

Report of the ERAC Task Force on Open Access to research data

Preface

In February 2014 the first steps were taken in fulfilling the wish from ERAC to establish an informal group working on Open Access to data. A Task Force has been set up with a total of 12 Member States actively participating¹. In June and October of this year, meetings of the Task Force were held in Brussels. Those meetings formed the base of this report².

The report will go into the current state of play of the activities in the field of Open Access. Next to this, some preliminary findings will be presented. Also the report will explain the ambition of the Task Force to continue with its work after 2014 and the subjects it wants to take up in the (near) future.

This report will be presented and open for discussion at the ERAC meeting of the 3rd of December 2014.

Interim report

This report has been drafted as a working document. It can be regarded as an interim report reflecting the work the Task Force has done the last half year, including preliminary findings that are just that: preliminary. The overview of the activities taking place around the subject of Open Access can be considered as a "living document". Also the list with subjects identified by the Task Force to take up is not limitative with the possibility to take up new subjects. To give you some insight in these subjects, some of them have been worked out in more detail, to serve as a useful example of what ERAC can expect in a final report.

The Task Force wants to continue its work beyond 2014 especially on the subjects mentioned above, with a final report planned in 2015.

Questions for the ERAC

When reading this report, the Task Force would like to ask ERAC to reflect on the following questions:

- Does ERAC agree to the scope and the selection of subjects the Task Force wants to take up?
- Has ERAC identified additional subjects to be taken up by the Task Force?
- Has ERAC additional activities to be taken up in the list of current activities in the field of Open Access?
- Does ERAC support the wish of the Task Force to continue its work on these subjects beyond 2014?

Scope

In the first meeting of the Task Force, the members discussed what should be the primary focus of the Task Force. This included a discussion on which definitions and terminology we should work with and a first overview of the fields of interest for the Task Force. It was commonly agreed upon that when talking about data in the Task Force, these are data which are produced in the prospect of scientific research in the broadest sense of the word. This means not only taking on underlying data for publications, but also data stemming from research that has not landed in a publication (yet). Our ambition is to be connected to what is happening in the field as much as possible.

Open methods are not addressed separately in this context, but are also one of the elements to be considered in this scope. Although it was discussed, no definite decision has been made yet on how to deal with fields closely connected to our definition of data, such as big data and open science.

¹ Austria, Belgium, Croatia, Denmark, Finland, France, Germany, Netherlands, Portugal, Spain, Sweden, United Kingdom

² The report presents the preliminary state of the discussions and work of the ERAC Task Force and does not reflect official positions of participating Member States on the issues involved.

Overview of current activities

A buzzing concept such as Open Access, is bound to be discussed in many contexts, fora and organisations. The Task Force decided it useful to make an overview of all current these activities and initiatives in the field of Open Access (see Annex 2). This list is most likely not complete and as stated before, it should be considered as a living document. Nevertheless, it is a useful overview of the many initiatives in the field of Open Access. Striking is how many activities are actually employed and on how many different levels these initiatives take place. Our ambition is to find synergy in these initiatives. Members of the Task Force are also actively involved in other initiatives, on national or European levels or through an umbrella organisation. This may help to prevent duplication of activities as much as possible and at the same time facilitate the exchange needed to identify gaps and synergies³.

Our original intention was to also present an overview of the current state of play on Open Access in the different member states. However, the European Commission has already taken first steps in creating this overview. On this subject the Commission and Task Force are in contact to avoid duplication, minimise the need for questionnaires and make the most of the available information for both parties.

Open Access to Publications versus Data

The development of Open Access to scientific publications progresses faster than Open Access to the underlying research data. We see this reflected at the policy level, where more and more member states have defined a policy on Open Access to publications, but only a few on Open Access to research data. Inevitably, the further development of Open Access to publications will entail developments in the field of research data. In the present era of digitalisation we may expect the frontier between digital publications and digital access to data to become less explicit and more easily transgressable. Publications and research data are closely interlinked and will become so more and more.

Nevertheless, it is important to realize that there are also clear distinctions between publications and data, which ask for a different approach, both on the policy level and the more operational level. On a preliminary basis, the Task Force has identified some of these differences, which should be kept in mind while developing policies on Open Access to research data. In the table below, these differences are explained in a somewhat simplified way.

	<i>Publications</i>	<i>Research data</i>
Type of proces	Transition from an old to a new system	Construction of a totally new system
Challenge during the process	Passing through transition phase with different models at the same time	Urgent need for policy convergence and operational standardization in order to avoid fragmentation
Degree of choice	Mostly either 100% open or not open, but some "in between" options (relating to copyrights and re-using)	Many intermediary options for access to only part of the data
Number of models	Limited (Green or Gold and (less preferably) several hybrid models)	Many options; no 'one size fits all'
Costs	Budgetary neutral (apart from possible transition costs)	Building up of new infrastructure leads to additional costs. This is even more so because of the different sorts of data depending on the discipline
Costs for the user	Open Access = free of charge to the end-user	Who will pay the additional costs? Is it feasible to introduce a user fee or is it preferable to offer really Open Access (= free of charge to the end-user)?

