

OPEN SCIENCE DALLA A ALLA Z – Modulo 3 Elena Giglia



APRE, 4 ottobre 2018
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Openness

It is my opinion that the future of innovation lies in bringing as many different people, concepts and fields together. The future of research in Europe lies in people like you setting its course as a community, and with those who are different from you.

In my eyes, the future lies in open innovation, because openness fuels innovation.



I am convinced that **excellent science is the foundation of future prosperity,**
and that **openness is the key to excellence.** [...]
We need more open access to research results and
the underlying data.

**Let's dare to make Europe open to
innovation, open to science and open
to the world.**



... «core strategy»...

HORIZON 2020

Horizon 2020



What is
Horizon 2020?

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Framework

Sections navigation

Science with and for
Society

Open Science (Open

Open Science (Open Access)

Article

Newsroom

Nowadays, it is widely recognised that making research results more accessible contributes to better and more efficient science, and to innovation in the public and private sectors.

In 2012, the European Commission encouraged all EU Member States to put public-funded research results in the public sphere in order to make science better and strengthen their knowledge-based economy, via a Recommendation.

Science has always been open, unlike the processes for producing research and diffusing its results.

As other challenges need to be addressed such as infrastructure, property rights, content-mining and alternative metrics, but also institutional, inter-disciplinary and international collaboration are needed for research and innovation, the European Commission is now moving from 'Open access' into the broader picture of 'Open science'.

This is reflected in the Science with and for Society work programme 2020 with calls addressing text and data mining, and innovative release and disseminate research results and measure their impact.

Elements of 'Open science' will also gradually feed into the shaping of Responsible Research and Innovation and contribute to the realisation of the European Research Area and the Innovation Union, the two main flagship initiatives for research and innovation.

... shift towards making research findings available free of charge, so-called 'Open access', has been **a core strategy** in the Commission to improve knowledge circulation and thus innovation. It is illustrated in particular by the general principle for open access to scientific publications in Horizon 2020 and the pilot for research



Carlos Moedas ✓
@Moedas

Segui

2/4 "Open as possible, as closed as necessary" is the new principle for all **#data** from publicly funded **#research** in Europe **#openaccess**

RETWEET
76

MI PIACE
32



... Open Science = innovation...

Today's conference "Opening up to an ERA of Innovation" features a session devoted to open science.

What is open science about?

Open Science describes the on-going transitions in the way research is performed, researchers collaborate, knowledge is shared, and science is organised. It represents a systemic change in the modus operandi of science and research. It affects the whole research cycle and its stakeholders, enhances science by facilitating more transparency, openness, networking, collaboration, and refocusses science from a 'publish or perish' perspective to a knowledge-sharing perspective.

Open science is also about making sure that science serves innovation and growth. It guarantees open access to publicly-funded research results and the possibility of knowledge sharing by providing infrastructures. Facilitating access to those data will encourage re-use of research output. For example, companies, and particularly SMEs, can access and re-use data, infrastructures and tools easily and at a reasonable cost and can accelerate the implementation of ideas for innovative products and services.

on européenne
Commission



...Open Access by default in 2020...

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



Brussels, 27 May 2016
(OR. en)

9526/16

RECH 208
TELECOM 100

OUTCOME OF PROCEEDINGS

From: General Secretariat of the Council
To: Delegations
No. prev. doc.: 8791/16 RECH 133 TELECOM 74
Subject: The transition towards an Open Science system
- Council conclusions (adopted on 27/05/2016)

in research systems and disciplines, and that open access to scientific publications should be the principle that no researcher should be prevented from publication, Member States and relevant stakeholders, including universities, should catalyse this transition; and STRESSES the importance of ensuring the sustainability of such arrangements.



European Council
Council of the European Union

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[Home](#) > [Meetings](#) > [Competitiveness Council, 26-27/05/2016](#)

Council of the EU

Competitiveness Council, 26-27/05/2016

- [Indicative programme - Competitiveness Council of 26-27/05/2016](#)
- [Background brief](#)

Research and Innovation

Following a debate on **open science**, the Council adopted conclusions on the transition towards an open science system.

“

“Open Science is a topic which is very dear to our hearts. During the Netherlands presidency, we have aimed at bringing Europe to the forefront of global change and at leading the transition to a new way of doing research and science based on openness, big data and cloud computing.”

Sander Dekker, State Secretary of Education, Culture and Science of the Netherlands

It also adopted conclusions on the lessons learnt from the **7th research framework programme and the future outlook** and on the creation of a friendly regulatory **environment for research and innovation**.

Chairing the Council, Sander Dekker, State Secretary of Education, Culture and Science of the Netherlands, made the following statement:

“Open Science is a topic which is very dear to our hearts. During the Netherlands presidency, we have aimed at bringing Europe to the forefront of global change and at leading the transition to a new way of doing research and science based on openness, big data and cloud computing. Open Science breaks down the barriers around universities and ensures that society benefits as much as possible from all scientific insights. In that way we maximize the input of researchers, universities and knowledge institutions”.

Today, building on work done during recent months, particularly at the April conference when we approved the “Amsterdam Call for Action on Open Science”, I can say that we have made a major step forward”.



Highlights of the Competitiveness Council, taking place on 27 May in Brussels.

Open innovation, open to the world...

<http://ec.europa.eu/research/openvision/index.cfm?pg=expert-groups>

OPEN INNOVATION OPEN SCIENCE OPEN TO THE WORLD

Advisory Group

Research, Innovation and Science Policy Experts (RISE)

Europe's future: Open Innovation, Open Science, Open to the World



The RISE group published its book 'Europe's future: Open Innovation, Open Science, Open to the World' on 15 May 2017. The report was presented to Carlos Moedas, Commissioner for Research, Science and Innovation, at discussed at a workshop in Brussels hosted by the Centre for European Policy Studies (CEPS).

Commissioner Moedas said: "Making our science and innovation more open and international will help Europe respond to the challenges of globalisation and social

We need to define **missions that breakdown silos**. We have made progress in Horizon 2020 to focus resources in selected areas. But we still support too many different projects that disperse or fragment our funding. We need to set our eyes on a specific target, and drive our scientific efforts towards reaching that target. And we need to be

This leads me to an important point on mission driven science: it needs to be interdisciplinary. We can set high targets, but if science remains in silos, we will not reach them. Mission driven means we need to step away from approaching challenges in a vertical thematic way.

Now to my final point: **we need to invest in science communication**. Communicating science is important, now more than ever.

Not just because we need to showcase the great work we are doing.

But also because of the threats we face; the rise in populism, extremism and euro-scepticism. We're living in an era of distrust and confusion. And these kinds of threats are attacking the role and the legitimacy of science. For me, science is the only way we can reconnect citizens with the EU project.

This publication gives us the confidence. It shows us we have the tools, the knowledge, and the opportunity to shape the future. And the best possible future is an Open one.

... Mission-oriented research...

Feb 22, 2018



MISSIONS

Mission-Oriented Research & Innovation in the European Union

A problem-solving approach to fuel innovation-led growth

by Mariana MAZZUCATO



Mariana Mazzucato
@MazzucatoM

Following

Today I handed EC #Mission Oriented R&I report to @Moedas, hoping it inspires #horizon FP9 data.europa.eu/doi/10.2777/36... so good i wanted it back

Traduci dalla lingua originale: inglese



Figure 1. From Challenges to Missions Image: RTD - A.1 based on Mazzucato (2017)

Recommendation on Access (Apr. 25)



25 Apr. 2018

Brussels, 25.4.2018
C(2018) 2375 final

COMMISSION RECOMMENDATION

of 25.4.2018

on access to and preservation of scientific information

“ Open access to scientific information is a cornerstone of a modern Open Science system. Most EU Member States now have open access policies in place but the situation across the EU varies. This revised Recommendation provides very powerful guidance to the Member States so that they can reach their goal of transition to immediate open access as the default by 2020. ”

- (12) The move towards open access is a worldwide endeavour. Member States have been part of this endeavour and should be supported in enhancing an open, collaborative research environment based on reciprocity at a global level. Open science is a key feature of Member States' policies for responsible research and for open innovation. As new digital technologies become available, research and funding policies should adapt to this new environment.

Recommendation on Access (Apr. 25)

Open access to scientific publications

1. Member States should set and implement clear policies (as detailed in national action plans) for the dissemination of and open access to scientific publications resulting from publicly funded research. Those policies and action plans should provide for:

- researchers, when entering into contractual agreements with scientific publishers, retain the necessary intellectual property rights, inter alia, to comply with the open access policy requirements. This concerns in particular self-archiving and re-use (notably through text and data mining);

2. Member States should ensure that research funding institutions responsible for managing public research funding and academic institutions receiving public funding implement the policies and national action plans referred to in point 1 at national level in a coordinated way by:

- setting institutional policies for the dissemination of and open access to scientific publications, and establishing implementation plans;
- including requirements for open access as a condition to give out grant agreements or to provide other financial support for research, together with mechanisms for monitoring compliance with these requirements and follow up actions to correct cases of non-compliance;
- making the necessary funding available for dissemination (including open access and re-use) in a transparent and non-discriminatory manner allowing for different channels, including digital infrastructures where appropriate, as well as new and experimental methods of scholarly communication;
- providing guidance to researchers on how to comply with open access policies, and supporting them to do so, especially regarding the management of their intellectual property rights to ensure open access to their publications;
- conducting joint negotiations with publishers to obtain transparent and the best possible terms for access to publications, including use and re-use;

Open Access policy
nazionale

Mantenere i diritti

Open Access policy per
Ateneo

- Legate alla valutazione
- Disseminazione in canali diversi
- Formazione e supporto

Recommendation on Access (Apr. 25)

Management of research data, including open access

3. Member States should set and implement clear policies (as detailed in national action plans) for the management of research data resulting from publicly funded research, including open access. Those policies and action plans should provide for:

- research data that results from publicly funded research becomes and stays findable, accessible, interoperable and re-usable ("FAIR principles") within a secure and trusted environment, through digital infrastructures (including those federated within the European Open Science Cloud (EOSC), where relevant), unless this is not possible or is incompatible with the further exploitation of the research results ("as open as possible, as closed as necessary"). This could be for reasons, in particular, of privacy, trade secrets, national security, legitimate commercial interests and to intellectual property rights of third parties. Any data, know-how and/or information whatever its form or nature which is held by private parties in a joint public/private partnership prior to the research action should not be affected by these policies or national action plans;

4. Member States should ensure that research funding institutions responsible for managing public research funding and academic institutions receiving public funding implement the policies and national action plans referred to in point 3 at national level in a coordinated way by:

- providing guidance to researchers on how to comply with research data management policies, and supporting them to do so, especially regarding the development of sound data management planning skills and digital infrastructures that support access to and preservation of research data;

Policy nazionale per la gestione dei dati

FAIR data per EOSC

Policy di Ateneo per la gestione dei dati

Competenze e infrastrutture

Open Access in 2020

Stiamo spendendo tonnellate di denaro pubblico per gli abbonamenti
IMMAGINATE SE POTESSIMO DESTINARE QUESTI MILIARDI ALLA RICERCA, INVECE



Open access to scientific publications must become a reality by 2020 – Robert-Jan Smits

March 23, 2018

Making scientific publications free to read is a big change in a world dominated by subscription journals. Why is it so important that science publications become open access?

