# Coordination of the European Future Internet Forum of Member States


## D4.5 – Thematic Workshop 2: ETP

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| **Document Number** | D4.5 |
| **Document Title** | Thematic Workshop 2: ETP |
| **Version** | 1.0 |
| **Status** | Final |
| **Work Package** | WP4 |
| **Deliverable Type** | Report |
| **Responsible Partner** | WIT |
| **Dissemination level** | PU |

# Change History

| Version | Date | Status | Author (Unit) | Description |
|---|---|---|---|---|
| 0.1 | 31/DEC/2010 | Working | Kieran Sullivan, Brian Foley (WIT) | Create draft document based on workshop minutes |
| 0.2 | 31/JAN/2011 | Working | Willie Donnelly, Brian Foley, Kieran Sullivan | Revision of workshop report following feedback from ETPs and ceFIMS partners |
| 1.0 | 4/FEB/2011 | Final | Willie Donnelly, Brian Foley, Kieran Sullivan | Finalisation of workshop report |
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# 1. Introduction

The ceFIMS Coordination Action began its work in September, 2010. It will provide functional ongoing support to the European Member State Future Internet Forum (FIF). ceFIMS will facilitate FIF activity by providing a Secretariat and support structure and by establishing the ceFIMS Future Internet web-portal. ceFIMS will help foster and support knowledge sharing via the FIF to maximise synergies between EU and Member State investments in Future Internet research.

To open a communication channel between the FIF and the European Technology Platforms (ETPs) related to the Future Internet, ceFIMS held a joint workshop with a number of ETPs on December 16th, 2010. The agenda and attendee list for this event are contained in Appendices A and B, respectively, of this report.

The workshop sought to address several topics, including: how each ETP makes a contribution to EU policy objectives for smart, sustainable and inclusive growth in Europe by 2020; what research and funding instruments are required for working towards 'Europe2020: The Digital Agenda for Europe' and the implementation of the Innovation Union; opportunities for synergies between ETP and Member State initiatives; and, how to develop strategic ETP – MS relationships.

A summary of the workshop proceedings was presented by the ceFIMS coordinator to the FIF meeting in Ghent on 17th December, 2010.

# 2. Presentation of ETPs

This section contains information on each of the Future Internet ETPs which were represented at the workshop. Information is presented under three headings: Introduction to each ETP, R&D Capabilities & Priorities of the Sector, and Recommendations for future funding instruments and maximising synergies with Member State and regional initiatives. The overall objective of this exercise was to identify what opportunities each ETP foresees for making a contribution to the EU policy objectives for smart, sustainable and inclusive growth in Europe by 2020.

Appendix C contains links to more information on each ETP.

## 2.1. Photonics21

**About Us**

Photonics21 covers a number of different photonics application areas, including Information & Communication, Industrial Manufacturing & Quality, Life Science & Health, and Lighting & Displays. 90% of its 1,600 members are located in the EU-27. Its membership comprises a balance between science and industry, with Small & Medium Enterprises (SMEs) representing the majority of industrial members. The

global photonics market grew from €226 billion in 2005 to €270 billion in 2008 (c.6% growth); European production volume grew from €43.6 billion to €55 billion during the same period, with 40,000 additional jobs created (total of 290,000 employed in European photonics industry in 2008).[1]

**R&D Capabilities & Priorities of Sector**

Photonics21's understanding of sustainability involves three pillars to create wealth: ecology, economy, and society. Within the remit of sustainable ICT networks and components, the field of photonics can contribute to achieving more scalable networks (glass fibre carries more than 1,000 copper cables), and offers huge energy-saving potential via new optical network architectures, footprint reduction (integration of photonics and electronics), and un-cooled optical components.

Photonics21 has identified four trends to transform optical networks:

1. Make it faster (cope with traffic growth, driven by video traffic)
2. Make it more dynamic (to better cope with fast network changes)
3. Make it more transparent (keep information optical for as long as possible)
4. Make it greener (to better comply with sustainable development)

…while driving down the cost-per-managed-bit.

