sharing, adaptation and diffusion of innovations.

The **third driver** considered by the EG, is the need for Community research policies more based on so-called *merit-based competition* than collaboration across the EU.

A series of recommendations are also made with respect to the trend towards open innovation, considered by the EG as a **fourth key driver**.

The final **fifth driver** considered by the EG is the one of regional specialisation and cohesion policies.

Grand societal challenges definition

Today, the ERA EG has not provided the identification of the Grand Societal Challenges, we can we can make a short definition of the ones identified in the Lund Declaration :

Global warming : due to air pollution (industry, cars, home heating, ...) CO² is beating the earth protection layer against sun. This implies an increase of the overall temperature which will have big impact in our future life (storms, under sea area extension, dry area extension, ...) which have

Tightening supplies of energy : Fossil energy will be less and less available, there is a need to find some new resources but also a need to save energy.

Water and food : due to the enlargement of the world population, it is and it will be more and more difficult to have sufficient food and water for everybody.

Ageing societies : due to medical advances, people are living older and older and there will be need to help people to stay at home.

Public health, Pandemics : It is in our basic instinct to live longer and longer, medicine is making great progress but there are always new virus arising, that need great effort in research but also in public infrastructure which cost more an more expensive and difficult to fund.

Security : Due to unemployment, burglars and bad boys are getting more numerous which imply crime development.

From these Grand Challenges the Information Society & media clusters have identified 5 main areas where ICT could contribute :

Smart energy grid : Energy grids will increasingly face risks of congestion and blackout. Internet connectivity, computing power, digital sensors and remote control of the transmission and distribution system will help to make grids smarter, greener and more efficient,

Smart environmental information system : the use of sensor networks for collecting real or near real time environmental data is a growing field of application. It requires Internet connectivity for data management, dissemination and integration in complex information systems

Smart systems for transport and mobility : Putting ‘intelligence’ into the roads and cars with Intelligent Transport Systems (ITS)– with e.g. sensor networks, radio frequency tags, and positioning systems offer a promising alternative. The internet provides a solution to interconnect these diverse technologies and bring more efficiency to mobility through real time management of public and private transport resources, traveller information and decision-making tools, way beyond the capability of current solutions

Smart healthcare systems : Current research experiments aim to develop technologies for ‘ambient’ environments capable of assisting patients and satisfying their information and communication needs. These technologies combine devices (sensors, actuators, special hardware and equipment), networks and service platforms to harness information about medical conditions, patient records, allergies and illnesses

Smart culture and knowledge : European culture is very rich and European people are so creative that we will be soon overflowed by information and archives. Even search engines become more and more powerfull, there will be a need to help people into content management including helping people to "clean" their information wherever they are stored