'At the moment we are putting a lot of public money at national, European and global level into science. But we don't have free access to the published results of the research we fund because this is locked behind paywalls. We have to spend an enormous amount of money each year on subscriptions to journals where scientific articles are published and on making these results immediately available in open access. Imagine if all the billions we are now putting into these expensive subscription journals could be put into research. That's also why in the [3 O's policy](#) of Commissioner Moedas (the EU Commissioner for Research, Science and Innovation), open access is mentioned explicitly as a top priority within the open science agenda.

'Open access to research results will help to have more and faster innovations, to have quicker solutions to the problems we are facing and to allow further research to be carried out.

g scientific papers free to access but when it
y, according to Robert-Jan Smits, the EU's outgoing
d innovation. He has recently been appointed the
d with helping make all publicly funded research



Open Access in 2020

'What should not be important is where you publish, but what you publish.'

Robert-Jan Smits, EU special envoy on open access

Open access to scientific publications must become a reality by 2020 – Robert-Jan Smits

March 23, 2018 by Joanna Roberts

March 23, 2018

A lot of lip service is being paid to making scientific papers free to access but when it comes to action there is a lot of hypocrisy, according to Robert-Jan Smits, the EU's outgoing director-general for research, science and innovation. He has recently been appointed EU's special envoy on open access, tasked with helping make all publicly funded research in Europe freely available by 2020.

How do you overcome that?

It requires that we don't just look at the open access issue in isolation. It is part of a more general transition towards open science on which our colleagues at DG RTD (the EU's Directorate-General for Research and Innovation) are doing impressive work. Take for instance the ranking (of) universities. This should not just be based on the sole metrics of publications in high impact journals. Universities can also be ranked with regard to their contribution to the local economy, or to the economy in general, with regard to cooperation agreements they have with industry, outreach they do towards citizens. So we should get away from this obsession that there is only one metric according to which we should rank universities.

'And it also requires that reward systems in universities are modernised and, most importantly, becoming multi-dimensional – away from only the high impact factor. At the moment if you want to make a career as a researcher inside your university, you have to publish in these high impact journals. Why not reward people if they file a patent, which for me is as important as three publications in a subscription journal. Or if they share a data set? Why not reward people if they do outstanding education? Why not reward people if they work with the local authorities to solve a problem in the local community?

'So the recommendations that I will present in autumn will not just focus on open access to scientific publications, but will touch upon the ecosystem around it that needs to change because else we will not reach the 2020 target.'

- allontanarsi dall'OSSESSIONE per le metriche tradizionali
- - deve modificarsi INTERO ECOSISTEMA



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Open Access in 2020

It sounds like a straightforward goal – what are the sticking points?

'What makes things complex is that there are multiple stakeholders, each with their own vested interests. Take the publishers. They have a big commercial interest because the journals which they publish bring in a lot of cash since they are extremely expensive (high subscription fees). That's why they are not keen to change their business model. Yet, I want to reach out to them to convince them to join the open access movement, partner with us and build an open access future in partnership with us.'

'Other key stakeholders are the researchers and their institutions. For them the situation is also complex, notably because we have put ourselves into kind of a very dangerous cobweb. Although researchers all say that they are supporting open access, their dream is still to publish in the most prestigious journals with the highest impact factor, which are often subscription journals. And the universities are obsessed by the traditional rankings using mainly one metric – number of publications in high impact journals. The libraries are also an interesting stakeholder. They want to preserve the money and power they have to finance the subscriptions to the prestigious journals. They fear that if they don't have this money anymore, their role will be less important.'

'That's why I often say that there is a lot of lip service being paid to open access, there is a lot of hypocrisy in the system as it is a perfect example of a catch-22. People talk a lot about it but when it comes to question, "Are you really willing to stick out your neck and go for it 100%?" there are a lot who will leave the room and there are only a few who walk the talk.'

OSTACOLI
- Editori vogliono
mantenere
profitti
- Università
OSSESSIONATE dai
ranking

PlanS - cOAlitionS

cOAlitionS
Making
Open Access
a reality
by 2020

A DECLARATION OF COMMITMENT
BY PUBLIC RESEARCH FUNDERS

<http://scieur.org/coalition-s>

Plan S Sept. 4, 2018

**Accelerating the transition to
full and immediate Open Access to
scientific publications**

The key principle is as follows:

"After 1 January 2020 scientific publication
by national and European research coun-
Access Journals or on compliant Open Acc

IN ADDITION:

- Authors retain copyright of their publication with no restrictions. All publications must be published under an open license, preferably the Creative Commons Attribution Licence CC BY. In all cases, the license applied should fulfil the requirements defined by the Berlin Declaration;

- The Funders will ensure jointly the establishment of robust criteria and requirements for the services that compliant high quality Open Access journals and Open Access platforms must provide;

In case such high quality Open Access journals or platforms do not yet exist, the Funders will, in a coordinated way, provide incentives to establish and support them when appropriate; support will also be provided for Open Access infrastructures where necessary;

Where applicable, Open Access publication fees are covered by the Funders or universities, not by individual researchers; it is acknowledged that all scientists should be able to publish their work Open Access even if their institutions have limited means;

- When Open Access publication fees are applied, their funding is standardised and capped (across Europe);

- The Funders will ask universities, research organisations, and libraries to align their policies and strategies, notably to ensure transparency;

- The above principles shall apply to all types of scholarly publications, but it is understood that the timeline to achieve Open Access for monographs and books may be longer than 1 January 2020;

- The importance of open archives and repositories for hosting research outputs is acknowledged because of their long-term archiving function and their potential for editorial innovation;

- The 'hybrid' model of publishing is not compliant with the above principles;

- The Funders will monitor compliance and sanction non-compliance;

- NO RIVISTE IBRIDE
- TETTO ALLE APC
- APC PAGATE SEMPRE DA ISTITUZIONI
- AUTORI MANTENGONO COPYRIGHT, LICENZE CC BY

- REAZIONI
- DIBATTITO

PlanS - cOAlitionS

Science Without Publication Paywalls Sept. 4, 2018
a Preamble to:

cOAlition S for the Realisation of Full and Immediate Open Access

Publication paywalls are withholding a substantial amount of research results from a large fraction of the scientific community and from society as a whole. This constitutes an absolute anomaly, which hinders the scientific enterprise in its very foundations and hampers its uptake by society. Monetising the access to new and existing research results is profoundly at odds with the ethos of science. There is no longer any justification for this state of affairs to prevail and the subscription-based model of scientific publishing, including its so-called 'hybrid' variants, should therefore be terminated. In the 21st century, science publishers should provide a service to help researchers disseminate their results. They may be paid fair value for the services they are providing, but **no science should be locked behind paywalls!**

- chiudere dietro abbonamento significa nascondere risultati alla comunità scientifica e alla società
- MONETIZZARE L'ACCESSO VA CONTRO L'ETICA DELLA SCIENZA
- giusto pagare un servizio ma la scienza non deve essere chiusa dietro un abbonamento

PlanS - cOAlitionS

Science Without Publication Paywalls Sept. 4, 2018
a Preamble to:

cOAlition S for the Realisation of Full and Immediate Open Access

We recognise that researchers need to be given a maximum of freedom to choose the proper venue for publishing their results and that in some jurisdictions this freedom may be covered by a legal or constitutional protection. However, our collective duty of care is for the science sys-

researchers must realise that they are doing a gross disservice to the institution of science if they continue to report their outcomes in publications that will be locked behind paywalls.

We also understand that researchers may be driven to do so by a misdirected reward system which puts emphasis on the wrong indicators (e.g. journal impact factor). We therefore commit to fundamentally revise the incentive and reward system of science, using the San Francisco Declaration on Research Assessment (DORA)⁴ as a starting point.

- chiudere i risultati dietro abbonamento significa **RENDERE UN GROSSO DISSERVIZIO ALLA SCIENZA**
- **GLI AUTORI POSSONO ESSERE SPINTI A FARLO DA UN SISTEMA DI INCENTIVI FUORVIANTE CHE SI BASA SU INDICATORI SCORRETTI (IMPACT FACTOR)**

...disrupting

Peer review and scientific publishing

Who are the real pirates in academic publishing?

Readers respond to George Monbiot's article on the global scientific publishing industry

Letters

Fri 14 Sep 2018 17.07 BST

Sept. 14, 2018

Scientific publishing is a rip-off. We fund the research - it should be free

George Monbiot



Sept. 13, 2018

Those who take on the global industry that traps research behind paywalls are heroes, not thieves

The Guardian
International edition

Last week, a consortium of European funders, including major research agencies in the UK, France, the Netherlands and Italy, published their “**Plan S**”. It insists that, from 2020, research we have already paid for through our taxes will no longer be locked up. Any researcher receiving money from these funders must publish her or his work only in open-access journals.

The publishers have gone ballistic. Springer Nature **argues that** this plan “potentially undermines the whole research publishing system”. Yes, that’s the point. The publishers of the Science series **maintain that** it would “disrupt scholarly communications, be a disservice to researchers, and impinge academic freedom”. Elsevier **says**, “If you think information shouldn’t cost anything, go to Wikipedia”, inadvertently reminding us of what happened to the commercial encyclopedias.

Plan S is **not perfect**, but this should be the beginning of the end of Maxwell’s outrageous legacy. In the meantime, as a matter of principle, do not pay a penny to read an academic article. The ethical choice is to read the stolen material published by Sci-Hub.

...oppure,
rendete aperta
la vostra ricerca
depositando. Poi
c’è Unpaywall

Birgit

...disrupting



Hindawi Institutions Publishers Blog Meet the Team

Promoting innovation and reducing inequity in scholarship: Europe's Plan S for Open Science

Catriona MacCallum September 11th, 2018



Science works best when research is open

The only thing we can know for certain about the future is that if we want to promote innovation, this future doesn't – and shouldn't – include subscriptions or paywalls to basic research articles.

