COUNCIL OF THE EUROPEAN UNION

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From :	General Secretariat of the Council
To :	Delegations
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Subject :	Future of ICT research, innovation and infrastructures - Council conclusions

Delegations will find attached the Council conclusions on the Future of ICT research, innovation and infrastructures, as adopted by the Competitiveness Council at its meeting on 3 December 2009.

ANNEX

COUNCIL CONCLUSIONS ON THE FUTURE OF ICT RESEARCH, INNOVATION AND INFRASTRUCTURES

THE COUNCIL OF THE EUROPEAN UNION

RECALLING:

- its conclusions of 23 November 2007 on scientific information in the digital age: access, preservation and dissemination[1], recognising that access and dissemination of scientific information is crucial for the development of the European Research Area (ERA) and can help accelerate innovation;

- its conclusions of 30 May 2008 on the launch of the Ljubljana Process - Towards full realisation of the (ERA)[2] aiming to establish an enhanced governance for the ERA based on a long-term vision on ERA developed in partnership with Member States and the Commission, with broad support from stakeholders and citizens;

- its conclusions of 2 December 2008 on the definition of a 2020 vision for the European Research Area[3] which is part of the first phase of the Ljubljana Process and serves as the basis for the development of future ERA governance;

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1 Doc. 15362/07.
2 Doc. 10231/08.
3 Doc. 16767/08.

– the conclusions of the European Council of 11 and 12 December 2008[4] which agreed on the European Economic Recovery Plan and called for the launch of a European plan for innovation, combined with the development of the European Research Area (ERA) and reflections on the future of the Lisbon Strategy beyond 2010 (including post i-2010 Strategy for promotion of information society), encompassing all the conditions for sustainable development and the main technologies, including information technology;

– its conclusions of 29 May 2009[5] on Research Infrastructures and the regional dimension of the ERA which called on the Commission to pursue sustainability, global connectivity, interoperability and unimpeded use of pan-European e-Infrastructures, and on the Member States to consider the role of e-Infrastructures in their national roadmaps and/or programmes for research infrastructures;

EMPHASISING, in this context, the importance of ICT research, innovation and infrastructures:

1. WELCOMES the Commission's communications entitled "A Strategy for ICT R&D and Innovation in Europe: Raising the Game"[6], "ICT Infrastructures for e-Science"[7] and "Moving the ICT frontiers – a strategy for research on future and emerging technologies in Europe"[8];

2. HIGHLIGHTS that ICT is one of the main drivers of economic growth and social change and, as such, plays a vital role in the economic recovery, enabling Europe to emerge from the current crisis faster and stronger than before;

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4 Doc. 17271/1/08 REV1.
5 Doc. 10612/09.
6 Doc. 7883/09.
7 Doc. 7432/09.
8 Doc. 9077/09.

3. EMPHASISES that ICT underpins innovation and productivity gains across the economy, offers unique responses to societal challenges, such as transition to an eco-efficient economy, and is necessary to progress in all major science and technology fields; NOTES, however, that the ICT impact on productivity growth is lower in the EU than in major trading partners;

4. STRESSES that the digital revolution is still in its early stages and that a research and innovation capacity is essential to be able to shape, master and assimilate technologies and exploit them to economic, societal and cultural advantage; UNDERLINES, in this regard, the necessity to ensure the availability, appropriate treatment and conservation of an unprecedented amount of data;

5. NOTES that Europe has strong industrial and technology assets in ICT notably in telecommunication equipment and services, embedded ICT and business software and can build on its underpinning strengths including its scientific excellence, the exceptional standard of education of its graduates, world class high-quality infrastructures such as GEANT and e-Science, and the world's largest ICT market;

6. RECOGNISES, however, that fragmented European markets, a fragmented ICT research and innovation landscape, lack of human resources and under-investment in ICT research and innovation are major obstacles preventing Europe from taking full advantage of current and future ICT;

7. STRESSES the importance of ICT in the context of implementing the free movement of knowledge (the fifth freedom, as initiated by the European Council at its meeting of 13 and 14 March 2008), innovation and technology, and NOTES the importance of increasing European capacity and competitiveness in ICT;

UNDERLINING the overall objective to establish Europe's leadership in ICT research, innovation and infrastructures:

8. STRESSES that Europe must identify and remove the barriers that hinder the emergence and growth of new business and markets for innovative ICT applications, must seek leadership in key ICT markets, technologies and sciences, and must improve the attractiveness of Europe to ICT investments and talents, while ensuring critical mass of human capital to build a digital Europe;

9. RECOGNISES the need for better integrated policies and actions bridging ICT innovation, skills development and research (knowledge triangle) – from frontier to application oriented research;

10. STRESSES that better integration requires closer articulation between European, national and regional actions and implementation in variable configurations at different levels;

11. AGREES that a range of new opportunities exist for European leadership in ICT, that are driven by new scientific findings, by new technology development and by the innovative use of technology to lay the basis for modern science and to address emerging challenges in areas such as the transition to an eco-efficient economy or sustainable health care for an ageing population;

12. SUPPORTS the important contributions of ICT to the public-private partnerships in the European Economic Recovery Plan on Green Cars, Factories of the Future and Energy Efficient Buildings;