**Recommendations**

Photonics21 states that the main aim for future funding instruments should be to close the gap in the European innovation chain, from photonics research to manufacturing, product commercialisation and market entry. A number of initiatives should be considered:

- Joint approach by industry and public authorities;
- Instruments such as Public Private Partnerships;
- Establish large ICT demonstration projects:
  - Drive demand and quality of experience;
  - Large companies: show case technologies and standardisation;
  - SME: prove products and solutions in best of breed environment;
- Create adequate instruments for public and sustainable procurement;
- Foster entrepreneurship and new application ecosystems:

[1] Source: Optech Consulting

- Funding and focus on innovation;
- Public, academia and private partnership;
- Promote SME creation: a new venture capitalism approach from concept to full products.

Photonics21 also proposes a 'Digital Village' concept which would involve creating 5-7 interconnected, regional trials of ultra-high speed broadband networks. This would facilitate the specific targeting of Future Internet services; it would allow Europe to set the standard for QoE and QoS; it would provide a testbed for new products/services and interoperability standards; and, the infrastructure would allow SMEs to deliver services to the trial participants.

## 2.2. ISI

**About Us**

The Integral Satcom Initiative (ISI) is an industry-led action forum that addresses broadcasting, broadband, and mobile satellite communications, as well as their convergence, in integration within the global telecommunication network infrastructure. ISI comprises 194 member organisations and represents all European Satellite Communication (SatCom) industry stakeholders. These include manufacturing industry, network operations & service provision, SMEs, research centres & academia, and European & national institutions. The SatCom industry is involved in two-thirds of the European satellite industry's turnover, with 30,000 people employed in the field. The global market for network hardware was worth €120 billion in 2010, of which €10 billion went on optical hardware[2]. European network hardware companies accounted for 30% of the market.

**R&D Capabilities & Priorities of Sector**

SatCom can add value to a number of European policies, including:

- Digital Agenda: overcome digital/speed divide when targeting ubiquitous broadband coverage objectives; via powerful multi-beam satellite networks for cost-optimised broadband in areas of low population density.
- More sustainable & efficient economy: cost-effective space/time service availability for smart infrastructure; via advance interactive broadcast, mobile satellite systems, and hybrid systems.

[2] Source: Infonetics

— Security & Defence policy: improve Europe's capacity to prevent and respond to crisis/disaster situations; via flexible satellite networks for global, secured and resilient communications (c.f. ISICOM initiative[3]).

SatCom is involved in several Future Internet-enabled smart infrastructures. These include: content and broadband access systems (social inclusion), health-care systems (public health), systems for transport and mobility (sustainable transport), and, energy grids and environmental information systems (climate change and clean energy).

**Recommendations**

ISI suggests increasing financial support to SatCom-related projects from the FP7 ICT Work Programme, in order to sustain the industry's competitiveness. In general, ISI recommends that funding instruments should support applied R&D, standardisation, regulatory framework harmonisation, demonstration & trials, role model definition, and educational & training activities up to large scale experimentations. For Integrated Projects, Specific Targeted Research Projects and Coordination-Support Actions, ISI suggests a number of issues to consider:

— EC financial support:

- Simplify procedures for administrative evidence (for example, wider use of average cost rate for personnel)
- Combine very small targeted projects on specific research items and large scale initiatives

— Industry co-financing:

- Public financing rate to be increased for projects, targeting European institutional missions or enabling European technology independence

— IPR: The rights of the inventor should be better protected.

ISI identified several topics to address regarding synergies with Member State and regional initiatives, including: SatCom Framework Programmes (e.g. ISICOM initiative); demand aggregation and a harmonised regulatory framework to foster cost-effective deployment of SatCom solutions; and, opening the CIP to the demonstration of services based on SatCom. These could be implemented at European level (EC: DG INFOSOC, DG ENTR, and European Space Agency), Member State level (ISI mirror group and national space agencies), and regional level (NEREUS: Network of European Regions Using Space Technologies).