Promoting innovation

By coincidence, a film documentary, [Paywall: the Business of Scholarship](#), was also released last week. Produced and directed by Jason Schmitt and funded by [Open Society Foundations](#), it consists of interviews with librarians, publishers, Open Access

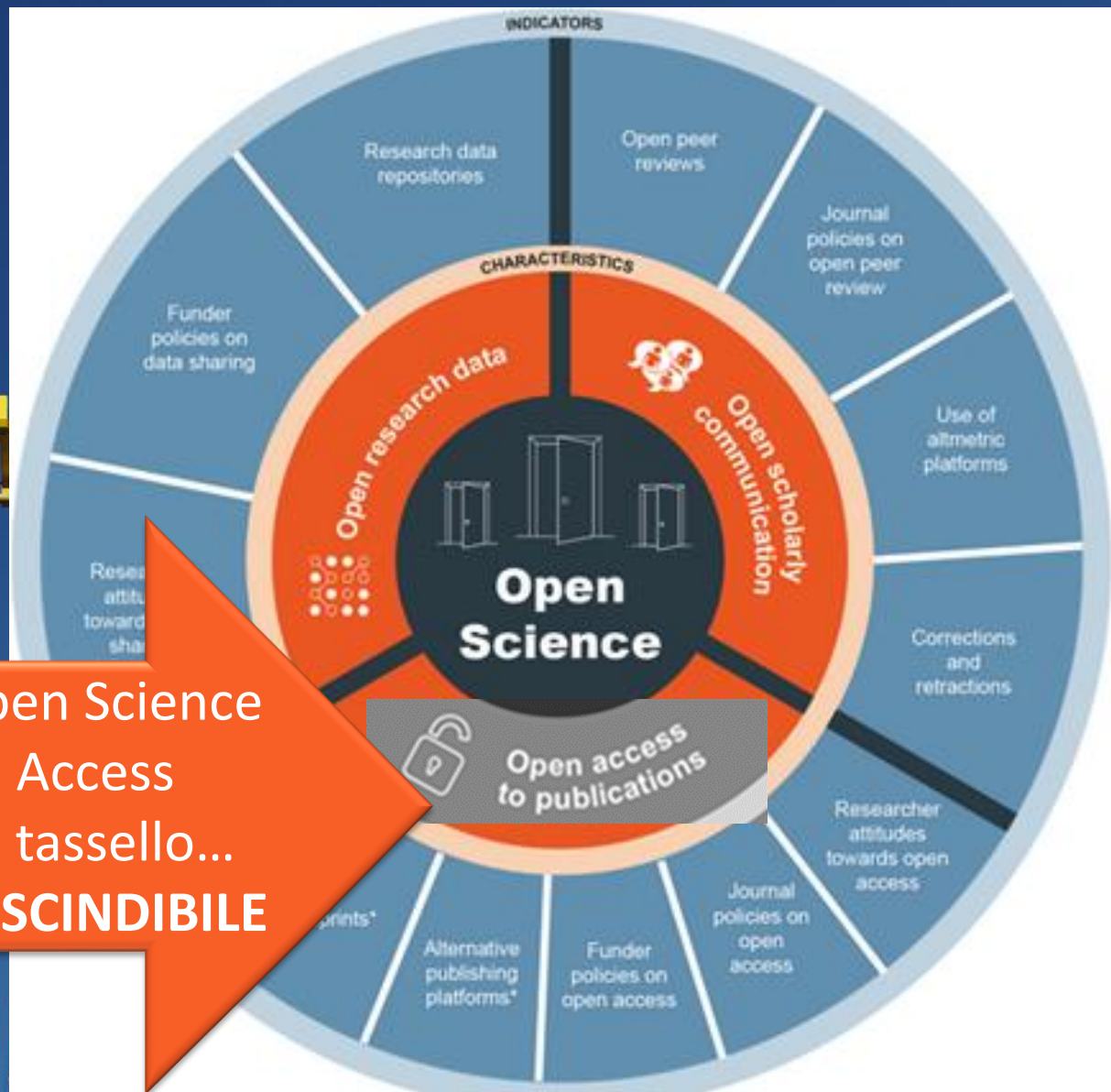
Somewhat disingenuously, many of the publishers objecting to Plan S have stated that authors will no longer have freedom of choice, often considered a fundamental academic right (and enshrined in European law). But as Stephen Curry noted in a [recent talk](#) at the inaugural [workshop on open citations](#) in Bologna, freedom of choice does not mean freedom from responsibility. And it is not just researchers who have a responsibility, but all the stakeholders involved in the dissemination and evaluation of research, including researchers, institutions, funders, and publishers. In Plan S, the funders go on to acknowledge that researchers may currently be driven to put their work behind paywalls “by a misdirected reward system which puts emphasis on the wrong indicators (e.g. journal impact factor).” And this I think leads to the other most important point of Plan S, their commitment “to fundamentally revise the incentive and reward system of science, using the San Francisco Declaration on Research Assessment (DORA) as a starting point”.

Plan S is disruptive – this is not business as usual. That is why it is so important.

Sept. 11, 2018

Birgit

Open Science Monitor v. 1



... nella Open Science
l'Open Access
è solo un tassello...
ma **IMPRESINDIBILE**

Open Science Monitor v. 2

Tracking trends for open access, collaborative and transparent research across countries and disciplines.

Trends for open access to publications

Data and case studies covering access to scientific publications. Bibliometric data as well as data on the policies of journals and funders are available.

Facts and Figures for open research data

Figures and case studies related to accessing and reusing the data produced in the course of scientific production.

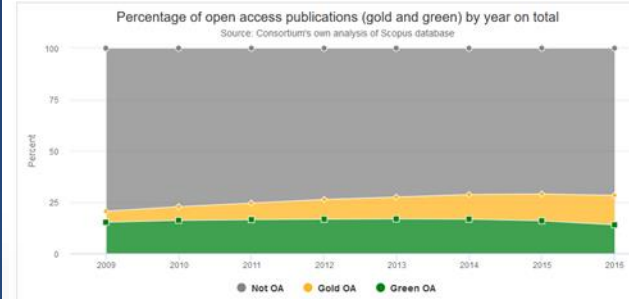
Data on open collaboration

Figures on availability of scientific APIs, open code policies, citizen science projects as well as case studies.

https://ec.europa.eu/info/open-science/open-science-monitor_en

Open access to publications

This data, gathered through the analysis of [Scopus data](#), shows the percentage of open access publications. It is presented by year, country and discipline. You can click on the buttons below the chart to select the data to display.



July 5, 2018

Other Open Access

Complaint to the European Ombudsman about Elsevier and the Open Science Monitor

Jonathan Tennant

A formal complaint to the European Commission Ombudsman regarding the relationship between Elsevier and the Open Science Monitor. Submitted to them on July 05, 2018.

The full signatory list can be found [here](#).

July 2018

4,608

views

2,108

downloads

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[See more details](#)

Blogged by 2
Tweeted by 108
Mentioned in 4 Google+ posts
1 reader's on Mendeley

Complaint to the European Ombudsman about Elsevier and the Open Science Monitor

The Guardian
International edition

Political science Open access scientific publishing

Elsevier are corrupting open science in Europe

Elsevier - one of the largest and most notorious scholarly publishers - are monitoring Open Science in the EU on behalf of the European Commission. **Jon Tennant** argues that they cannot be trusted.

Jon Tennant

Fri 29 Jun 2018 16:00 BST

June 29, 2018

Consequences of Elsevier as the sole subcontractor

- The position of power for Elsevier will have an impact on the future of a fair scholarly publishing market in the EU. From a scientific perspective, selectively choosing and restricting data sources to the exclusion of others (as clearly indicated in the methods for the Monitor), is generally considered to be bad practice.
- By using predominantly, and for many indicators almost entirely, Elsevier-based services, such as Mendeley, Scopus, and Plum Analytics, subcontracting to Elsevier creates an inherent bias in the primary data sources. The potential distortion and size of these biases are unknown at the present time.



Jon Tennant
@Protohedgehog

Aug. 28, 2018

Following

"In view of the complexity of the issues you have raised, an in-depth analysis by my services is required."

The European Commission have responded to our complaint about Elsevier and the Open Science Monitor!

Torino, G7



ITALIAN G7 PRESIDENCY 2017

[HOME](#) [ITALY'S G7 PRESIDENCY](#) [SUMMIT](#) [CALENDAR](#) [ACCRE](#)

[Science Ministerial Meeting](#)

Focus: Incentives and the researcher ecosystem

Ambition: Foster a research environment in which career advancement takes into account Open Science activities, through incentives and rewards for researchers, and valuing the skills and capabilities in the Open Science workforce.

Recommendations:

At national levels: G7 nations should each engage with research stakeholders to identify and implement enhancements to research evaluation and reward systems that take into consideration the Open Science activities carried out by researchers and research institutions. Topics that could be discussed include:

- Recognizing Open Science practices during evaluation of research funding proposals, and research outcomes;
- Recognizing and rewarding research productivity and impact that reflect open science activities by researchers during career advancement reviews;
- Including credit for service activities such as reviewing, evaluating, and curation and management of research data; and,
- Developing metrics of Open Science practices.

Open Science + evaluation

Open Science Career Assessment Matrix (OS-CAM)	
Open Science activities	Possible evaluation criteria
RESEARCH OUTPUT	
Research activity	Pushing forward the boundaries of open science as a research topic
Publications	Publishing in open access journals Self-archiving in open access repositories
Datasets and research results	Using the FAIR data principles Adopting quality standards in open data management and open data Making use of open data from other researchers
Open source	Using open source software and other open tools Developing new software and tools that are open to other users
Funding	Securing funding for open science activities
RESEARCH PROCESS	
Stakeholder engagement / citizen science	Actively engaging society and research users in the research process Sharing provisional research results with stakeholders through open platforms (e.g. Arxiv, Figshare) Involving stakeholders in peer review processes
Collaboration and Interdisciplinarity	Widening participation in research through open collaborative projects Engaging in team science through diverse cross-disciplinary teams
Research integrity	Being aware of the ethical and legal issues relating to data sharing, confidentiality, attribution and environmental impact of open science activities Fully recognizing the contribution of others in research projects, including collaborators, co-authors, citizens, open data providers
Risk management	Taking account of the risks involved in open science
SERVICE AND LEADERSHIP	
Leadership	Developing a vision and strategy on how to integrate OS practices in the normal practice of doing research Driving policy and practice in open science Being a role model in practicing open science
Academic standing	Developing an international or national profile for open science activities Contributing as editor or advisor for open science journals or bodies
Peer review	Contributing to open peer review processes Examining or assessing open research
Networking	Participating in national and international networks relating to open science



Jon Tennant ✓
@Protohedgehog

Following

I find it utterly bizarre that academics need to be 'incentivised' to do good research. What happened to, you know, doing your job properly?