13. In order to reinforce future and emerging technologies (FET) in ICT, RECOGNISES the strategic importance of high-risk, multidisciplinary research on new foundations for future ICT, to seed novel technologies and to open new research avenues that are essential for ensuring innovation and sustainable competitiveness of European enterprises;

14. RECOGNISES the critical role of e-Infrastructures in achieving scientific excellence, their potential for improving accessibility and their transformative impact on the way research is performed, mainly e-Science, as well as their role as innovation platforms and precursor markets for novel ICT, notably in computing; WELCOMES the work of the e-IRG[9] to address policy related barriers for the shared use of e-Infrastructures;

CONSIDERING that a number of priority actions should be taken:

15. INVITES the Member States to:

- amplify their support to ICT research and innovation at both national and EU level, including through an extended use of public procurement of ICT research and innovations and a wider use of cohesion policy funds;

- intensify their efforts in building research and innovation clusters in ICT through more coordinated investments in research infrastructures in critical areas such as Future Internet, high performance computing, Green ICT cognitive systems, nano-electronics, photonics and embedded systems;

- foster trans-national co-ordination of e-Infrastructures in order to optimize resources and ensure seamless and safe access of end-users.

[9] e-Infrastructures Reflection Group (www.e-irg.eu);

16. INVITES the Commission to:

- examine areas where public-private partnerships can accelerate innovation, create critical mass, and attract additional private and public investments, notably in the field of Future Internet and Green ICT, as well as to optimise the mechanisms to this effect;

- propose Europe-wide flagship initiatives in FET to tackle specific science and technology challenges at the crossover between ICT and other scientific disciplines;

- based on a strategy, stimulate and support international research collaboration in FET, as it addresses global ICT challenges;

- prepare initiatives to empower research intensive SMEs and talented young researchers to step-up and take earlier leadership in FET;

- propose initiatives for actions to attract young people to the ICT research and innovation area and encourage them to pursue a career within this field;

- propose financial incentive schemes for jointly developing and sharing research infrastructures between the Member States in ICT, in areas such as exa-scale computing;

- propose demand- and user-driven European-scale projects cutting across research, innovation and deployment to deliver ICT-based service infrastructures in response to cultural and societal challenges, including pan-European electronic identity management whilst ensuring appropriate data protection; and services in healthcare, energy efficiency, safe and clean transport;

17. INVITES the Member States and the Commission to:

– explore how to extend the benefits of e-Infrastructures to industrial research and innovation, to public services and to SMEs;

– explore governance models for e-Infrastructures that enable the provision of efficient, seamless and technologically leading public services for research Europe-wide, in consultation with the e-IRG, where appropriate;

– examine the need and the means to provide incentives for the wider use of pre-commercial procurement at local, regional national and European level to provide innovative solutions to the public sector, including for the deployment of e-Infrastructures and for the support to SMEs;

– better coordinate their efforts and develop and share strategies in ICT fields that are essential for Europe, such as research and innovation in broadband communications, building on the experience in the ICT Joint Technology Initiatives, the Ambient Assisted Living coordinated programme and the GEANT high speed network; these strategies shall seek to avoid fragmentation of the efforts;

– pool their investments in high performance computing under PRACE[10], in order to strengthen the position of European industry and academia in the use, development and manufacturing of advanced computing products, services and technologies;

– ensure that research infrastructure of major importance in Europe enjoy e-Infrastructure support both in terms of access to state of the art computing and data resources and in order to extend the benefits of their operation across Europe;

[10] PRACE (Partnership for Advanced Computing in Europe) is an ESFRI project creating a persistent pan-European Research Infrastructure for High Performance Computing. Currently 16 Member States and 4 associated countries to FP have signed the PRACE MoU; other Member States are welcome.

– continue to lift the specific obstacles that hinder the development of innovation-friendly markets;

– continue their efforts in order to make widely available and broaden access to scientific data and open information repositories and ensure a coherent approach to scientific data access and curation;

– further promote the security of networks and ICT products, including through facilitating better interaction between research stakeholders;

– regularly consult standardisation and research stakeholders, in particular European Technology Platforms, to ensure that relevant European ICT R&D initiatives contribute most effectively to ICT standardisation activities, as well as encourage standardisation bodies to adapt their procedures, where necessary, in order to facilitate the timely production of ICT standards; coordinate their efforts toward a better synchronisation and coordination of national and European standardisation policies related to establishing and dissemination of European technology standards, which will contribute to strengthening European competitiveness;

– seek further incentives for the more rapid emergence of innovation-friendly markets**,** notably through a stronger demand- and user-drive for innovation, including an extended use of public procurement of innovation, support to pilot projects, and involvement of users at all stages of the innovation cycle;

– promote and facilitate the creation of synergies between policies and instruments at different levels and closer cross-portfolio interaction between users, suppliers and investors, for instance through 'innovation platforms' for public service innovation, support to experience sharing between public procurers, networking of investors and SMEs;

– encourage business, academia and public authorities at all levels to help implement ICT projects across the innovation cycle, notably in response to societal goals**;**

– undertake initiatives, through the European partnership for researchers established on 26 September 2008[11], to overcome the shortage of skilled researchers and to attract the world's best researchers to participate in ICT research, in particular FET, including through collaboration with global research leaders;

– pay particular attention to the role of ICT in enabling and strengthening S&T cooperation policy with countries outside Europe.

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[11] Council conclusions on better careers and more mobility: a European partnership for researchers, doc. 13671/08.