



OPEN SCIENCE DALLA A ALLA Z

3-COSA SUCCEDE IN EUROPA

Elena Giglia

Elena Giglia

Perugia, 27 febbraio 2020

elena.giglia@unito.it



@egiglia



Impareremo in questo modulo

1. l'Europa supporta l'Open Science più di quanto crediamo/sappiamo
2. tutto su EOSC

Messaggi chiave:

- EOSC è qui: non perdiamo questa occasione!

Openness

...nuova
Commissaria
Marjia Gabriel



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

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.**



«make science fit for the 21th century»

Transition to open science is a multidimensional and multistage process. There is value and risk of being a first mover, but there is higher risk of being a follower. The European Comm

PERSPECTIVE ARTICLE [Provisionally accepted](#) [The full-text will be published soon.](#) [Notify me](#)
Front. Big Data | doi: 10.3389/fdata.2019.00043

[Nov.2019]

Open science, open data and open scholarship: European policies to make science fit for the 21st century

Jean-Claude Burgelman^{1*}, Corina Pascu^{2*}, Katarzyna Szkuta³, Rene Von Schomberg⁴, Athanasios Karalopoulos⁵, Konstantinos Repanas⁵ and Michel Schouppe¹

Open science will make science more efficient, reliable, and responsive to societal challenges. The European Commission

Open science (or in fact, open scholarship) has shifted the prime focus of researchers away from publishing toward knowledge sharing.

and access will be maximized. In Horizon Europe, research data will be open by default while taking into account the need to balance openness and protection of scientific information, commercialization and Intellectual Property Rights, privacy concerns and security, following the principle “as open as possible, as closed as necessary.” Data management plans (DMP) will become mandatory, even if not making research data open. The requirement for responsible data management will be separated from the requirement for providing open access to research data. Emphasis will be placed on supporting as much as possible the proliferation of data that are findable, accessible, interoperable, and re-usable (FAIR). Finally, the use of trusted or certified repositories and infrastructures like the European Open Science Cloud (EOSC) will be required for research data in some Horizon Europe work programs.

Changing the reward and incentive system for researchers is a key open science challenge and a broader issue for which primarily the responsibility lies in the scientific community (universities and funders). This includes making open science practices rewardable and fundable as well as the employment of specific indicators for researchers' engagement with open science. A change of the reward and incentive system can only be stakeholders-driven, and it has to be bottom-up. This change also includes changing mind-sets of researchers to open up and share data and “seduction” to make open science easy, useful, and affordable³.

The European Open Science agenda contain the ambition to make FAIR data sharing the default for scientific research by 2020. To

... «core strategy»...

HORIZON 2020

Horizon 2020



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How to
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Projects

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Framework

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Open Science (Open Access)

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 promotes knowledge sharing by providing infrastructures. Facilitating

making research findings available free of charge. 'Open access', has been a core strategy in the to improve knowledge circulation and thus is motivated in particular by the general principle for open 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 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

in research systems and disciplines, and that open access to scientific publications should be

Brussels, 27 May 2016
(OR. en)

9526/16

RECH 208
TELECOM 100

the principle that no researcher should be prevented from
mission, Member States and relevant stakeholders, including
to catalyse this transition; and STRESSES the importance of
reements.

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)



European Council
Council of the European Union

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Council of the EU

Competitiveness Council, 26-27/05/2016

- [Council 26-27 May 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.

... 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

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



Missions in Horizon Europe

Horizon Europe will incorporate research and innovation missions to increase the effectiveness of funding by pursuing clearly defined targets.

The Commission has engaged policy experts to develop studies, case studies and reports on how a mission-oriented policy approach will work.

[Read more about the Commission's mission-oriented approach and download the studies that shaped it](#)

Mission areas

5 mission areas have been identified, each with a dedicated mission board and assembly. They will help specify, design and implement specific missions in Horizon Europe.