³ As an example: for the ERA-roadmaps, the Netherlands is also in the lead for bringing priority 5 (Knowledge Transfer and Open Access) further.

Subject to be taken on by the Task Force

The Task Force will primarily focus on the following subjects:

1. Academic behaviour and the need to develop Open Data related skills and know-how transfer
2. Quality aspects
3. Metadata and standards (including infrastructure)
4. Data Management Plan (DMP)
5. IPR-issues
6. Public Private Partnerships
7. Mutual benefits
8. Costs

Subjects 1 – 4 have been worked out further in preliminary findings.

Subject 1: Academic behaviour and the need to develop Open Data related skills and know-how transfer

Making research data (more) open requires important behavioural changes on the part of researchers. It relates indeed to some of their core professional habits and directly or indirectly concerns the way research is produced, assessed, disseminated and curated. On the one hand, internal quality assessment as well as research assessment procedures currently depend to a large extent on the number of articles published in international top journals, and on the number of citations to those papers. There is thus no strong career incentive to disseminate and to share data, datasets not being generally considered as truly assessable research outputs. On the other hand, citation to data is currently not a common practice, which leads to a certain lack of visibility and recognition for the authors of data publications. Therefore there is a risk that the open sharing of data would be perceived by the researchers as going against some of their career basic interests.

Hence too, in the competitive “publish or perish” context in which most current academic research is produced and assessed, researchers tend to be rather “possessive” of the research data they collect. They generally aim at capitalising on “their” datasets and try to publish (or co-publish) as many papers as possible on the basis of the collected data, gaining a maximal visibility for these papers, as indicated by the number of citations. More generally speaking, even some Open Access proponents (e.g. Harnad 2012) quite convincingly argue that researchers cannot be expected (and a fortiori mandated) to make their data immediately Open Access in the same way as it happens with publications. They should rather be given sufficient time to analyse “their” data, having invested consequent effort into collecting or generating them. In other words, periods of “fair embargo” could be considered.

Besides, there are issues with regard to the correct management of privacy (mainly in the biomedical and social sciences) or security issues, and the lack of standardisation in the presentation of the data (particularly in the social sciences and the humanities) and meta-data. It is not yet an habit either to broadly re-use data produced by others, outside of the laboratory or the research consortium. Finally, some researchers are reluctant to disseminate data because of the time the deposition process takes.

To address those issues, it is much needed to adopt a holistic approach which focuses on the training of both early stage and experienced researchers, while allowing further consideration for a better valorisation of the dissemination of qualitative data in the assessment of research. It is only through awareness raising and dedicated training in data sharing and stewardship that the open dissemination of research data will become a valuable and sustainable routine, rather than be perceived as burdensome and counterproductive.

More specifically, transfer of Open Data related skills and know-how may be efficiently integrated into optional training packages for PhD candidates, together with other practices (such as: inclusion of data-officers in scientific research project teams) relating to the so-called "Open Science", including Open Access to publications and public communication of science.

Open Data training could also be advantageously given to all kinds of stakeholders through e-learning modules. The current FP7 funded FOSTER project (Facilitate Open Science Training for European Research) constitutes a good practice here, which brings together training resources for those who need to know more about Open Science, or who need to develop strategies and know-how for implementing Open Science practices in their daily workflows.

Also consideration will need to be given to the role of incentives and careers with regard to embedding open data in academic culture (with properly defined roles and responsibilities), for example, through awarding proper credit and citation to data producers and curators.

Subject 2: Quality aspects

The issue of quality in relation to Open Access to research data is closely interlinked with the notion of sustainable stewardship. Open research data needs to be professionally produced, assessed, preserved, curated, presented and continuously validated in order to be properly used and reused in other research and innovation projects. A range of challenges can be foreseen related to this. Below some of these are mentioned:

- *Robust data and research ethics.* The issue of robustness and ethics is three-fold: It concerns 1) quality-insurance and trustworthy validation mechanisms for open scientific data, 2) protection of sensitive data (e.g. with reference to national security and personal privacy) and 3) the aforementioned (see : Subject 1) lack of recognition and career incentives relating to the dissemination and sharing of datasets (citations to data are not into account at the same level than citation to articles etc.).
- *Peer reviewing.* For a long time assessment of the quality of research papers has been fully integrated into the work routine of researchers through the process of peer reviewing. There is no such reviewing procedure with regard to the data. Hence it is important to make the inventory of existing quality assessment and reviewing practices of research data, and to capitalize on them. Those practices include but are not limited to: peer reviewing of data in so-called data journals, peer reviewing of the soundness of the data collection through traditional peer reviewing of articles (the editor allowing access for the peer reviewers to the full data sets on which the article is built), extension of the innovative open peer reviewing practices (which are currently developed by some innovative publishers of Open Access journals) to the assessment of data, crowd sourcing of the assessment of the quality of the data by the fact itself of sharing them (easier detection of possible frauds, etc.)
- *Accountability.* Another question relates to long-term responsibility for open research data. This issue concerns both legal dimensions regarding ownership as well as the practical dimension regarding stewardship of data that might have value long after the completion of the research that generated them e.g. with perspective to avoid unintended misuse of data in the future.
- *Accessibility.* This issue relates to the presentation and user-oriented aspect of open research data. In order to promote the uptake of data reuse among scientist but also outside of Academia, the open research data should not only be made easily accessible in compatible standards, but also be presented and delivered in a way that will enable researchers and other possible stakeholders to trust and make use of the data. A key aspect of accessibility will be to ensure that data is discoverable and usable by machines at web scale.
- *Culture and change of habits.* The issue of quality in many ways overlaps with the aforementioned (see : subject 1) question of academic behaviour and skills. The improvement

