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From: General Secretariat of the Council
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Subject: The transition towards an Open Science system
- Council conclusions (adopted on 27/05/2016)

Delegations will find in the annex the Council conclusions on the transition towards an Open Science system, adopted by the Council at its 3470th meeting held on 27 May 2016.

**COUNCIL CONCLUSIONS ON THE TRANSITION TOWARDS AN OPEN SCIENCE
SYSTEM**

THE COUNCIL OF THE EUROPEAN UNION

RECALLING

- the Commission Recommendation of 17 July 2012 on "Access to and preservation of scientific information"¹ and the Communication of 17 July 2012 on "Towards better access to scientific information: boosting the benefits of public investments in research"²;
- the general principles under Horizon 2020³, through which open access to scientific publications is ensured and open access to research data is promoted in publicly funded research at EU level;
- the Commission's Report of February 2015 on " Validation of the results of the public consultation on Science 2.0: Science in Transition"⁴;
- the Commission Communication of 6 May 2015 on "A Digital Single Market Strategy for Europe"⁵, which acknowledges the importance of science and research to boost innovation, notably by its goal to improve the framework conditions for data-driven science;

¹ Doc. 12846/12.

² Doc. 12847/12.

³ Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020).

⁴ Report available at: http://ec.europa.eu/research/consultations/science-2.0/science_2_0_final_report.pdf#view=fit&pagemode=none

⁵ Doc. 8672/15.

- its Conclusions of 29 May 2015 on a “European Research Area Roadmap 2015-2020”⁶, adopting the ERA Roadmap and stressing the importance to start the implementation of the top action priorities identified in the Roadmap by mid-2016, including for priority 5 “Optimal circulation of knowledge”;
- its Conclusions of 29 May 2015 on "Open, data-intensive and networked research as a driver for faster and wider innovation"⁷, which express political support for setting the right framework conditions for research and innovation focused on big data and for strengthening the whole data value chain in Europe.

Open science

1. RECOGNISES that the exponential growth of data, the availability of increasingly powerful digital technologies, the globalisation of the scientific community, as well as the increasing demand from society to address the societal challenges of our times, are the bases of an on-going transformation and opening up of science and research, referred to as ”open science” affecting the modus operandi of doing research and organising science.
2. ACKNOWLEDGES that open science has the potential to increase the quality, impact and benefits of science and to accelerate advancement of knowledge by making it more reliable, more efficient and accurate, better understandable by society and responsive to societal challenges, and has the potential to enable growth and innovation through reuse of scientific results by all stakeholders at all levels of society, and ultimately contribute to growth and competitiveness of Europe.

⁶ Doc. 8975/15.

⁷ Doc. 9360/15.

3. STRESSES that open science entails amongst others open access to scientific publications and optimal reuse of research data, citizens science, and research integrity; TAKES NOTE that open access to scientific publications and optimal reuse of research data are of utmost importance for the development of open science; TAKES NOTE of the ERAC Opinion on "Open Research Data"⁸, and of the Amsterdam Call for Action that was issued at the occasion of the Netherlands' Presidency Conference on Open Science⁹ and various initiatives pursued by Member States, the Commission and stakeholders¹⁰; INVITES the ERAC Standing Working Group on Open Science and Innovation to assess the proposed actions on the Amsterdam Call for Action on feasibility, effectiveness and prioritisation, and to report on this; STRESSES the need for concerted action by all partners involved: the Commission, the Member States, civil society and the stakeholders¹¹.

Open Science Policy Platform and European Open Science Agenda

4. NOTES the establishment of the Open Science Policy Platform¹² by the Commission, which aims at supporting the further development of the European Open Science policy and promoting the uptake by stakeholders of best practices, including issues such as adapting reward and evaluation systems, alternative models for open access publishing and management of research data (including archiving), altmetrics, guiding principles for optimal reuse of research data, development and use of standards, and other aspects of open science such as fostering research integrity and developing citizen science; CALLS on the Commission to inform the Member States and stakeholders on a regular basis on the ongoing developments and outputs of the Open Science Policy Platform at least twice a year.

