COUNCIL OF THE EUROPEAN UNION

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NOTE

From:	The Presidency
To:	Delegations
No. Cion Prop.:	6596/12 RECH 56 COMPET 96 IND 31 TELECOM 32
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Subject:	Draft Council Conclusions on 'High Performance Computing: Europe's place in a Global Race'

Delegations will find attached draft Council Conclusions on 'High Performance Computing: Europe's place in a Global Race' with a view to the discussion by the Research Working Party on 17 May 2013.

The changes to the previous document are indicated in ~~strikethrough~~ and **bold underlined**.

ANNEX

Draft Council Conclusions on

'High Performance Computing: Europe's place in a Global Race'

THE COUNCIL OF THE EUROPEAN UNION

RECALLING

- the conclusions of the European Council of 11 and 12 December 2008[1], which called for the launching of a European plan for innovation, combined with the development of the ERA and with reflection on the future of the Lisbon Strategy beyond 2010;
- its conclusions of 29 May 2009[2] 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;
- its conclusions of 3 December 2009[3] on the Future of ICT research, innovation and infrastructures which invited the Member States to have more coordinated investments in High Performance Computing (HPC) and the Commission to propose financial incentives for jointly developing and sharing research infrastructures in exascale computing, and on Member States and the Commission to pool their investments in HPC under PRACE[4] and to strengthen the position of European industry and academia in the use, development and manufacturing of advanced computing products, services and technologies;
- its conclusions of 17 May 2010[5] on various issues related to the development of the ERA, urging the need for further development of computing infrastructures, such as PRACE ;

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1 Doc. 17271/1/08
2 Doc. 10612/09.
3 Doc. 17190/09.
4 PRACE (Partnership for Advanced Computing in Europe) is an ESFRI project creating a persistent pan-European Research Infrastructure for High Performance Computing: www.prace-ri.eu
5 Doc. 9451/10.

1. ~~WELCOMES~~ **TAKES NOTE OF** the great emphasis placed by the Commission on the strategic nature of HPC for the EU in its communication entitled "'High Performance Computing: Europe's place in a Global Race"[6], advocating ~~for~~ a renewed European strategy in HPC and proposing an action plan to position the EU as a centre of innovation, a hub of scientific excellence and a global partner;

2. HIGHLIGHTS that HPC is an important asset for the EU's innovation capacity and STRESSES its strategic importance to the EU's industrial and scientific capabilities as well as its citizens, by supporting the development of innovative industrial products and services, increasing competitiveness, and addressing societal and scientific grand challenges more effectively; NOTES that other world nations have declared HPC an area of high importance and massively increased their efforts in this area;

3. EMPHASISES the importance of deploying and maintaining a world-class and sustainable European HPC infrastructure, and RECOGNISES the achievements of PRACE[7] in pooling leadership-class computing systems and making them available to all researchers in the **EU and associated countries** ~~European Countries~~, on the basis of, and in order to enhance**,** scientific excellence and innovation and the need to maintain this approach;

4. EMPHASIZES the strength of the EU in applications, low-power computing and integration and HIGHLIGTHS that Europe has the technology, knowledge and human skills to develop capabilities covering the whole technological spectrum of the next generation of HPC systems including software, services and applications (exascale computing);AGREES that maintaining and extending European strengths in HPC state-of-the-art technologies, systems, software, services and applications would support growth, sustainability (green ICT) and competitiveness in science, the ICT industry and the economy in general.

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6 **Doc. 6596/12** ~~[COM(2012) 45 final]~~

7 Partnership for Advanced Computing in Europe (PRACE) http://www.prace-ri.eu/

5. ACKNOWLEDGES the efforts of HPC stakeholders to support the implementation of an EU-level HPC strategy, in particular PRACE - as an independent actor on the scientific side - and the industry-led European Technology Platform for HPC (ETP4HPC);

6. STRESSES the importance of supporting and strengthening the dual role of European industry in HPC, both as supplier of state-of-the-art technologies and systems, and as user of HPC to innovate in products, processes and services;

~~6a~~ **7**. STRESSES the importance of supporting and strengthening the role of academic HPC users.

UNDERLINING the overall objective to achieve European leadership in the development and use of HPC systems, software, applications and services by 2020:

~~7.~~ **8.** RECOGNISES the need for an EU-level policy in HPC addressing the entire HPC ecosystem: world-class and sustainable HPC infrastructure; HPC use by Science and by industry, including SMEs; HPC industrial supply for development of exascale computing; excellence in HPC software, methodology and applications; and achieving a level-playing field for EU companies;

~~8.~~ **9. RECOGNISES the need for all relevant actors, public and private, to work in partnership;** INVITES Member States, the Commission, and industry to ensure appropriate investments in HPC (noting the importance of investment in software development, HPC methodologies, education and training, in addition to hardware) and to optimise European investment while taking into account past efforts of Member States for investments in world-class HPC infrastructure; INVITES Member States and the Commission to exchange and to share priorities and plans for HPC development in the context of the appropriate fora, in association with PRACE and the European Technology Platform on HPC;

10. ~~HIGHLIGHTS the importance of PRACE for pooling and sharing a range of computing resources, as well as leadership and expertise, to provide a world-class European HPC infrastructure, and for stimulating innovation, science and industry;~~ ASKS the Commission to explore all EU funding possibilities ~~(including through the ICT programme of Horizon 2020)~~ and instruments to support the development of leadership-class HPC capabilities in Europe as well as the acquisition of world-class HPC systems on the global market ~~in global~~ **on the basis of open** competition to address the needs of various HPC user communities;

11. **Stressing the importance of developing advanced HPC technologies, software, applications and services in Europe, INVITES the Commission to explore all possible support for academic and industrial research and innovation activities under Horizon 2020 – covering, inter alia, design of hardware, components and software as well as HPC services and applications – and to present plans through the appropriate governance channel in due course.**

12. NOTES the importance of Centres of Excellence and networks in HPC applications addressing key societal, scientific and industrial challenges in areas that are strategic for Europe; in this context underlines the role of training for users;

13. INVITES Member States and the Commission to step up the efforts to substantially increase the supply of scientists and engineers with HPC skills, through adequate training and educational programmes addressed to industry and academia;

14. INVITES Member States to consider setting up HPC Competence Centres to facilitate the development of required competences in HPC, to facilitate access to HPC capabilities and services to science and to support the transfer of relevant expertise from supercomputing centres to industry – including to SMEs.

15. INVITES the Commission to continue its efforts to reduce inequalities in the access of EU manufacturers to foreign HPC markets with the relevant countries, in order to promote fair access by European companies and a level playing field, which also includes fair access for HPC-purchasers to non-European HPC-systems;

16. ~~RECOGNISES the need for all relevant actors, public and private, to work in partnership; in this context~~ INVITES the Commission to review and elaborate its plans for HPC, **to present a proposal before the end of 2013,** especially regarding the **development** ~~funding~~ of ~~both~~ European HPC infrastructure and the ~~development~~ **funding** of a well-balanced European R&D programme on advanced HPC technologies, software, services and applications, and to report to the Council on progress made before **the** end **of** 2015.