of the standards of quality in Open Data requires the development of new stewardship-competences and acceptance of cultural changes in the research communities. Not only will it be a challenge to build a trust-based system where all researchers are incented to share data of a high level of quality and feel safe when using other's data, but it will also be an important task to introduce high quality standards in the peer reviewing, the preservation and the delivery of data,

These challenges and questions should be recognized and dealt with in the ongoing political dialogue on Open Access to research data. They may be addressed through public intervention (e.g. in form of training programmes, information activities and / or a large scale data archive institution) and greater consideration to the value of data dissemination in the assessment of research and researchers. However some of these initiatives may prove to be rather expensive. The issue of ensuring high quality in open research data is therefore closely related the issue related to cost and the question of who will pay?

Subject 3: Metadata and standards (related to infrastructure)

Open access to research data should facilitate research validation, verification and re-use, with the help of infrastructure services like storage, usage, distribution, curation and preservation of research data. The current research environment often fails to support the principle of open access to data, and is inadequate in terms of access, interoperability, harmonization and data preservation.

To build a framework that allows interoperability and integration of these tasks (and underlying services), the following steps should be taken into consideration:

Common metadata models	Common metadata models, that facilitate interoperability. A possible candidate on European level is EuroCRIS CERIF ⁴ .
Linkages from data to publications and methods	Metadata models could incorporate necessary links from data to publications and methods, making it easy to replicate the research results. This includes the complex of legal rights issues, as open datasets should always carry with them the information of re-use rights.
Standardization	Standardization concerning data. Most of all on scientific communities and disciplines should be active in establishing community standards, best practices and guidelines for data formats and other related standards. Libraries and archives should be involved in the discussions, as the expertise for organizing and standardizing information resides often in these organizations.
Open interfaces	Adopting open standards for interfacing services and infrastructures.
Layer of interoperability	Examining and defining the need for European (and international) level infrastructure functionalities. This should concentrate on the interoperability layer. These services should provide top-level channels for sharing research data, and should include: <ul style="list-style-type: none"> ○ Ontology and semantic services ○ Collective catalog services for data and publications (publishing, sharing, harvesting metadata about data) ○ Interfacing services ○ Authentication and authorization service (trust federations)

⁴ <http://www.eurocris.org/Index.php?page=CERIFreleases&t=1>

The Task Force wishes to have a more in-depth discussion on the complex task of defining the characteristics for the needed infrastructure and will come back on this in its final report.

It should be kept in mind that what is already happening elsewhere in this field should not be reinvented, but taken up in this context as well. The most successful standards are those that are used - so user and institutional involvement is key to successful adoption.

Subject 4: Data Management Plan (DMP)

A Data Management Plan (DMP) is a document which outlines how you will handle your data both during your research and after the project is completed.

The goal of the DMP is to document all, or an adequate number of aspects of the management and the preservation of the research data covering its whole life cycle. Namely, a DMP could include information regarding:

- What data is expected to be produced
- Data formats
- Data identifier (digital object identifier)
- Standards (methods, processes, etc)
 - Information if the data require special software, hardware or any specific technique or tool to be “read” or interpreted outside of the context where it has been collected/produced - In this case, whenever possible, tools and all information on their correct use should also be provided.
- Metadata
- Methodology/Open methods and accessibility to the details of how the data was produced.
 - Key element to peer review, reproducibility and protection against fraud
- What part of the research data can be expected to be made openly available
- Timeframe to make data available (within 6 months? 12 months?)
- If there is any type of data produced by the research that will be excluded from open availability and why?
 - Security issues, privacy issues, ethical issues, legitimate commercial interests of research project partners and patent protection, other potential conflicts of interest
- Legal issues
 - Different legal frameworks between researchers/partners from different countries
- Policies for access, sharing, re-use
- Backup
- Choice of whether to preserve data or not and guidance for researchers in this
 - Data that is easy/cheap to replicate may be exempted from preservation
 - What data to retain? How to go about datasets with errors?
- Long term preservation
 - Minimum timeframe to preserve the research data
- Budget allocations related to data management
- Mandated repository

Not sharing your data also requires a policy with reference to why the data cannot be made available. It is important to be aware of legal, ethical, or commercial constraints on release of research data and to clearly state this in the DMP.