Traduci dalla lingua originale: inglese

14:14 - 6 ott 2017



Evaluation of Research Careers fully acknowledging Open Science Practices

Rewards, incentives and/or recognition for researchers practicing Open Science

Report on OS and careers, July 2017

Open Science + evaluation

RESEARCH IMPACT	
Communication and Dissemination	Participating in public engagement activities Sharing research results through non-academic dissemination channels Translating research into a language suitable for public understanding
IP (patents, licenses)	Being knowledgeable on the legal and ethical issues relating to IPR Transferring IP to the wider economy
Societal impact	Evidence of use of research by societal groups Recognition from societal groups or for societal activities
Knowledge exchange	Engaging in open innovation with partners beyond academia
TEACHING AND SUPERVISION	
Teaching	Training other researchers in open science principles and methods Developing curricula and programs in open science methods, including open science data management Raising awareness and understanding in open science in undergraduate and masters' programs
Mentoring	Mentoring and encouraging others in developing their open science capabilities
Supervision	Supporting early stage researchers to adopt an open science approach
PROFESSIONAL EXPERIENCE	
Continuing professional development	Investing in own professional development to build open science capabilities
Project management	Successfully delivering open science projects involving diverse research teams
Personal qualities	Demonstrating the personal qualities to engage society and research users with open science Showing the flexibility and perseverance to respond to the challenges of conducting open science



Evaluation of Research Careers fully acknowledging Open Science Practices

Rewards, incentives and/or recognition for researchers practicing Open Science

Report on OS and careers, July 2017

Open Science + rewards

Furthermore, MLE discussions recurrently came to the following conclusions:

- **The implementation of Open Science needs to be part of the bigger picture.** We need to discuss the roles and functions of science in society right now, setting an agenda and missions for science and innovation based on openness.
- **National strategies for the implementation of Open Science are essential.** We need to better understand and align the links between Open Science policies and general STI policies. ERA should be the central platform for the development of national OS strategies.
- **We need Open Science champions and role models** to foster the uptake of Open Science practices and to create a sustainable transition towards more openness.
- **Open Science is enhancing knowledge markets and improving innovation.** The synergies of scholarly commons and the commercial exploitation of research outputs require a systematic review and substantial evidence.

MLE participants agreed that small fixes are not enough: implementing Open Science requires **systemic and comprehensive change in science governance and evaluation**. Crucial for a successful transition to Open Science will be strategic and paradigmatic shifts in the incentives and reward systems.

1. Mapping key stakeholders and organising venues for discussion
2. Planning and developing an Open Science strategy through close consultation with stakeholders
3. Incentivising Open Science practices by changing systems of evaluation and reward
4. Promoting critical thinking around the implementation of Open Research Data
5. Supporting and participating in international initiatives to develop and maintain Open Science infrastructures
6. Implementing a strategy based on clear goals, starting from Open Access
7. Monitoring and documenting the transition.

Apr. 25, 2018



Mutual Learning Exercise Open Science: Altmetrics and Rewards

Horizon 2020 Policy Support Facility

Open Science label



May 16, 2018

Brussels, 15.5.2018
COM(2018) 306 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN
ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE
REGIONS

A renewed European Agenda for Research and Innovation - Europe's chance to shape
its future

*The European Commission's contribution to the Informal EU Leaders' meeting on
innovation in Sofia on 16 May 2018*



The take up of open science practices at different stages of the researchers' careers can also stimulate attractive career environments for all, give more recognition and reward international and science-business mobility.⁵¹ The modernisation of universities and public research organisations should therefore also be supported with an **Open Science label**. Such a high-quality label could be awarded to individual universities and trans-national university partnerships, and would be recognised in future EU support for trans-national projects involving universities.⁵²

Open Science skills

Preprint

NOT PEER-REVIEWED

<https://peeri.com/preprints/2689/>

"PeerJ Preprints" is a venue for early communication of feedback before peer review. Data may be preliminary.
Learn more about preprints or browse peer-reviewed articles instead.

Do you speak open science? Resources and tips to learn the language

Science and Medical Education

Paola Masuzzo^{1,2}, Lennart Martens^{1,2}

January 3, 2017



Providing researchers with the skills and competencies they need to practise Open Science

Open Science Skills Working Group Report

FARE OPEN ACCESS

LA LIBERA DIFFUSIONE DEL SAPERE SCIENTIFICO NELL'ERA DIGITALE

Con contributi di Simone Alliprandi, Nicola Cavalli, Elena Giglia, Valeria Scotti, Ivana Truccolo

A cura di Simone Alliprandi



[https://commons.wikimedia.org/wiki/File:Simone Alliprandi_Fare_Open_Access.pdf](https://commons.wikimedia.org/wiki/File:Simone_Alliprandi_Fare_Open_Access.pdf)

Report, Sept.2017

Torino, G7



ITALIAN G7 PRESIDENCY 2017

HOME ITALY'S G7 PRESIDENCY ▾ SUMMIT ▾ CALENDAR ACCRE

Science Ministerial Meeting

Focus: Infrastructures for an optimal use of research data

Ambitions: All researchers are able to deposit, access and analyse scientific data across disciplines and on international scales. Research data management adheres to the FAIR principles whereby data is findable, accessible, interoperable, and reusable.

Recommendations:

At the national level: G7 nations can each work to promote the development of practices and the use of technologies and infrastructure in the research community that foster Open Science principles and data sharing, including:

- Working towards use of data management plans as part of new research projects, and other approaches, as important instruments to ensure data quality along the whole data life cycle, data preservation and access.
- Development of common interfaces and data standards, including software whenever appropriate.
- Supporting development of plans and approaches for maximizing the accessibility, long-term preservation and reproducibility of research data and

Open Science Policy Platform

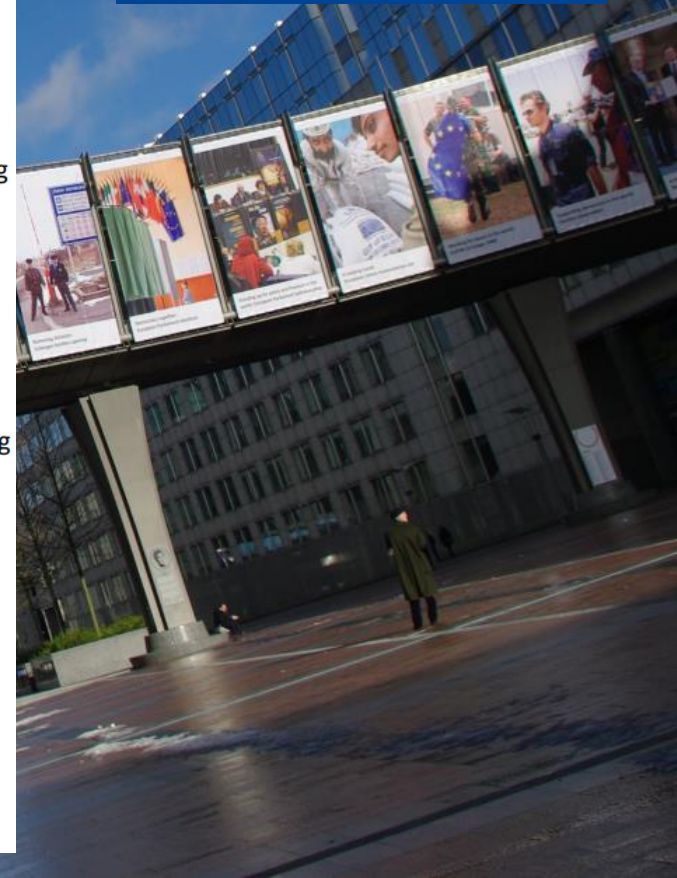
OSPP Combined Recommendations for the Embedding of Open Science

For Other Stakeholder Groups

Universities & Research Performing Organisations must:

March 2, 2018

1. Explore how to incorporate openness (as a behaviour and as a quality of an output) into training and rewards systems. This necessarily involves establishing support in the form of infrastructures and expert advice to researchers; working with research managers and administrators to ensure uptake of open science indicators in performance assessment; and working with the researchers to ensure that they understand how certain practices are valued. It is also essential that there is a way for activity and practices to be 'systematically' captured and assessed where possible.
2. Develop evidence (e.g. from pilot studies) around what works best (and what doesn't) by testing the value of using a broader, tailored range of indicators of research activity, progression and impact to support effective and efficient research and researcher assessment.
3. Establish a culture of assessing what works in research practice and then implement best practice.
4. Include information management experts in evaluation panels, to support career and research assessment decision making.
5. Be transparent about the approaches being used to evaluate research and researchers, adopting the DORA principles.
6. Require standard identifiers for researcher (ORCID), outputs (DOI) and contributions (CRediT)
7. Support advocacy work with researchers at all levels (R1-R4) to ensure a recognition of the benefits of an open science approach and of changing the existing assessment, recognition and reward practices.
8. Build capacity by investing in and training relevant support staff to work alongside research administrators to help researchers deliver Open Science, so as to ensure availability of the right mixture of skills to support its realisation.
9. Find new avenues to support the disruptive interdisciplinarity that can harness the potential knowledge creation capacity of Open Science.



Open Science Policy Platform

2. Recommendations

2.1. General recommendations

In addition to the specific targeted recommendations in the matrix below, we call upon all Member States and stakeholders to:

1. Appoint national coordinators and task forces for the implementation of Open Science. This instrument must foster the development of funded national plans and the alignment of the Open Science policy agenda across all stakeholders involved including Member States to ensure the coordinated action required for tangible change towards an Open Science approach.
2. Ensure the scholarly infrastructure in Europe is highly interoperable to enable the simple and open sharing of metadata between systems, disciplines and countries, and that credit for research contributions is given to all participants (including citizen scientists). This will need all actors to require the use of standardised, unique persistent identifiers for researchers and outputs, and for the acknowledgement of diversity in researcher contributions. Components of the ecosystem (identifiers, metadata, vocabularies, data citations, repositories and other data-infrastructures) need to be developed where necessary, refined, standardized and implemented through dialogue with relevant research communities. Whatever standards/infrastructures are developed, they need to be capable of adapting to innovations in Open Knowledge practices.
3. Ensure the HR Strategy for Researchers (HRS4R) practices and FP9 evaluation reflect the principles required to effectively embed a culture of Open Science at the institutional level. These must involve research integrity (including the social, ethical and legal implications), researcher evaluation and the public availability of research outputs. Codes for Open Science, Research Integrity and Recruitment need to be incorporated into The European Charter for Researchers⁵ and in the FP9 grant agreement. Institutions that apply for the 'Human Resources in Research Award' should be required to demonstrate explicitly how the best practices in Open Science are integrated into their HR processes and strategies.
4. Foster Open Science literacy as essential to European competitiveness at the global level, together with other digital and information competencies. Member States need to secure support for the development of an accredited curriculum for Open Science skills training that fosters Open Science behaviours such as IT and data literacy, from primary school through the whole educational system.
5. Implement a Europe-wide campaign, coordinated by the EC, to raise awareness and communicate the benefits of Open Science among decision makers, research and education bodies, private sector, industrial and citizen organisations.