[3] See http://www.isi-initiative.org/isicom-tf/isicom-tf

## 2.3. NESSI

**About Us**

The Networked European Software & Services Initiative (NESSI) mainly concentrates on services, and in particular, transforming the European Union's economy through Service Oriented business models. NESSI comprises 25 partners and 430 members, from academia (49%), SMEs (25%), large industrial corporations (22%) and users (4%). NESSI is involved in 18 research projects, which brings them into contact with 136 different organisations. NESSI is also collaborating with a number of Member States' national initiatives including those in Bulgaria, Hungary, The Netherlands, Norway, Poland, Slovenia and Spain.

**R&D Capabilities & Priorities of Sector**

NESSI's vision involves transforming the Internet to service the life of users. That is, ensuring that services are provided to citizens and businesses alike, in a safe, secure, reliable, extensible, scalable environment. NESSI has the following priorities:

- Research: coherence of research directions, coherence of research results, sustainable path and uptake
- People: community animation & support, cross collaboration between industry &academia
- Uptake: application domains

**Recommendations**

Within a policy context NESSI recommends the following for consideration:

- Uptake: prioritise areas, public procurement
- Future Internet: application areas, major contributions, funded research support
- Digital Agenda: key areas, security & privacy, education & uptake, outreach, key actions-based structure, coherence role.

The Digital Agenda, in particular, creates a collaboration opportunity for ETPs. NESSI believes that ETPs have a community role (individually, together, underlying technologies continued) and a convergence role (coherence across research projects, sustainability for research results, networking scientific & industrial communities).

## 2.4. Net!Works

*To reflect the convergence of fixed and mobile systems, as well as to distinguish its area from 'electro-mobility', the eMobility ETP has changed its name to Net!Works.*

**About Us**

The Net!Works Platform brings together European organisations to address, as a community, the challenges of future networks, building on Europe's success in mobile communications. Net!Works comprises 725 members. Membership is categorised into 'research domain' (269), 'industry' (136), 'SMEs' (274) and 'cooperation members' (46). Net!Works has identified a number of 'Grand Societal Challenges', including: "The Environment & Energy Efficiency Challenge, "The Health & Demographic Change Challenge", and "The Transport Challenge". In 2007, across Europe, the ICT sector represented ~5% of GDP (€540 billion), 3% of total employment (6.1 million employees), and accounted for 25% of overall business spending in R&D (employing 32% of all business sector researchers)[4].

**R&D Capabilities & Priorities of Sector**

Net!Works believes that research on new networks and services must start now in order to be ready to support the mass-market use of new applications in 2020; in particular, to support solutions for the 'Grand Societal Challenges' identified by Net!Works. With respect to these 'Challenges', there are a number of research priorities in different areas:

- Applications (health, transport, environment, Future Internet as key enablers)
- Context provisioning, user-profiling for user-centric services (management, security, trust, privacy)
- Roadmaps on standardisation, regulation and technology
- Trust, security, dependability and privacy
- Mobile and wireless communication (complexity, connectivity, user devices, network management, roaming and routing, self-organising networks)
- Machine-to-machine communications – Internet-of-Things (autonomous operation, ubiquitous connectivity, interoperability, context awareness)
- Cognitive radio systems (cognitive networking, cognitive radio platforms)
- Broadband mobile systems (evolution of cellular mobile, new networking)
- Optical fibre technologies and radio over fibre (optical network switching, RoF subsystems and components, optical-wireless component integration)
- Future Internet (key enabler for Grand Societal Challenges)
- Green wireless communications (terminals, infrastructure, networking, deployment, operation)

[4] Source: European Commission (2010 Report on R&D in ICT in the EU)

**Recommendations**

Cooperation is required between stakeholders across the European Union, in order to develop new systems, to create consensus, and to prepare future Standards. The current FP7 collaboration programme offers research funding instruments with single source of funding (e.g. Integrated Projects, Strategic Targeted Research Projects), which are well-complimented by EUREKA and national R&D programmes. FP7 supports collaborative research and this should be maintained in FP8 with sufficient budget allocation.