The use of digital object identifier (DOI) will make the data more usable as citation of the data is made possible. Data citation refers to the practice of providing a reference to the research data in the same way that researchers provide bibliographic reference to published research results. One important aspect of data citing is the recognition of data as a primary research output. Data citation through DOIs means the data can be verified and attribute to the researcher.

The DMP should be a living document, becoming more detailed and accurate during the projects lifespan. It is equally important that the DMP is provided early on in the research process, it should be developed alongside the research project as an early deliverable.

In several EU member states a DMP is mandatory when applying for research funding depending on the research funding organisation. Many research funding organisations today have data policies which specify the research data management practices expected by grant holders and for many a DMP is a requirement. A DMP could be conditioned in the application process by the research funding organisation.

The DMP constraint for research funding is however in most cases only applied on an organisational level, not on a national level. The concept of the DMP also varies a great deal depending on the funding organisation and the research domain. In humanities and social sciences the concept of the DMP is far less known than in medicine or the natural sciences.

In Horizon 2020 a limited pilot has started on Open Access to research data. Participating projects will be required to develop a DMP in which they will specify what data will be open (Guidelines on data management in Horizon 2020). The Horizon 2020 areas participating in the pilot correspond to 20 % of the overall Horizon 2020 budget in the period 2014-2015, with the possibility for applicants to opt-in or opt-out.

There are several aspects of the DMP process which will need further scrutiny in order to provide answers to questions and challenges such as:

- The use, definition and demand of DMP varies greatly between EU member states and research disciplines.
- A DMP principle is (should be) only one small part in the overall data policy of the institution.
- How do we agree on common principles for data policies (which include DMP principles), which should be easily applicable on national level?
- How do you monitor the continued use of the DMP after the research project is completed?
- How do you provide help desk and human resources for helping scientists develop their DMP, at the research funding organisations demanding the DMP or at the organisation to which the scientist belong.
- Access to a technical and legal knowledge base when developing your DMP is vital, how should this be provided?
- Access to adequate infrastructure for the management of your data through its life cycle is vital - from human resources to proper software, to hardware and data repositories and archives - how will this be provided?

There is a need to develop best practices when it comes to DMP use on different levels: The individual researchers, the research project/consortium, the research funding organisations, the research performing organisations, (EU) umbrella organisations and on national level and EU level.

Short view on subject 5-8

Subject 5: IPR-issues

IPR and the relation between Open Access and commercialisation can lead to tension. What data, at what time, with or without an embargo period, with or without applying for patents (IPR), these kind of questions are raised. The Task Force sees the Data Management Plan as a tool in handling these difficulties.

Subject 6: Public Private Partnerships

When research is (partly) publicly funded, within public private partnerships, Open Access to research data leads to legitimate concerns for private partners on their competitiveness and corporate interests. How to address these concerns is one of the challenges within this issue

Subject 7: Mutual benefits

How to maximise mutual benefits when working within a system that aims for optimal knowledge circulations? And how to deal with the possibility of 'free riders': countries, organisations or companies who do not want to work in Open Access, but do profit from others who do? These questions go partly beyond the borders of the EU.

Subject 8: Costs

Finances are needed for building an infrastructure for Open Access to data en for establishing and maintaining repositories, as well as some form of peer review. How to go about this – divert money from the project or make extra money available? Work with a handling fee?

As part of the thinking on costs, we will have to consider how institutions will provide open data facilities – will they seek to own/build their own infrastructure or will it be a service that is provided by companies or other organisations and is bought by universities?

Continuation

The members of the Task Force have expressed the strong ambition to continue with the work of the Task Force. The most important reason is that by having established the context (such as an overview of current initiatives) and conditions (such as an overview of shared terminology) we work in, we have set a good environment to take further steps forward. Other arguments include the perfect timing in relation to recommendations in this field by projects conducted in the 7th Framework Programme (e.g. RECODE and PASTEUR4OA – see annex 2), of which results should be delivered in the first half of 2015.

We would like to take steps forward in the field of the subjects described above and take into account the expected results from the different projects under the 7th Framework Programme.

We would also like see how we can involve stakeholders – that approach us regularly – and how to work on fields that are closely connected to the field of Open Access to research data.

ANNEXES

Annex I: references

Annex II: overview current initiatives

ANNEX I - References

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- Openaire, Promoting Open Access on European level: <https://www.openaire.eu/>
- The Research Data Alliance - <https://www.rd-alliance.org/>
Including working group on meta data <https://www.rd-alliance.org/groups/metadata-standards-directory-working-group.html>

ANNEX II: Open Research Data (ORD) – Facts sheet

Global perspective

There are several international organizations who deal with ORD, primarily through non-binding policy guidelines, statements of intent and multilateral declarations. The majority of these are a result of a general Open Access policy that has gradually evolved since the beginning of the millennium. There has only been initiated few broader and more substantial specific worldwide ORD initiatives and none of these are politically anchored in an international organization.