Open Science Policy Platform

Group that advises the Commission on how to develop open science policy. Meeting reports, member details and background

Apr. 28, 2018

OSPP-REC

Open Science Policy Platform Recommendations

Expert group on the future of scholarly communication



REGISTER OF COMMISSION EXPERT GROUPS and Other Similar Entities

[Expert group](#)

Commission > Register of Commission expert groups and other similar entities > Group Details

Group Details - Commission Expert Group

[Details](#) [Additional Information](#) [Meetings](#) [Subgroups](#) [Statistics](#) [Members](#)

Name: Horizon 2020 expert group on Future of Scholarly Publishing and scholarly Communication (E03463)

Type A - Individual expert appointed in his/her personal capacity

Name	Nationality	Professional Title	Membership Status
Guédon Jean-Claude	Canada		Member
Jubb Michael	United Kingdom		Member
Kramer Bianca	Netherlands		Member
Laakso Mikael	Finland		Member
Schmidt Birgit	Germany		Member
Šimukovič Elena	Lithuania		Member

Type C - Organisation

Name of Organisation	Category	Countries/Areas represented	Membership Status
Bill & Melinda Gates Foundation (BMGF)	Academia, Research Institute and Think Tanks	United States of America	Member
eLife Sciences Publications Ltd (eLife)	Companies/Groups	United Kingdom	Member
Frontiers	Companies/Groups	Switzerland	Member
RELX Group	Companies/Groups	International	Member
Springer Science+Business Media Deutschland GmbH (Springer Nature)	Companies/Groups	Netherlands	Member
Wellcome Trust	Academia, Research Institute and Think Tanks	United Kingdom	Member



EOSC

European Commission

RESEARCH & INNOVATION

European Commission > Research & Innovation > Open Science

Home Open Access European Open Science

European Open Science

EOSC Summit 2017

12 June 2017

Open Science and 7 others Retweeted
Carlos Moedas @Moedas · Jun 12
 Today we move from vision to implementation of the European Open Science Cloud. #EOSC #EOSCSummit #opensciencecloud #openscience #cloud

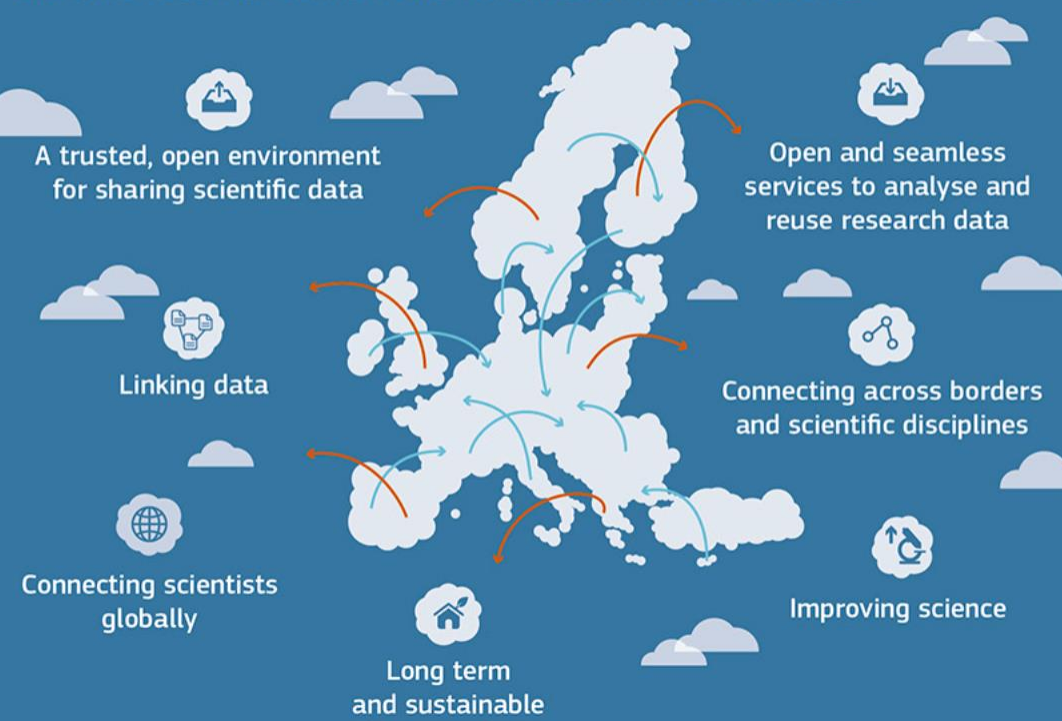


EOSC
from vision
to action



Carlos Moedas
Commissioner for Research, Science and Innovation

BRINGING TOGETHER CURRENT AND FUTURE DATA INFRASTRUCTURES



CLOUD INITIATIVE, WITH ESTIMATED ADDITIONAL PUBLIC AND PRIVATE INVESTMENT OF €4.7 BN REQUIRED TO FURTHER DEVELOP THE EUROPEAN DATA INFRASTRUCTURE.

0.2bn
Widening the user base to the public and private sectors

1bn
EU-wide Quantum technologies flagship

3.5 bn
Data Infrastructure

Establishing a sense of direction is first step for open science cloud

19 DEC 2017

Establishing a sense of direction is first step for open science cloud

Join the Conversation: #EOSC #EOSCFORUM

EOSC STAKEHOLDER FORUM
SHAPING THE FUTURE OF THE EOSC

20 November | 29 November 2017
www.eoscpilot.eu

NEWS & PUBLICATIONS

15 February 2018
THE EUROPEAN SCIENCE CLOUD
A new Scie

24 January 2018
EOSC-HUB: INTEGRATED SCIENCE
EUROPEAN OPEN SCIENCE CLOUD
The EC-funded project EOSC-Hub
1st 2018, bringing together an

12 January 2018
EMPOWERING OPEN SCIENCE

<https://eoscpilot.eu/establishing-sense-direction-first-step-open-science-cloud>

EOSC Declaration

- necessario cambiamento culturale e formazione
- NESSUNA DISCIPLINA, NESSUNA ISTITUZIONE E NESSUN PAESE DEVE ESSERE LASCIATO INDIETRO

Data culture and FAIR data

- **[Data culture]** European science must be grounded in a common culture of data stewardship, so that research data is recognised as a significant output of research and is appropriately curated throughout and after the period conducting the research. Only a considerable cultural change will enable long-term reuse for science and for innovation of data created by research activities: no disciplines, institutions or countries must be left behind.
- **[Open access by-default]** All researchers in Europe must enjoy access to an open-by-default, efficient and cross-disciplinary research data environment supported by FAIR data principles. Open access must be the default setting for all results of publicly funded research in Europe, allowing for proportionate limitations only in duly justified cases of personal data protection, confidentiality, IPR concerns, national security or similar (e.g. 'as open as possible and as closed as necessary').
- **[Skills]** The necessary skills and education in research data management, data stewardship and data science should be provided throughout the EU as part of higher education, the training system and on-the-job best practice in the industry. University associations, research organisations, research libraries and other educational brokers play an important role but they need substantial support from the European Commission and the Member States.

EOSC Declaration

Brunnath, 26 October 2017

European Open Science Cloud
New Research & Innovation Opportunities



Oct. 2017

EOSC Declaration

- necessario il supporto dei data-stewards (stimati: 500.000)
 - VALUTARE
- FAIR diverso da disciplina a disciplina

- [Data stewardship] Researchers need the support of adequately trained data stewards. The European Commission and Member States should invest in the education of data stewards via career programmes delivered by universities, research institutions and other trans-European agents.
- [Rewards and incentives] Rewarding research data sharing is essential. Researchers who make research data open and FAIR for reuse and/or reuse and reproduce data should be rewarded, both in their career assessment and in the evaluation of projects (initial funding, review of performance and impact). This should go hand in hand with other career policies in universities and research institutions (appointments, promotions etc.).
- [FAIR principles] Implementation of the FAIR principles must be pragmatic and technology-neutral, encompassing all four dimensions: findability, accessibility, interoperability and reusability. FAIR principles are neither standards nor practices. The disciplinary sectors must develop their specific notions of FAIR data in a coordinated fashion and determine the desired level of FAIR-ness. FAIR principles should apply not only to research data but also to data-related algorithms, tools, workflows, protocols, services and other kinds of digital research objects.

EOSC Declaration

Brunneth, 26 October 2017

European Open Science Cloud
New Research & Innovation Opportunities



Oct. 2017

EOSC Declaration

- rendere i dati FAIR entro 2020
 - archivi certificati
- DATA MANAGEMENT PLANS SONO IL PILASTRO DI UNA BUONA GESTIONE DEI DATI

- [Implementation & transition to FAIR] Implementation of FAIR principles requires careful prioritisation and orchestration. The FAIR Data Action Plan 2018-2020 is an important collaborative instrument for the embedding of FAIR principles in the first phase of the EOSC. The plan will not necessarily suggest any specific technology, standard or implementation solution. For an even transition of data from different levels of maturity to FAIR, existing activities to make data FAIR (e.g. GO-FAIR) must be complemented by new initiatives that embed FAIR principles in all the phases of data life cycle.
- [Research data repositories] Trusted research data repositories play a fundamental role in modern science. Scientist must be able to find, re-use, deposit and share data via trusted data repositories that implement FAIR data principles and that ensure long-term sustainability of research data across all disciplines. Data repositories must be easy to find and identify, and provide to users full transparency about their services.
- [Data Management Plans] A key element of good data management is a Data Management Plan (DMP); the use of DMPs should become obligatory in all research projects generating or collecting publicly funded research data, based on online tools conforming to common methodologies. Funder and institutional requirements must be aligned and minimum conditions for DMPs must be defined. Researchers' host institutions have a responsibility to oversee and complete the DMPs and hand them over to data repositories.