[Mission area: Adaptation to climate change including societal transformation](#)

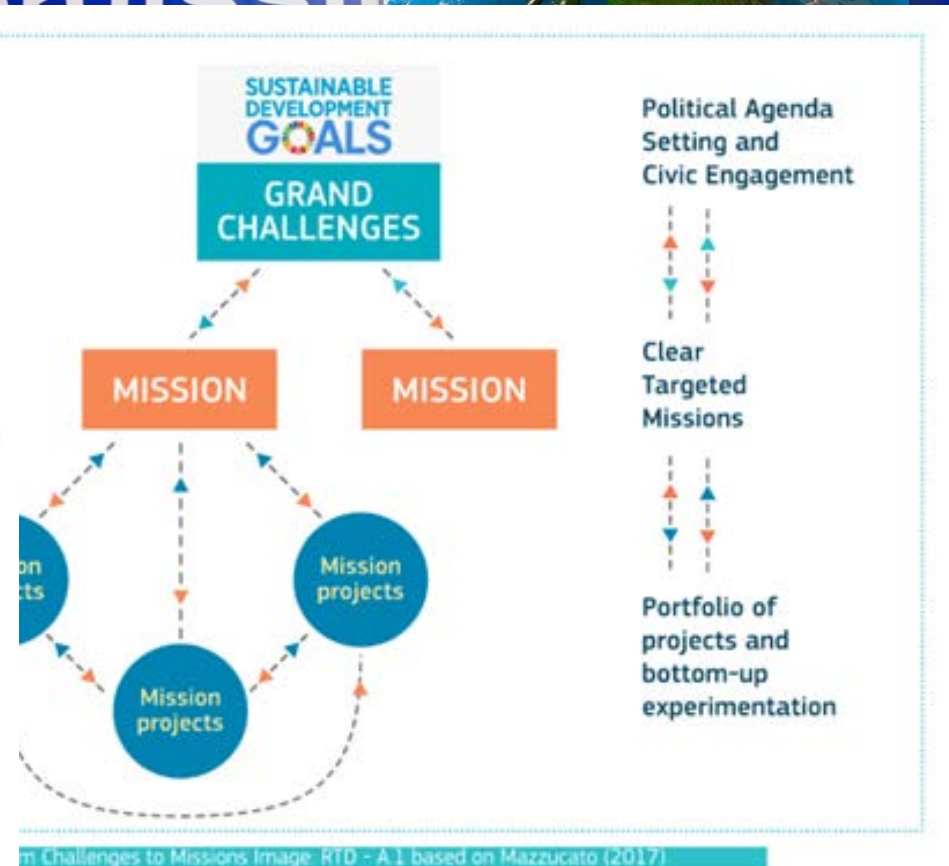
[Mission area: Cancer](#)

[Mission area: Climate-neutral and smart cities](#)

[Mission area: Healthy oceans, seas, coastal and inland waters](#)

[Mission area: Soil health and food](#)

Horizon Europe



... Horizon Europe



https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme_en

Recommendation on Access (2018)



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

... [PSI] Open Data directive...

(27) The volume of research data generated is growing exponentially and has potential for re-use beyond the scientific community. In order to be able to address mounting societal challenges efficiently and in a holistic manner, it has become crucial and urgent to be able to access, blend and re-use data from different sources, as well as across sectors and disciplines. Research data includes statistics, results of experiments, measurements, observations resulting from fieldwork, survey results, interview recordings and images. It also includes meta-data, specifications and other digital objects. Research data is different from scientific articles reporting and commenting on findings resulting from their scientific research. For many years, the open availability and re-usability of scientific research data stemming from public funding has been subject to specific policy initiatives. Open access is understood as the practice of providing online access to research outputs free of charge for the end user and without restrictions on use and re-use beyond the possibility to require acknowledgement of authorship. Open access policies aim in particular to provide researchers and the public at large with access to research data as early as possible in the dissemination process and to facilitate its use and re-use. Open access helps enhance quality, reduce the need for unnecessary duplication of research, speed up scientific progress, combat scientific fraud, and it can overall favour economic growth and innovation. Beside open access, commendable efforts are being made to ensure that data management planning becomes a standard scientific practice and to support the dissemination of research data that are findable, accessible, interoperable and re-usable (the FAIR principle).