Chosen international initiatives and policies concerning ORD:

- **Budapest Open Access Initiative (BOAI) – Berlin Declaration (BD)**
BOAI is an international initiative that was launched in 2002 by the private organization Open Society Institute (OSI)⁵. The purpose of this initiative was to bring the international research community together around a common definition and a common statement of intent vis-à-vis OA in order to secure its expansion and implementation. Today, BOAI is considered by many sources as the precursor for the current more widely accepted understanding of Open Access⁶. In 2003 BD was launched by the Max Planck Society together with “*The European Cultural Heritage Online Project*”. BD is based on BOAI’s understanding and implementation of OA but it has a deeper interpretation of OA, as it includes ORD as an independent element in its definition of Open Access. BD has since then been signed by more than 475 organizations⁷.
Links:
[BOAI – Official homepage](#)
[Berlin Declaration 2003](#)
- **G8**
The Science Ministers from the G8 member states and the EU Commissioner for Research met during the G8 conference in June 2013 to discuss science policy including OA and ORD⁸. The discussions were followed by a written Policy Statement which was signed by all the participants. In the Policy Statement it is acknowledged that it is important to ensure, that the results of scientific research are as widely available as practical. The document is not binding for its signatories, but it should be seen as a statement of intent and as an encouragement for further international cooperation and coordination.
Links:
[G8 Policy Statement](#)
- **OECD**
In 2007, the OECD published a report on principles and recommendations for expanding ORD. The report has been prepared on the basis of the member states’ declaration vis-à-vis “Access to Research data from Public Funding” from 2004 which was signed by all the member states at that time as well as China, Israel, Russia and South Africa. Neither the declaration nor the report contains politically binding agreements but the report is

⁵ OSI is a part of the Open Science Foundation which is owned and lead by George Soros

⁶ See: <http://www.opensocietyfoundations.org/press-releases/scientists-foundations-libraries-universities-and-advocates-unite-and-issue-new>

⁷ <http://openaccess.mpg.de/319790/Signatories>

⁸ The meeting was a first of its kind. A similar group consisting entirely of Science Ministers called “the Carnegie Group” held meetings in the period 2005-10.

still in 2014 used as a political reference document⁹. The OECD also undertakes continual public monitoring of the member states' initiatives.

OECD has recently (10 Oct 2014) published a the final version new report "Making open science a reality", which gives a good overview.

Links:

[Declaration on Access to Research data from Public Funding \(2004\)](#)

[Principles and guidelines for Access to Research Data from Public Funding \(2007\)](#)

[OECD's webpage for monitoring af medlemslandenes politikker](#)

- **UNESCO**

UNESCO has, on the basis of their official OA strategy, prepared a report containing several non-binding policy guidelines about the implementation of OA (including ORD, though to a more limited extent). The report has been prepared by Dr. Alma Swan, a leading expert in the field of OA, in cooperation with WSIS Communities. In addition to its focus on OA in a research perspective, it also includes a more educational perspective.

Links:

[UNESCO's strategy for open access to science \(2013\)](#)

[Policy Guidelines for the development and promotion of Open Access \(2012\)](#)

[WSIS Communities](#)

- **RDA – The Research Data Alliance**

RDA is an independent alliance established with the aim to expand ORD. The alliance was formed in 2012 by an international group consisting of members from private companies, universities and funding agencies from USA, EU and Australia¹⁰. The alliance is an open bottom-up driven organization where all different kind of actors (individuals as well as private companies and universities) is invited to take part in and contribute to the activities of the alliance. The organization itself is still at an early stage but different types of events and symposiums are already being held including two yearly plenary sessions for all the members. The alliance is officially supported by the EU, USA and Australia.

Link:

[Research Data Alliance \(RDA\)](#)

- **Science 2.0**

Science 2.0 is a new approach to general research practice. The approach is based on openness and is driven by new technological opportunities for sharing, especially the internet. In brief, Science 2.0 is best described as an approach where the researchers' work, ideas, data and research results are made available to the public. This makes it possible for fellow researchers to contribute or comment on the work/data. Science 2.0 is in other words an internet-based grass root phenomenon that has gradually grown over the years and thus become the subject of interest from several big research institutions and political organizations. In 2006 the private company ION Publications made a webpage with the same name and purpose as Science 2.0. In extension ION now has the copyright on the name.

A consultation on Science 2.0 was held among stakeholders in Member States from June - Sept 2014.

⁹ See Damvad's report (in English) on [ORD made for the Norwegian Research Council \(2014\)](#)

¹⁰ Including Microsoft, Australian National Data Service and Karlsruhe Institute of Technology

Links:

[About Science 2.0 on Wikipedia](#)

EU

The work with ORD in the EU can be categorized in two categories: 1) ORD in the EU's own programs and 2) EU-coordination of ORD as a practice and concept in the member states.