EOSC Declaration

Brunswick, 26 October 2017

European Open Science Cloud
New Research & Innovation Opportunities



Oct. 2017

EOSC Declaration

- ASPETTI LEGALI SONO CRUCIALI
PER I DATI FAIR

- [Legal aspects] It is essential for the success of EOSC to clarify and address the legal uncertainty of Open Access to research data, as well as the correct legal implementation of the FAIR principles. Legal barriers to access and reusability of research data must be identified and overcome and the underpinning legal framework must be made simpler and more coherent. Conversely, issues of ownership must be addressed, particularly where institutions have created services and resources. All these measures should allow easier integration of research data across different legal frameworks, policy implementation plans and strategies.

Be the first to clip this slide

Open Science check list for repositories

1) Apply the right licence to your repository	5) Data and dataset should be under a CC0 (or a Public Domain Dedication)
2) Don't forget the metadata	6) Require that uploaders choose a licence when they upload their content
3) Apply the right licence also to the content of your repository (not the same thing as point 1)!	7) Suggest which licence should be chosen in order to meet OS requirements (see above)
4) In particular, CC BY 4.0 for works such as papers, articles, monographs, creative images, etc)	8) Explain why what you recommend is the best choice and why other choices are not good but let uploaders choose

Th.Margoni, OSFair Sept. 2017

openMINDED
Open Mindful Access to Knowledge for Europe

EOSC Declaration

Brunswick, 26 October 2017

European Open Science Cloud
New Research & Innovation Opportunities



Oct. 2017

EOSC Declaration

- COSTRUIRE SU QUANTO ESISTE, NON REINVENTARE LA RUOTA
- UNICO PUNTO DI ACCESSO PER GLI UTILIZZATORI
- FORNITURA DI SERVIZI

- **[Legacy]** The EOSC should incentivise the re-use of existing building blocks, state-of-the-art services and solutions delivered by past and ongoing projects, local, national and European, as opposed to subsidizing actions aiming at reinventing the wheel. It should facilitate learning from the past, adopting best practices, tailoring scientific community needs through live use cases and leveraging the network effect.
- **[User needs]** Users should see the EOSC as a one-stop-shop to find, access, and use research data and services from multiple disciplines and platforms. Services and functionalities shall be user driven and determined by clear use cases. Intermediary users and other brokers of end-users' demand – IT departments, umbrella associations, community networks – should assist data scientists and ICT specialists in the identification of key requirements for EOSC services.
- **[Service provision]** Research Data Infrastructures, e-infrastructures and commercial operators will develop and provide services based on user needs, and discontinue provision when not justified by the level of adoption. Services will be offered at highest Technology Readiness Levels (TRLs) and kept future-proof based on a cutting-edge cloud based environment. In order to avoid lock-in by individual service providers, the EOSC should foster fair competition of public, PPP and private providers on clear value propositions of highly professional services.

EOSC Declaration

Brunsch, 26 October 2017

European Open Science Cloud
New Research & Innovation Opportunities



Oct. 2017

EOSC Declaration

- OPEN INNOVATION
- OPEN TO THE WORLD
- CITIZEN SCIENCE

➤ **[Innovation]** The EOSC should create a level playing field for businesses and innovative SMEs to develop, and co-develop with publicly funded institutions, added-value services for researchers. Funding should support the migration of cutting-edge solutions to the EOSC, increasing European added value by fostering innovation.

➤ **[Global aspects]** The EOSC will be European and open to the world, reaching out over time to relevant global research partners. It will increase the global value of open research data and support stakeholder engagement, including researchers and citizens. It will gradually widen the initiative to federated network of infrastructures and nodes from global research partners. The EOSC Stakeholder Forum will have an important role in this sense.

EOSC Declaration

Brunsch, 26 October 2017

European Open Science Cloud
New Research & Innovation Opportunities



Oct. 2017

EOSC Roadmap



EUROPEAN
COMMISSION

March 14, 2018

Brussels, 14.3.2018
SWD(2018) 83 final

COMMISSION STAFF WORKING DOCUMENT

Implementation Roadmap for the European Open Science Cloud

All these sources converge that EOSC requires:

- Strong policy guidance in the initial stage, e.g. **a clear governance framework** for the initiative that makes it predictable; a multi-level and multi-stakeholder governance with clear institutional, executive and advisory roles that empowers the scientific community and evolves with time; the need for long-term public funding for the services needed to enable the integration of and access to the data resources to be federated in the EOSC;
- The definition of **the initial services** that are needed to gather and organise FAIR research data and data-related research products, to be available via a service platform;
- **A clear business model** for research data repositories and networks that mixes sources of revenue for long-term sustainability;
- **The facilitation of access and re-use;**
- **Cost optimisation** (e.g. reduction of duplication, etc.) to be sought via synergies.

EOSC Roadmap

Figure 1 – EOSC Model action lines

Architecture	Architecture of the federated infrastructures as the solution to the current fragmentation in research data infrastructures which are insufficiently interoperable.
Data	FAIR data management and tools. A common data language to ensure data stewardship across borders/disciplines based on FAIR principles.
Services	Available services from a user perspective. A rich environment offering a wide range of services covering the needs of the users.
Access & Interface	Mechanisms/interfaces for accessing EOSC. A simple way for dealing with open data obligations or accessing research data across different disciplines.
Rules	Rules of participation for different EOSC actors. An opportunity to comply with existing legal and technical frameworks and increase legal certainty & trust.
Governance	Governance of the EOSC, aiming at ensuring EU leadership in data-driven science but requiring new governance frameworks.

EOSC Roadmap

The timeline below shows how resources of Horizon 2020 would serve this particular action line.

Starting from	Committed resources (non-exhaustive)	Action	Milestones
2018, Q1	<ul style="list-style-type: none"> EOSC -hub project OpenAIRE-Advance project FREYA project 	Develop initial EOSC federating core including the EOSC shared resources	Q4 2019: Initial EOSC federating core in place
2019, Q1	<ul style="list-style-type: none"> EOSCpilot project INFRASUPP-01-2018-2019 (b3)	Develop catalogue of interested and eligible (per Rules of Participation) data infrastructures to be federated into the EOSC and identify EOSC federate centres	Q4 2019: Registry of data infrastructures of the EOSC (initial)
2018, Q4	<ul style="list-style-type: none"> INFRAEOSC-04-2018 	Connection the research infrastructures identified in the ESFRI Roadmap to the EOSC. Support to this activity will be provided through cluster projects.	Q2 2020: Preliminary connection of most infrastructures and services to the EOSC

In addition to directly supporting the federation of ESFRI projects in the EOSC (INFRAEOSC-04-2018), WP 2018-2020 of Horizon 2020 funds specific actions in scientific areas with a tradition of research data sharing and services like transport, food, marine, health and earth-observation; this ensures that the EOSC is fully inclusive.

(b) Data

It emerged clearly from the consultation - notably from the *EOSC Summit* and from the *EOSC Declaration* - that further measures would be needed to foster the development of professional practices of research data management and stewardship in Europe, specifically:

1. to develop a better culture of research data management and practical skills among EU scientists and innovators, including action on incentives, rewards, skills and curricula related to research data and data science;⁵¹
2. to develop FAIR data tools, specifications, catalogues and standards, and supply-side services to support scientists and innovators, and
3. to stimulate the demand for FAIR data through consistent FAIR data mandates and incentives to open data by research funders and institutions across Europe.

EOSC Roadmap

These services are:

1. A unique identification and authentication service and an access point and routing system towards the resources of the EOSC.
2. A protected and personalised work environment/space (e.g. logbook, settings, compliance record and pending issues).
3. Access to relevant service information (status of the EOSC, list of federated data infrastructures, policy-related information, description of the compliance framework) and to specific guidelines (how to make data FAIR, to certify a repository or service, to procure joint services).
4. Services to find, access, re-use and analyse research data generated by others, accessible through appropriate catalogues of datasets and data services (e.g. analytics, fusion, mining, processing).
5. Services to make their own data FAIR, to store them and ensure long-term preservation.

Starting from	Committed resources (non-exhaustive)	Action	Milestones
2018, Q2	<ul style="list-style-type: none"> • EOSC-hub project • eInfraCentral project • OpenAIRE-Advance project • INFRAEOSC-01-2018 • INFRAEOSC-04-2018 • INFRAEOSC-05-2018-2019 (b) • INFRAEOSC-02-2019 • INFRAEOSC-03-2020 • INFRAEOSC-06-2019-2020 (a) • INFRAEOSC-06-2019-2020 (b) 	Develop initial catalogue of services to be provided via the EOSC (to be enriched periodically) and define delivery model(s)	Q4 2018: Initial EOSC Catalogue of services accessible & prototype EOSC Portal accessible Q4 2019: Updated EOSC Catalogue of services & EOSC Portal
2018, Q2	<ul style="list-style-type: none"> • EOSCpilot project • EOSC-hub project • INFRAEOSC-04-2018 • INFRAEOSC-05-2018-2019 (b) 	Develop initial catalogue of datasets accessible via the EOSC (to be enriched periodically)	Q2 2019: Initial EOSC Catalogue of datasets accessible.