⁸ Doc. ERAC 1202/16.

⁹ The Netherlands' Presidency Conference on Open Science – From Vision to Action, Amsterdam, 4-5 April 2016.

¹⁰ E.g. the development of open science agendas and policies at national level.

¹¹ Stakeholders include researchers (universities, research and technology organisations, enterprises), funding organisations, publishers and service organisations.

¹² <http://ec.europa.eu/research/openscience/index.cfm?pg=open-science-policy-platform>

5. CALLS on the Commission, in cooperation with the Open Science Policy Platform and in close cooperation with the Member States and stakeholders, and taking into account existing initiatives to further develop the European Open Science Agenda, in order to further increase the impact of science to society at large, to stimulate an effective mobilization of all the potential knowledge from open science actions, and to address the requirements for training of ICT and data skills, in particular professional data management skills, which help to contribute to the access of citizens to the results of research.

Removing barriers and fostering incentives

6. AGREES that the results of publicly funded research should be made available in an as open as possible manner and ACKNOWLEDGES that unnecessary legal, organisational and financial barriers to access results of publicly funded research should be removed as much as possible and appropriate in order to attain optimal knowledge sharing, taking into account when necessary the need for exploitation of results; ENCOURAGES the Commission and Member States to further engage with third countries in order to accelerate the transition process to open science and to ensure mutual benefits regarding open access to scientific publications and optimal reuse of research data in a global context.

7. CONSIDERS that assessing scientific quality should be based on the work itself and be broadened to include an assessment of the impact of science on society at large, while the current focus is on indicators based on impact of journals and publication citation counts. ENCOURAGES the Commission, Member States and the stakeholders to further develop and implement, in a coordinated way, initiatives for better quality assurance in their review and evaluation systems. STRESSES that incentive mechanisms need to be put in place to reward researchers (and research stakeholders) for sharing the results of their research for reuse; CALLS on the Commission, the Open Science Policy Platform, the Member States and the stakeholders to explore possible mechanisms, including training activities and awareness-raising, to change the ways of doing science. ENCOURAGES the Commission, through the Open Science Policy Platform, to collaborate in particular on incentives for an internationally accepted system for data citation, making use of initiatives and expertise that already exist.
8. WELCOMES the Commission Communication of 9 December 2015 on "Towards a modern, more European copyright framework"¹³ and LOOKS FORWARD to the legislative proposals from the Commission announced therein; STRESSES the importance to enhance the EU's competitiveness, and technological and scientific leadership, which could include allowing public interest research organisations to carry out text and data mining of content, to which they already have lawful access, for scientific research purposes; STRESSES the need to continue the support by the Commission and Member States to allow all bodies and organisations, including citizens, scientists and businesses and SMEs, to mine results of publicly funded research they already have legal access to.
9. BELIEVES that optimal access and reuse of the results of scientific work can be enhanced if researchers or their employers retain the copyright on their scientific works; INVITES the Commission and the Member States to explore legal possibilities for measures in this respect and promote the use of licensing models, such as Creative Commons, for scientific publications and research data sets.

¹³ Doc. 15264/15.

Open access to scientific publications

10. WELCOMES open access to scientific publications¹⁴ as the option by default for publishing the results of publicly funded research; RECOGNISES that the full scale transition towards open access should be based on common principles such as transparency, research integrity, sustainability, fair pricing and economic viability; and CALLS on Member States, the Commission and stakeholders to remove financial and legal barriers, and to take the necessary steps for successful implementation in all scientific domains, including specific measures for disciplines where obstacles hinder its progress.
11. INVITES the Commission to develop and encourage measures for optimal compliance with the provisions for open access to scientific publications under Horizon 2020, together with the stakeholders and the Member States; ENCOURAGES Member States to work with stakeholders to do the same at the national level on publicly funded research.

¹⁴ For the purposes of these Conclusions, ‘open access to scientific publications’ is understood as having its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited (main source: Budapest Open Access Initiative, 2002, available at: <http://www.budapestopenaccessinitiative.org/read>).