The EU's most valuable instrument to promote ORD is the Union's framework program for research and innovation (FP). The FP is managed by the European Commission's Directorate General for research (DG Research) with reference to several laws passed by the member states (Competitiveness Council) and the EU Parliament. The most important of these being the Council Decisions establishing the Specific Programme implementing the FP's and the regulation on rules for participation. OA is mentioned for the first time in history in both documents for the current FP (Horizon 2020) as an important area there should or has to be prioritized in the different parts of the program.

- **FP7 / Horizon 2020**

The Commission has worked with OA in the form of pilot projects in two framework programs respectively FP7 and Horizon 2020. In FP7 a pilot project covered seven different sub areas equivalent to 20 % of the entire programme's budget¹¹. As a result of their status as pilot projects the project agreements under these programs required that the participants should archive their articles in a parallel digital archive and do their utmost to ensure public access to their articles within 6-12 months depending on the discipline. The OA activities are carried on in Horizon 2020 where the principle from the pilot project is extended to the entire program. In addition to this, a new similar pilot project is added to Horizon 2020 with a focus on ORD. As for the OA pilot project from FP7 ORD is introduced as an integrated element in the contracts for the projects that are receiving grants in a number of sub programs¹². Researchers who participate in these programs are encouraged to include ORD as a part of their project implementation. However, they are allowed not to include all data if they wish to protect sensitive data. In addition to the pilot projects the EU has given financial support to the projects OpenAIRE and OpenAIRE+ both under FP7 and Horizon 2020. The two projects have been designed to support the expansion of OA and ORD in Europe both through counseling and by working as a knowledge bank and OA web-portal.

Links:

[FP7 OA Pilot](#)

[Horizon 2020 OA-ORD-pilot guidelines](#)

[Openaire/openaire+](#)

- **Coordinated OA activities**

The EU does not have a mandate to impose the member states specific regulations regarding OA or ORD in national research policies. However, since the establishment of the European Research Area (ERA) in 2007 both the Commission and the Council have issued notices and recommendations on the subject. The latest example of this dates from July 2012 where the Commission promulgated a recommendation to the member states vis-à-vis the implementation of both OA and ORD in their national research policy. Subsequently in 2013 the consultancy firm Science Metrix on request from the Commission produced a comparative analysis of ORD in and outside of the European Research Area. Further, the EU has started an extensive consultation process regarding

¹¹ The thematic areas Energy, Environment, Health, SSH and ICT as well as the programs for Science in Society and Research Infrastructures

¹² FET, Research Infrastructures, LEIT-KT, Energy, Climate, Inclusive society and Science with and for Society

Science 2.0 and its added value for ERA. A paper about this is expected during the course of 2014.

Links:

[Overview of the EU policy initiatives within OA](#)

[Science Metrix report regarding ORD policies \(2013\)](#)

[Commission recommendation \(2012\)](#)

[Riding the wave – ORD report from High Level Expert Group \(2010\)](#)

- **Working groups / Networks**

- "informal network for dialogue on access to scientific information"
- **Digital Era Forum: (vorher e-Infrastructures Policy Forum)**
Subgroup on "Knowledge circulation – open access to data and to publications and to Digital ERA"
- ERAC **Working** Group on Knowledge Transfer: (Ref. 223)

- **EU-funded projects**

- Ø **Pasteur 4 OA** (<http://www.pasteur4oa.eu/project>)

PASTEUR4OA supports the aim of encouraging the development of matching policies on Open Access and Open Data in the European Union, according to the European Commission's recent Recommendation on "Access to and preservation of scientific information" (July 2012) and in view of maximizing alignment with the Horizon 2020 policy on access to the research funded by the Commission. The project helps develop and/or reinforce Open Access strategies and policies at the national level and facilitate their coordination among all Member States. It will build a network of centres of expertise in Member States that will develop a coordinated and collaborative programme of activities in support of policymaking at the national level under the direction of project partners. The project builds on an already existing project, Mediterranean Open Access Network (MedOANet - <http://www.medoanet.eu>) capitalizing on its work and an already established network within Mediterranean Europe. Further, it will take advantage of the experience and extensive networks of organizations such as EOS (Enabling Open Scholarship), JISC (Joint Information Systems Committee), SparcEUROPE, LIBER (Association of European Research Libraries), EIFL, as well as prominent funding organizations that participate in the consortium, to secure a European-wide engagement of bodies of authority of the Member States with the project's aims and extend its impact beyond Member States to neighbouring Accession States.