EOSC Roadmap

Table 2. Overview of the implementation Roadmap

Starting	Action line	Milestones	Annex 3 - Work Programme Research Infrastructures (including e-Infrastructures) 2018-2020 – EOSC relevant topics					Area	
2018, Q1	Develop initial EOSC federating core including the EOSC shared resources	Q4 2019: Initial EC	research Infrastructures (including e-Infrastructures) 2018-2020						architecture
2019, Q1	Develop catalogue of interested and eligible (per Rules of Participation) data infrastructures to be federated into the EOSC	Q4 2019: Registry							architecture
2018, Q4	Connect the research infrastructures identified in the ESFRI Roadmap to the EOSC	Q2 2020: Preliminary the EOSC							architecture
2018, Q1	Prepare a FAIR data Action Plan	Q3 2018: FAIR data							FAIR data
2018, Q3	Define a European framework for FAIR research data	Q2 2019: European							FAIR data
2019, Q1	Define a Persistent Unique Identifier policy for FAIR data	Q4 2019: FAIR per							FAIR data
2019, Q1	Develop a FAIR data accreditation /certification scheme for repositories	Q4 2019: FAIR cer							FAIR data
2018, Q2	Develop initial catalogue of services to be provided via the EOSC (to be enriched periodically) and define delivery model(s)	Q4 2018: Initial EC EOSC Portal access Q4 2019: Updated							services
2018, Q2	Develop initial catalogue of datasets accessible via the EOSC (to be enriched periodically)	Q2 2019: Initial EC							services
2018, Q1	Set up the EOSC governance framework in consultation with MS	Q4 2018: EOSC G							governance
2019, Q1	Prepare legacy for 2 nd implementation phase (post 2020)	Q3 2020: Recommended organisational setting							governance
2018, Q2	Develop Rules of Participation in consultation with stakeholders	Q1 2019: Initial EC Q4 2019: Final EO							rules of participation
					TOPIC	Title	Type of Action	Open Date	Deadline
				INFRAEOSC-01-2018	Access to commercial services through the EOSC hub	RIA	05/12/17	22/03/18	€12m
				INFRAEOSC-02-2019	Prototyping new innovative services	RIA	16/10/18	29/01/19	€28.5m
				INFRAEOSC-03-2020	Integration and consolidation of pan-European access mechanisms to public e-infrastructures and commercial services through the EOSC hub	RIA	tbd	tbd	€79m
				INFRAEOSC-04-2018	Connecting ESFRI Infrastructures through cluster projects	RIA	05/12/17	22/03/18	€95m
				INFRAEOSC-05-2018-2019	Support to the EOSC governance (a) Setup of an EOSC coordination structure	CSA	10/01/18	19/04/18	€10m
					(b) Coordination of EOSC-relevant national initiatives across Europe and support to prospective EOSC service providers	RIA	26/07/18	21/11/18	€ 30m
					(c) FAIR data uptake and compliance in all scientific communities	CSA	10/01/18	19/04/18	€10m
					Enhancing the EOSC portal and connecting thematic clouds	RIA	14/11/18	20/03/19	€2m
				• INFRAEOSC-05-2018-2019 (a)					

EOSC Summit 11 giugno 2018

Presentations (EOSC Summit)

June 11, 2018

- [EOSC HLEG recommendations](#)
- [FAIR Data EG recommendations](#)
- [Progress towards EOSC \(services, architecture, access, rules, data\)](#)
- [EOSC in practice \(commitments, plans and stories of stakeholders\)](#)
- [Information about upcoming AT Presidency](#)

Presentations (Workshop on Rules of Participation)

- [Main findings of the EOSC HLEG Interim Report](#)
- [Panel discussion EOSC Business models](#)
- [Panel discussion Rules of Participation](#)
- [EOSC Pilot Considerations on the Rules of Participation](#)

Documents

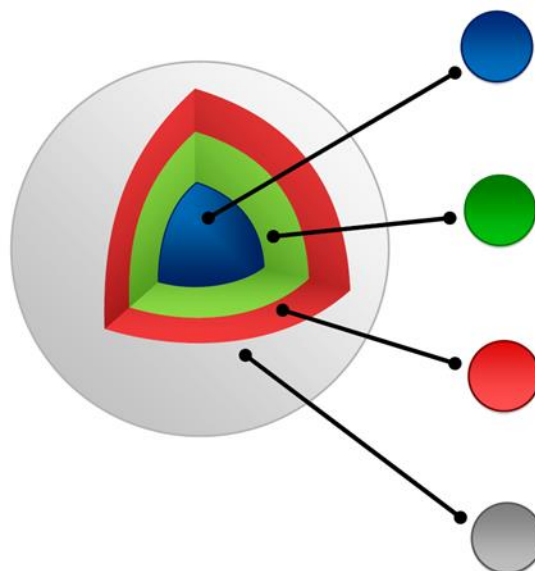
- [Agenda of the Workshop on Rules of Participation](#)
 1. [Recommendations of the EOSC HLEG](#)
 2. [Prompting an EOSC in practice: draft interim report of the EOSC high level expert group](#)
- [Agenda of the Workshop on Implementing the FAIR data action plan](#)
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FAIR Data Action Plan

Interim recommendations and actions from the European Commission Expert Group on FAIR data

June 2018

<https://doi.org/10.5281/zenodo.1285289>



DATA

The core bits

At its most basic level, data is a bitstream or binary sequence. For data to have meaning and to be FAIR, it needs to be represented in standard formats and be accompanied by Persistent Identifiers (PIDs), metadata and code. These layers of meaning enrich the data and enable reuse.

IDENTIFIERS

Persistent and unique (PIDs)

Data should be assigned a unique and persistent identifier such as a DOI or URN. This enables stable links to the object and supports citation and reuse to be tracked. Identifiers should also be applied to other related concepts such as the data authors (ORCIDs), projects (RAIDs), funders and associated research resources (RRIDs).

STANDARDS & CODE

Open, documented formats

Data should be represented in common and ideally open file formats. This enables others to reuse the data as the format is in widespread use and software is available to read the files. Open and well-documented formats are easier to preserve. Data also need to be accompanied by the code used to process and analyse the data.

METADATA

Contextual documentation

In order for data to be assessable and reusable, it should be accompanied by sufficient metadata and documentation. Basic metadata will enable data discovery, but much richer information and provenance is required to understand how, why, when and by whom the data were created. To

Rec. 3: A model for FAIR Data Objects

Implementing FAIR requires a model for FAIR Data Objects which by definition have a PID linked to different types of essential metadata, including provenance and licencing. The use of community standards and sharing of code is also fundamental for interoperability and reuse.

- Universal use of appropriate PIDs needs to be facilitated and implemented.
Stakeholders: Data services; Institutions; Publishers; Funders.
- Educational programmes and tools are needed to raise awareness, understanding and use of relevant standards and routine capture of metadata during the research process.
Stakeholders: Data stewards; Institutions; Data services.
- Systems must be put in place for automatic checks on the existence and accessibility of PIDs, metadata, a licence or waiver, and code, and to test the validity of the links between them.
Stakeholders: Data services; Standards bodies.

EOSC Summit 11 giugno 2018

Presentations (EOSC Summit)

June 11, 2018

- [EOSC HLEG recommendations](#)
- [FAIR Data EG recommendations](#)
- [Progress towards EOSC \(services, architecture, access, rules, data\)](#)
- [EOSC in practice \(commitments, plans and stories of stakeholders\)](#)
- [Information about upcoming AT Presidency](#)

Presentations (Workshop on Rules of Participation)

- [Main findings of the EOSC HLEG Interim Report](#)
- [Panel discussion EOSC Business models](#)
- [Panel discussion Rules of Participation](#)
- [EOSC Pilot Considerations on the Rules of Participation](#)

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Section 1: Concepts – why FAIR?

The data landscape and need for FAIR

Origins and definitions of FAIR

Figure 1: DOBES case study: how some disciplines converged on similar principles to FAIR

Figure 2: The FAIR guiding principles

Exploration and discussion of FAIR

Figure 3: Zika case study: addressing public health emergencies with timely data sharing

Legal and ethical dimensions to maximise the availability of FAIR data

Towards an ecosystem of FAIR data and services

Research culture and FAIR data

Data sharing practices

Developing disciplinary interoperability frameworks for FAIR sharing

Turning FAIR data into reality

Interim report from the European Commission Expert Group on FAIR data

June 2018

<https://doi.org/10.5281/zenodo.1285271>

Building EOSC



EOSCpilot.eu @eoscipilot · 20 feb

Service Providers are the heart of #EOSC's value proposition. The European #OpenScience #Cloud can take part either as builders or providers. Learn more here: eoscipilot.eu/pilots/service... #H2020 #DigitalSingleMarket

Traduci dalla lingua originale: inglese



<https://twitter.com/eoscipilot/status/9659831>



EOSCpilot.eu @eoscipilot · 44 min

#Research producing organisations, academic institutions will be the core users of the European #OpenScience Cloud. Learn more about how we help them here: eoscipilot.eu/

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<https://twitter.com/eoscipilot/status/966602251002368000>



EOSCpilot.eu @eoscipilot · 4 min

The European #OpenScience #Cloud isn't just for #Enterprise, #startups and the private sector. The #EOSC! Learn more here: eoscipilot.eu/ #entrepreneurship #H2020

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<https://twitter.com/eoscipilot/status/966602251002368000>



EOSCpilot.eu @eoscipilot · 12 min

One of #EOSCpilot's #science demonstrators covers high energy #physics. The goal is to use non-discipline specific services combined in a simply & transparently to build a system capable of storing and preserving #OpenData at 100TB+: [eoscipilot.eu/science-demos/...](https://eoscipilot.eu/science-demos/)

Traduci dalla lingua originale: inglese



<https://twitter.com/eoscipilot/status/966697865639809027>



Trust-IT Services @TrustITServices · 2 h

.@silvanamuscella, chair of the #EOSC HLEG, interviewed by .@ReteGARR on the importance of building an EOSC in practice by the end of 2018, taking into account #GDPR #FAIR & trust

Traduci dalla lingua originale: inglese

<https://youtu.be/U667-ijqnn8E>



Intervista a Silvana Muscella, High Level Expert Group di EOSC

Le Infrastrutture di ricerca (IR) hanno ormai assunto un ruolo di primo pian...

<https://twitter.com/eoscipilot/status/966648807617425410>

Building EOSC

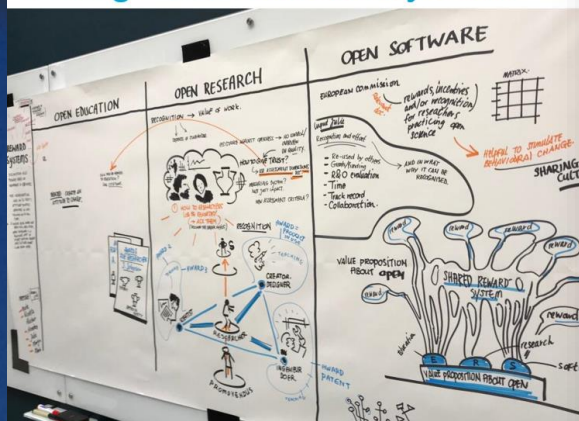
How could research institutions contribute to EOSC?

M.Teperek, Feb. 19 2018

Why research institutions are key players in EOSC development?