## 2.5. NEM

**About Us**

The Networked and Electronic Media (NEM) Initiative focuses on various media forms, and their seamless delivery over technologically transparent networks. NEM represents the convergence of existing and new technologies, including broadband, mobile and new media across all ICT sectors. NEM is industry-led, but seeks to bring similar people together from various sectors through new services/usages/businesses. There are a number of regional NEM initiatives also, including ones in Romania, Spain, Lithuania, France and Belgium.

**R&D Capabilities & Priorities of Sector**

NEM states that networks without users will be nothing; that is, content, usage, and users themselves must be addressed. For NEM, this entails more video content initially, but it also applies to other sectors since content matters to everyone. NEM's priorities centre on their 'Clusters':

- Next Multimedia Content Distribution (NMCD)
- NEM Security Cluster (NEM SEC)
- Community Based Services Cluster (CBS)
- Multimedia Content Search (MCS)

NEM is also trying to identify opportunities for collaborative research with experts around the world, stimulating the cooperation EU-Regions on specific technology themes (GlobalNEM); it is pursuing participation between itself and regulatory bodies, by ensuring the availability of NEM representatives at European regulatory bodies; and, it is trying to bring together individuals and organisations from across the content industry to discuss common problems, and to identify technological barriers to advancing content production in Europe.

**Recommendations**

The level of research funding available through national and regional initiatives has increased over the last few years, and such new instruments have succeeded in attracting the interest of industry stakeholders – support for these instruments should continue.

New funding instruments should not be overly burdened with front-loaded governance. There has been a tendency to put complicated governance in place before new projects get off the ground. However, initiatives such as the Public-Private Partnerships (PPP) have previously been used as instruments/drivers and these worked successfully when governance was later added; i.e. a permanent governance was not in place before any work began.

# 3. Outputs from Workshop

The following text categorises and presents the round table discussions from the workshop.

## 3.1. User Engagement

- Users tend to be involved more in regional activities, despite the fact that all initiatives—EU, Member State and regional—strive to involve end-users.
- A large part of the Digital Agenda involves engaging users. This engagement may benefit if high-level research is transferred more quickly into regional and implementation environments. Such faster transfer may be achieved through innovation partnerships, pre-commercial public procurement, etc., for example.
- ETPs could benefit from connecting with the different panels or clusters of users which exist around Europe. This would facilitate more diverse testing of the ETPs' technologies. (NEM currently invite users to contribute to position papers).

## 3.2. National Technology Platforms

- ETPs engage organically with their national equivalents, whenever such "mirror" groups exist in the different Member States. This means that ETPs are already influencing national programmes. Some ETPs also engage directly with national governments, but in such cases, the Member States have more control over the synergies. Not all Member States have their own national Technology Platform and this may be related to the size of the country or to the critical mass of researchers in the area. Smaller countries and countries will small groups of researchers in particular FI fields experience less divergence of key national people and may manage/advance without a formal Platform structure in place.
- National forums which bring together representatives from research and industry are useful, in that they allow stakeholders to meet and discuss EU initiatives. Feedback from such forums can be diverse, but it will at least be submitted to the EU in a coherent fashion.
- Visibility of national frameworks outside the Member State needs to be raised.

## 3.3. Combining Funding Instruments

- While ETPs attempt to interact with EU, national and regional initiatives, these entities (and their funding instruments) do not often interact with each other. Each has their own priorities and these can sometimes be divergent. Structural funds, for example, concentrate on deployment - often with "old" technologies. These could perhaps examine more research-related, emerging technologies. There is no connection between the efforts of ETPs and their priorities with respect to the processes of approval of Regional Structural Funds plans.
- Combine EU funds with regional funds – this may encourage researchers to adopt a bottom-up approach, where they do not engage with larger Calls for funding – rather they concentrate on smaller, more specific Calls.
- Bilateral discussions between funding agencies is beneficial. Multilateral discussions may be even more useful, but these are difficult to establish on a pan-European basis.
- As well as identifying the various funding agencies at EU, national and regional level, it is important to determine groups and bodies who influence these agencies.