More specifically, PASTEUR4OA will improve coordination in developing OA policies that align to the European Commission's Recommendations and Horizon2020 rules by realizing the following measurable and verifiable objectives:

- The identification of Key Node organisations throughout Europe and in accession/associated states, on the basis of their institutional profile, record and ability to influence policymaking, and the development of a network of expert organisations
- The development of a programme for engaging policymakers
- A Europe-wide project meeting of national experts
- Establish the foundations of a Knowledge Net by the end of the project through continuous engagement of the Key Node organisations.
- Recording policies and policy types in order to develop a policy typology
- Policy analysis: effectiveness and growth
- A mapping of existing policies to policymakers
- Development of advocacy materials
- The identification of policymakers in the MS and accession/associated states

- Policymaker engagement
- The project's final conference which will bring together Key Node members and policymakers, as well as provide the opportunity for a wider presentation of project achievements

Ø **Foster: Facilitate Open Science Training for European Research**
[\(http://www.fosteropenscience.eu/\)](http://www.fosteropenscience.eu/)

Open Access and Open Science principles are an essential part of knowledge creation and sharing. They directly support the researchers need for greater impact, optimum dissemination of research, while also enabling the engagement of citizen scientists and society at large on societal challenges. This two year project aims to set in place sustainable mechanisms for EU researchers to FOSTER OPEN SCIENCE in their daily workflow, thus supporting researchers optimizing their research visibility and impact, the adoption of EU open access policies in line with the EU objectives on Responsible Research & Innovation.

Ø **Recode Policy RECommendations for Open Access to Research Data in Europe** [\(http://recodeproject.eu/\)](http://recodeproject.eu/)

The Policy RECommendations for Open Access to Research Data in Europe (RECODE) project will leverage existing networks, communities and projects to address challenges within the open access and data dissemination and preservation sector and produce policy recommendations for open access to research data based on existing good practice. The RECODE partners (Trilateral Research & Consulting, The e-Humanities group, The University of Sheffield, The Stichting LIBER Foundation, National Documentation Centre, National Research Council of Italy, Blekinge Institute of Technology, Amsterdam University Press) will identify relevant stakeholders, build upon and strengthen existing stakeholder engagement mechanisms. It will conduct studies of good practice and exchange good practice principles with relevant stakeholders and institutions during networking activities. The RECODE project will culminate in a series of policy recommendations for open access to research data targeted at different stakeholders and policy-makers.

• **Activities of the Science Community**

Ø **Global research council** [\(http://www.globalresearchcouncil.org/\)](http://www.globalresearchcouncil.org/)

The Global Research Council is a virtual organization, comprised of the heads of science and engineering funding agencies from around the world, dedicated to promoting the sharing of data and best practices for high-quality collaboration among funding agencies worldwide. In May 2013 an Action plan on Open Access was developed.

Ø **Knowledge exchange group**
[\(http://www.knowledge-exchange.info/Default.aspx?ID=115\)](http://www.knowledge-exchange.info/Default.aspx?ID=115)

Knowledge Exchange is a co-operative effort that supports the use and development of Information and Communications Technologies (ICT) infrastructure for higher education and research.

The Knowledge Exchange partners are:

- CSC - IT Center for Science in Finland
- Denmark's Electronic Research Library (DEFF) in Denmark
- German Research Foundation (DFG) in Germany
- Jisc in the United Kingdom
- SURF in the Netherlands

The Knowledge Exchange partners express a common vision based on our five national strategies: 'To make a layer of scholarly and scientific content openly available on the Internet.' Making this vision a reality means creating the building blocks for a European information environment that is outstanding in its support of research and higher education,

bringing Europe together while extending the reach of European research and teaching around the globe. The partners work together on activities in the field of Open Access, Research Data, Research Tools and Technologies and Interoperability Standards.

Ø Science Europe (<http://www.scienceeurope.org/>)

Science Europe is an association of European Research Funding Organisations (RFO) and Research Performing Organisations (RPO), based in Brussels. Its founding General Assembly took place in Berlin in October 2011. Science Europe promotes the collective interests of the Research Funding and Research Performing Organisations of Europe. It supports its Member Organisations in their efforts to foster European research. It will strengthen the European Research Area (ERA) through its direct engagement with key partners. In doing so it will be informed by direct representation of all scientific communities in its reflections on policies, priorities and strategies.

Ø EARTO (<http://www.earto.eu/>)

EARTO is a non-profit international association established in Brussels, where it maintains a permanent secretariat.

EARTO Vision: a European research and innovation system without borders in which RTOs occupy nodal positions and possess the necessary resources and independence to make a major contribution to a competitive European economy and high quality of life through beneficial cooperation with all stakeholders.

EARTO Mission: to promote and defend the interests of RTOs in Europe by reinforcing their profile and position as a key player in the minds of EU decision-makers and by seeking to ensure that European R&D and innovation programmes are best attuned to their interests; to provide added-value services to EARTO members to help them to improve their operational practices and business performance as well as to provide them with information and advice to help them make the best use of European R&D and innovation programme funding opportunities.

The Association represents the interests of about 350 RTOs from across the European Union and “FP-associated” countries (90 direct members, some of which are associations regrouping several RTOs).

Open Access to data and the Task Force was recently part of a working group meeting around Horizon 2020.

Ø LERU (www.leru.org)

Since its founding in 2002, the League of European Research Universities (LERU) has emerged as a prominent advocate for the promotion of basic research at European universities. LERU strongly believes that basic research plays an essential role in the innovation process and significantly contributes to the progress of society.