TU Delft - working group to change the rewards system



The sketch will be available at:
<https://opensketching.weblog.tudelft.nl/>

Copyright: Mark van H

- formazione/data skills
- un data steward in ogni facoltà
- modifiche al sistema di valutazione
 - comunicazione a due vie:
 - ✓ Far conoscere EOSC
- ✓ Includere in EOSC ogni disciplina

TU Delft - frontrunner at embedding Data Stewardship across the campus

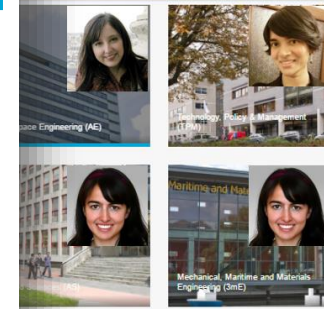
Need for a two way communication

- If institutions are unclear about EOSC, how can they successfully act as intermediaries?
 - Will researchers know what it is?
 - Will researchers know what it can do?
- Will EOSC be inclusive of the variety of research disciplines?
 - Valuable research is not only big data research
 - Data skills are more than data science



Conference, 19 February 2018

ward at every Faculty



GO FAIR



<https://www.go-fair.org/> News Co
GO FAIR Initiative Implementation Networks FAIR Principles Technology Training Certif

GO FAIR: a bottom-up international approach

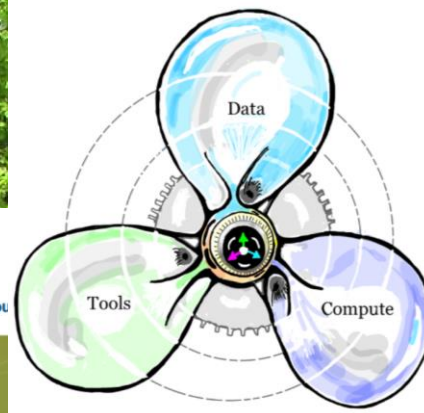
for the practical implementation of the European Open Science Cloud (EOSC) as part of a global Internet of FAIR Data & Services



GO FAIR Initiative Implementation Networks Co

The Internet of FAIR Data & Services

The Internet of FAIR data and Servi



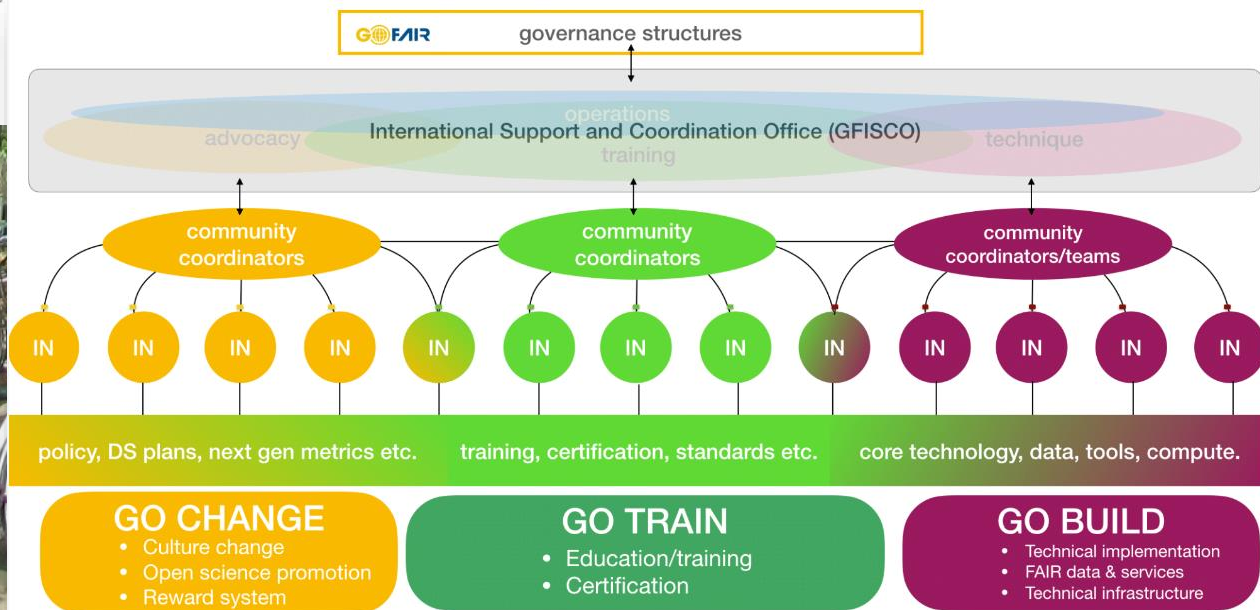
Vision

Fostering the coherent development of the global Internet of FAIR Data & Services (IFDS), with the main focus on early developments in the European Open Science Cloud (EOSC).

[LEARN MORE](#)

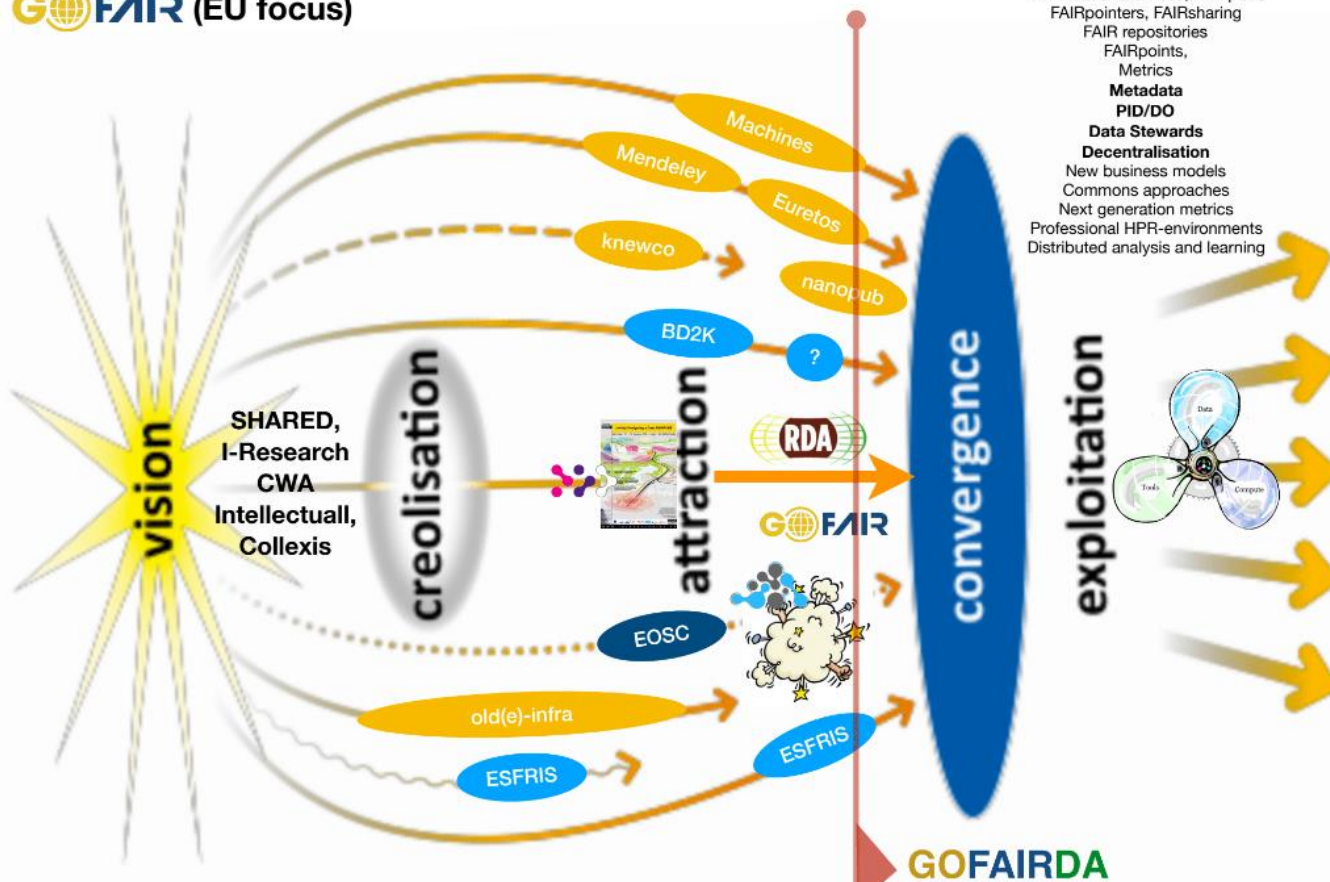
Strategy

GO FAIR follows a bottom-up implementation strategy for the



GO FAIR

GO FAIR (EU focus)



Courtesy Wittenburg and Strawn 2018

2000

Slide courtesy of Barend Mons, Apr. 2018

2020

GO FAIR

What is an Implementation Network ?

A GO FAIR Implementation Network (IN) is a consortium committed to defining and creating materials and tools as elements of the **Internet of FAIR Data and Services (IFDS)**.

What does an Implementation Network do ?

- Have clearly defined plans and deliverables to implement an element of the Internet of FAIR Data and Services in a finite time.
- Have adequate resources to accomplish their proposed goals.
- Foster a collaborative community of harmonized practice.
- Speak with one voice on a number of critical issues that are of generic importance and on which consensus has been reached.

Who can join an Implementation Network ?

Any person, an institution, or an existing network organisation) can join an IN. They must have a demonstrable interest and contribution, and be willing to comply with the **Rules of Engagement**.

There are **three phases** in becoming an Implementation Network:



• Preparatory Implementation Network

1. A group of people with a common interest form a consortium with the goal to contribute to the IFDS
2. All participants of the consortium read and agree with the GO FAIR **Rules of Engagement**.
3. The group selects a consortium coordinator.
4. The consortium coordinator fills out the **GO FAIR Implementation Network Application form** and contacts the GFISCO.
5. The application will be received by GFISCO and a representative from the GO FAIR pillar that is more closely related to the activities of the proposed Implementation

Rules of Engagement

(to be signed by all participants of implementation networks)

To join a GO FAIR Implementation Network, **each partner should:**

Answer to the FAIR Data Principles: The GO FAIR implementation plan for the IFDS as a whole will answer to the FAIR Guiding Principles. This means that data resources, services, and training materials will be developed according to these principles and will be adorned with rich, machine-readable metadata, and that they will thus be Findable, Accessible, Interoperable, and Reusable under well defined conditions, by machines and humans.

Abide by the Governance Principles: A GO FAIR partner should formally acknowledge and endorse the General Governance Principles of the GO FAIR initiative.

Accept to be stakeholder-governed: The GO FAIR implementation approach for the IFDS is stakeholder-governed. A self-coordinating, board-governed organisation drawn from the stakeholder Implementation Network community creates trust that the organisation will take decisions driven by community consensus, considering different interests.

Accept non-discriminatory membership: When willing to sign the Rules of Engagement, any stakeholder may express an interest in and should be welcome to join GO FAIR.

Conduct transparent operations: Achieving trust in the selection of representatives in governance groups will be best achieved through transparent processes and operations in general (within the constraints of privacy laws).

Not abuse its trusted provider or GO FAIR status for undue lobbying for its own services, especially with the aim to monopolise critical components of the IFDS.

[clouds on the Cloud???