## 3.4. Competence Map & Engagement Framework

- A map of Europe which displays the competencies of different regions and Member States would enable national initiatives to identify which competencies they could build on; it would also allow national initiatives to identify which regions and/or Member States have competencies that compliment their own. Regional initiatives would also benefit from seeing ETPs' state-of-the-art technologies.
- A framework which allows all interested stakeholders to review what may be suitable for them or how they might best engage with the process would be useful.

## 3.5. Opening a Dialogue on the Way Forward

- The workshop raised awareness among the FI ETPs, of the ceFIMS project and its role as a communication channel for Member States—through the Future Internet Forum—to put forward their priorities to the ETPs. Conversely as a result of the workshop, there is an increased awareness of the priorities, capabilities and recommendations of the ETPs. ceFIMS will channel this input to its project activities (in particular its stocktaking and roadmapping actions)
- Follow-up actions are now being identified to build on and develop the dialogue that was started at this workshop. Contact between ceFIMS and the ETPs will continue to identify these actions in the coming months.

# Appendix A. Agenda

Thursday 16 December 2010, 14.30 – 17.00

Venue: FIA Ghent (ICC: International Convention Centre)

**(1) Welcome by ceFIMS Coordinator** *(14.30 – 14.45)*

(Incl. overview of ceFIMS)

**(2) Presentation from each ETP** *(14.45 -15.45)*

(10 mins each)

What opportunities each ETP foresees for making a meaningful contribution to the EU policy objectives for smart, sustainable and inclusive growth in Europe by 2020?

- Photonics21
- ISI
- NESSI
- Net!Works
- NEM

**(3) Round Table Discussion** *(15.45 – 16.45)*

Chair: Willie Donnelly, WIT (ceFIMS Coordinator)

- What research and funding instruments are required for working towards Europe2020, the Digital Agenda for Europe[5] and the implementation of the Innovation Union
- Opportunities for synergies between ETP and Member State initiatives
- Opportunities for cooperation between MS and ETPs
- Developing strategic ETP – MS relationships

**(4) Conclusions and Next Steps** *(16.45 – 17.00)*

[5] http://ec.europa.eu/information_society/digital-agenda/index_en.htm

# Appendix B. Attendance

List of participants at ceFIMS/ETPs workshop, 16th December, 2010

| Name | Organisation |
|---|---|
| Aviv-Zeeri Bulasian | ISERD |
| Petronela Burceag | European Commission |
| Nicolas Chuberre | Thales Alenia Space (ISI ETP) |
| Willie Donnelly | Waterford Institute of Technology |
| Katharina Flaig | Photonics21 |
| Brian Foley | Waterford Institute of Technology |
| Sven Hermann | DMDF |
| Fabian Kohler | DLR |
| Latif Ladid | University of Luxembourg |
| Pauli Kuosmanan | TIVIT |
| Luis Magalhaes | UMIC – Knowledge Society Agency |
| Jacques Magen | InterInnov |
| Sjoerd Meihuizen | NWO |
| Jean-Dominique Meunier | NEM |
| Werner Mohr | Nokia Siemens Networks |
| Edina Nemeth | NKTH |
| Vilmos Nemeth | NKTH |
| David Pap | NKTH |
| Veronique Pevtschin | Engineering Ingeneria Informatica |
| Ana Ponte | UMIC – Knowledge Society Agency |
| Julian Sesena | AETIC |
| Piergiorgio Sessarego | Photonics21 |
| Kieran Sullivan | Waterford Institute of Technology |
| Fiona Williams | Ericsson |
| Klaus Wuenstel | Alcatel Lucent Bell Labs |
| Jean Dominique Meunier | NEM |

# Appendix C. Links to ETPs' website

Links to ETPs' websites:

| ETP | Website |
|---|---|
| Photonics21 | www.photonics21.org |
| ISI | www.isi-initiative.eu.org |
| NESSI | www.nessi-europe.com |
| Net!Works | http://www.networks-etp.eu |
| NEM | www.nem-initiative.org |
| EPoSS | http://www.smart-systems-integration.org/public/about/ |

# Appendix D. Photographs


Photograph 1: Selection of Workshop Audience


Photograph 2: Selection of Workshop Audience