LERU aims at furthering the understanding and knowledge of politicians, policy makers and opinion leaders about the role and activities of research-intensive universities. Drawing on the impressive academic potential and expertise of its network, LERU has a strong and significant impact on research policy in Europe.

LERU is dedicated to continuing this through direct communication and discussions within the policy community, sound proposals for further improvement and progress, and carefully considered position papers on fundamental issues such as academic careers and the role of universities.

[LERU documentation on OA to publications and research data](#)

- LERU Roadmap towards Open Access:
http://www.leru.org/files/publications/LERU_AP8_Open_Access.pdf
- LERU Roadmap for Research Data:
http://www.leru.org/files/publications/AP14_LERU_Roadmap_for_Research_data_final.pdf
- Global Research Council (GRC)-Review of Implementation of the GRC Action Plan towards OA to Publications:
http://www.jsps.go.jp/information/data/GRC_Open_Access_Review_of_Implementation_-_Summary_Report.pdf

Ø Business Europe (www.buinesseurope.eu)

BUSINESSEUROPE is the leading advocate for growth and competitiveness at European level, standing up for companies across the continent and campaigning on the issues that most influence their performance. A recognised social partner, we speak for all-sized enterprises in 34 European countries whose national business federations are our direct members.

The organisation is headquartered in Brussels at the heart of the EU institutions. We work on behalf of our member federations to ensure that the voice of business is heard in European policy-making. We interact regularly with the European Parliament, Commission and Council as well as other stakeholders in the policy community. We also represent European business in the international arena, ensuring that Europe remains globally competitive.

They made a position paper on Open Access already in 2012.

Ø Open Knowledge Foundation (<https://okfn.org/>)

Open Knowledge is a worldwide non-profit network of people passionate about openness, using advocacy, technology and training to unlock information and enable people to work with it to create and share knowledge.

They want to see *open knowledge* being a mainstream concept, and as natural and important to our everyday lives and organisations as *green* is today.

- Selected national ORD initiatives

ORD is increasingly mentioned in research fora's and administrations in and outside the EU. However, it is only very few countries who have developed an official ORD policy and often only as a result of a bigger openness policy and only on the rarest occasion as an actual separate research policy. The remaining specific initiatives are voluntary and the majority of the efforts in creating an infrastructure continue to be on a very early pilot stage.

- Europe

In Europe several countries are in the process of establishing an e-infrastructure for sharing public data including research data. Among the leading countries in the OECD's monitoring database are Finland (Social Science Data Archive), the Netherlands (open and voluntary cross-disciplinary database), Norway (voluntary national database) and Great Britain (multiple initiatives, including a center focusing on securing optimal use of open data). Portugal also has several initiatives.

Links:

Finland: [Finland's social science data archive](#)

Great Britain: [Great Britain's open data institute](http://www.gov.uk/government/groups/research-sector-transparency-board), the Research Sector transparency Board (<https://www.gov.uk/government/groups/research-sector-transparency-board>), and the Open Research Data Forum (<http://www.researchinforonet.org/research-data/open-research-data-forum/>)

The Netherlands: [The Netherlands open data archive – DANS](#)

Norway: [Norway's open data portal](#)

Portugal: leading open research data initiatives in fields such as social sciences (project PASSDA - PRODUCTION AND ARCHIVE OF SOCIAL SCIENCE DATA - <http://capp.iscsp.ulisboa.pt/en/production-and-archive-of-social-science-data-passda>), big data (DataStorm - <http://dmir.inesc-id.pt/project/DataStorm>) and public sector open data (<http://www.dados.gov.pt/pt/inicio/inicio.aspx>)

○ **Australia**

Australia has positioned itself as one of the leading countries outside the EU with regard to OA. Among other activities, the country has been very much involved in RDA. Furthermore, since 2013 Australia's national research council (ARC) has had an OA policy that imposes all research results that have been produced with the support of the ARC to be made public available within a period of 12 months.

Link:

[Australia's Open Access Policy.](#)

○ **Canada**

Canada has launched a general political initiative regarding "*open source government*". Through this, publicly generated data are made available for the public. In addition, three big Canadian research councils have come together on a common OA policy including a special requirement vis-à-vis ORD (yet, this only applies to the Canadian Institute of Health Research (CIHR)).

Links:

[Open Data portal](#)

[Tri-Agency open access policy](#)

○ **USA**

USA has launched a movement towards a more open source government with an "Open data policy" and a corresponding project under the title "Project open data". Both initiatives have been launched in order to make data generated through public funds more accessible for researchers as well as for the civil society. In addition, the Office of Science and Technology Policy (OSTP) sent out a memo in February 2013 imposing every American research councils and agencies with a yearly distribution level over a 100\$ to produce a plan for the implementation of OA and ORD in their respective systems.

Links:

[Project Open Data](#)

[US – Open data policy](#)

[Memorandum – Increasing Access to the Results of Federally Funded Scientific Research](#)