



**COUNCIL OF
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From: The Presidency
To: Delegations

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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 at its meeting on 29 April 2013.

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

**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 2008¹, 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 2009² 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 2009³ on the Future of ICT research, innovation and infrastructures which ~~called on~~ **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 PRACE⁴ 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 2010⁵ on various issues related to the development of the ERA, urging the need for further development of computing infrastructures, such as PRACE ;

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 the Commission's 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 a crucial **an important** asset for the EU's innovation capacity and STRESSES its strategic importance to benefit the EU's industrial 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 strategic priority and massively increased their efforts in this area;**
3. EMPHASISES the importance to **of deploying** and **maintaining** a **world-class and sustainable** European HPC infrastructure, and RECOGNISES the achievements of PRACE⁷ to **in pooling** leadership-class computing systems and **making** them available to all researchers in the EU **to enhance scientific excellence, and the need to maintain this approach;** ~~NOTES that other world nations have declared HPC an area of strategic priority and massively increased their efforts in this area;~~
4. AGREES that ~~gaining independent access to~~ **achieving leadership in** HPC state-of-the-art technologies, systems, **software,** and services **and applications** in the EU would support growth and competitiveness in the ICT industry and the economy in general, and HIGHLIGHTS that Europe has all the technical capabilities and human skills to develop ~~native~~ capabilities covering the whole technological spectrum of the next generation of HPC systems (exascale computing);
5. ACKNOWLEDGES the efforts of HPC stakeholders to support the implementation of **an** EU-level HPC strategy, in particular PRACE and the industry-led European Technology Platform for HPC (ETP4HPC);

⁶ [COM(2012) 45 final]

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

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

UNDERLINING the overall objective to ~~ensure~~ **achieve** European leadership in the supply and use of HPC systems and services by 2020:

7. RECOGNISES the need for an EU-level policy in HPC ~~to optimise national and European investments~~, addressing the entire HPC ecosystem: **world-class and sustainable HPC infrastructure**; HPC use by Science and by industry, especially SMEs; HPC industrial supply for independent development of exascale computing; excellence in HPC applications; EU-level governance; and achieving a level-playing field for EU companies;
8. INVITES Member States, the Commission, and industry to increase their investments in HPC (noting the importance of investment in software development, HPC methodologies, training and education, in addition to hardware) **and to optimise national and European investment** in order to match similar efforts in other world regions. **To enable such optimisation of investments, INVITES Member States and the Commission to share priorities and plans for HPC development in the context of the appropriate policy fora, such as ERAC and expert groups**;
9. STRESSES the importance ~~to~~ **of linking** the acquisition of HPC systems with the development of advanced European HPC technology through the use of innovation instruments such as Pre-Commercial Procurement and Public Procurement of Innovative solutions, **as well as alternative methods for development of HPC technologies**. HIGHLIGHTS the importance of PRACE for pooling and sharing national and EU resources, including leadership and expertise, to provide a world-class European HPC infrastructure, and for stimulating innovation ~~through joint public procurement, pre-commercial procurement and other innovation instruments~~ to support the development of leadership-class HPC capabilities in Europe;

10. STRESSES **NOTES** the importance of supporting Centres of Excellence **and networks** in HPC applications addressing key societal, scientific and industrial challenges in areas that are strategic for Europe;
11. 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;
12. INVITES Member States to set up HPC Competence Centres to facilitate **the development of required competences in HPC, to facilitate** access to HPC capabilities and services and to support the transfer of industry relevant expertise from national and regional supercomputing centres to industry – especially **including** to SMEs. NOTES the importance of supporting the provision of platform-based technology and HPC methodologies, in addition to HPC hardware, to address real-life industry requirements ;
13. INVITES the Commission to ~~raise~~ **pursue the elimination of** inequalities in the access of EU manufacturers to foreign HPC markets with the relevant countries, in order to ~~ensure~~ **promote** fair access by European companies and a level playing field;
14. INVITES ~~all the HPC stakeholders to consider the possibility of a public-private partnership to implement in synergy all the elements of the European HPC strategy.~~ NOTES the challenges inherent in such a partnership, and invites discourse to address technical, financial and regulatory barriers. **RECOGNISES the need for all relevant actors, public and private, to work in partnership; in this context INVITES the Commission to further elaborate its action plan for HPC and to report to the Council on progress made before end 2015.**