12. AGREES to further promote the mainstreaming of open access to scientific publications by continuing to support a transition to immediate open access as the default by 2020, using the various models possible and in a cost-effective way, without embargoes or with as short as possible embargoes, and without financial and legal barriers, taking into account the diversity in research systems and disciplines, and that open access to scientific publications should be achieved in full observance of the principle that no researcher should be prevented from publishing; INVITES the Commission, Member States and relevant stakeholders, including research funding organisations, to catalyse this transition; and STRESSES the importance of clarity in scientific publishing agreements.
13. CALLS on all partners to engage in synchronized efforts to reach this goal – with intermediate milestones¹⁵ for 2018; CALLS on the Commission and the Member States for close monitoring on a regular basis during this period through the National Points of Reference¹⁶, and to align it as much as possible with the monitoring of the ERA progress; ASKS the Commission to assist Member States and stakeholders to build up expertise and to facilitate information sharing, e.g. through EU funded projects to that effect.

Optimal reuse of research data

14. UNDERLINES that research data originating from publicly funded research projects could be considered as a public good, and ENCOURAGES the Member States, the Commission and stakeholders to set optimal reuse of research data as the point of departure, whilst recognising the needs for different access regimes because of Intellectual Property Rights, personal data protection and confidentiality, security concerns, as well as global economic competitiveness and other legitimate interests. Therefore, the underlying principle for the optimal reuse of research data should be: “as open as possible, as closed as necessary”.

¹⁵ The milestone covers Gold, Hybrid and Green Open Access.

¹⁶ As foreseen by the Commission Recommendation of 17 July 2012 on "Access to and preservation of scientific information" (doc. 12846/12).

15. WELCOMES the intention of the Commission to make research data produced by the Horizon 2020 programme open by default¹⁷, whilst recognising the right of opting out on grounds based on Intellectual Property Rights, personal data protection and confidentiality, security concerns, and other legitimate interests; CALLS on the Commission to promote data stewardship – including training activities and awareness-raising – and to implement Data Management Plans as an integral part of the research process and to continue to make the costs incurred for both data management and preparation of research data eligible for funding in Horizon 2020; ENCOURAGES Member States and stakeholders to set up strategies accordingly and to implement the use of Data Management Plans as a standard scientific practice in their national research programmes.
16. EMPHASISES that the opportunities for the optimal reuse of research data can only be realised if data are consistent with the FAIR principles (findable, accessible, interoperable and re-usable) within a secure and trustworthy environment; RECALLS the importance of storage, long term preservation and curation of research data, taking into consideration the capacity of the research group or organisation, as well as ensuring the existence of metadata based on international standards; ENCOURAGES Member States, the Commission and stakeholders to follow the FAIR principles in research programmes and funding mechanisms.

¹⁷ Commission Communication of 19 April 2016 on a "European Cloud Initiative - Building a competitive data and knowledge economy in Europe".

17. TAKES NOTE OF the Commission Communication of 19 April 2016 on a "European Cloud Initiative - Building a competitive data and knowledge economy in Europe"¹⁸ and ACKNOWLEDGES that Europe may benefit from a European Open Science Cloud¹⁹ that enables, amongst others, safe and long-term storage, efficient analysis, and user-friendly (re)use of research data across borders and disciplines; CALLS on the Commission, in cooperation with Member States and stakeholders, to explore appropriate governance and funding frameworks, taking sufficient consideration of existing initiatives and their sustainability and of a European-wide level playing field.

Follow-up

18. CALLS on the Commission, the Member States and the stakeholders to take the necessary actions needed for making open science a reality and to advocate the need for concerted actions in relevant national, EU, multilateral and international fora; CALLS on the Commission to keep the Member States informed of and involved in the work of the Open Science Policy Platform and to coordinate its activities with the Member States, and AGREES to take stock on the progress together with the Commission and the Platform on a regular basis, starting no later than one year from now.

¹⁸ Doc. 8099/16.

¹⁹ The European Open Science Cloud will federate existing scientific data infrastructures, today scattered across disciplines and Member States