DATI DELLA RICERCA
ASSIMILATI A DATI DEL
SETTORE PUBBLICO...
QUINDI OPEN!

(28) For the reasons explained above, it is appropriate to set an obligation on Member States to adopt open access policies with respect to publicly funded research data and ensure that such policies are implemented by all research performing organisations and research funding organisations. Research performing organisations and research funding organisations could also be organised as public sector bodies or public undertakings. This Directive applies to such hybrid organisations only in their capacity as research performing organisations and to their research data. Open access policies typically allow for a range of exceptions from making scientific research results openly available. The Commission Recommendation of 25 April 2018 on access to and preservation of scientific information describes, among other things, relevant elements of open access policies. Additionally, the conditions, under which certain research data can be re-used, should be improved. For that reason, certain obligations stemming from this Directive should be extended to research data resulting from scientific research activities subsidised by public funding or co-funded by public and private-sector entities. Under the national open access policies, publicly funded research data should be made open as the default option. However, in this

DIRECTIVE (EU) 2019/1024 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 20 June 2019

on open data and the re-use of public sector information

(recast)

Open Access in 2020

IMMAGINATE SE I MILIARDI SPESI IN
ABBONAMENTI POTESSERO ESSERE
DESTINATI ALLA RICERCA...



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



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

March 23, 2018 by Joanne Roberts

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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 the EU's special envoy on open access, tasked with helping make all publicly funded research in Europe freely available by 2020.

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

...il 4 settembre 2018 esce PlanS

cOAlition S
Making
Open Access
a reality
by 2020

A DECLARATION OF COMMITMENT
BY PUBLIC RESEARCH FUNDERS

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

RIVISTO A MAGGIO 2019
INIZIO POSTICIPATO AL 2021

Plan S Sept. 4, 2018

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

DOAJ DIRECTORY OF
OPEN ACCESS
JOURNALS

3.846 SU 14.305
JOURNALS CON APCs
27%

PLAN S

- NON SIGNIFICA PAGARE PER PUBBLICARE
- RICHIEDE MODIFICA DEI CRITERI DI VALUTAZIONE

- AUTORI MANTENGONO IL COPYRIGHT (LICENZE CC BY)
 - RIVISTE **IBRIDE NON SONO AMMESSE**
 - **SE (E SOTTOLINEO SE)** CI SONO APC, VENGONO PAGATE DALLE ISTITUZIONI
 - LE APC HANNO UN TETTO
- [VANNO MODIFICATI I CRITERI DI VALUTAZIONE]

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)

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.

Per supportare Open Science

Feb.4, 2019

Future of Scholarly Publishing and Scholarly Communication

Report of the Expert Group to the European Commission

Apr. 25, 2018

Mutual Learning Exercise

Open Science: Altmetrics and Rewards

Horizon 2020 Policy Support Facility

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

Open Science Skills Working Group Report

Report, Sept.2017

The conclusion is actually simple: the evaluation of research is the keystone, and it has already been identified by scholars around the world, and by various expert groups within

- Rewards and Incentives
- Research Indicators and Next-Generation Metrics
- Future of Scholarly Communication
- European Open Science Cloud
- FAIR Data
- Research Integrity
- Skills and Education
- Citizen Science

Integrated advice of the Open Science Policy Platform on

8 prioritised Open Science ambitions

May 29, 2018

Next-generation metrics: Responsible metrics and evaluation for open science

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

...OpenAIRE



National Open Access Desks (NOADs)

Facts

- Research is global, support is local
- Diversity in culture & maturity of national/local infras
- Not one size fits all in OA and open science



Our pan-European network

→ 34 countries

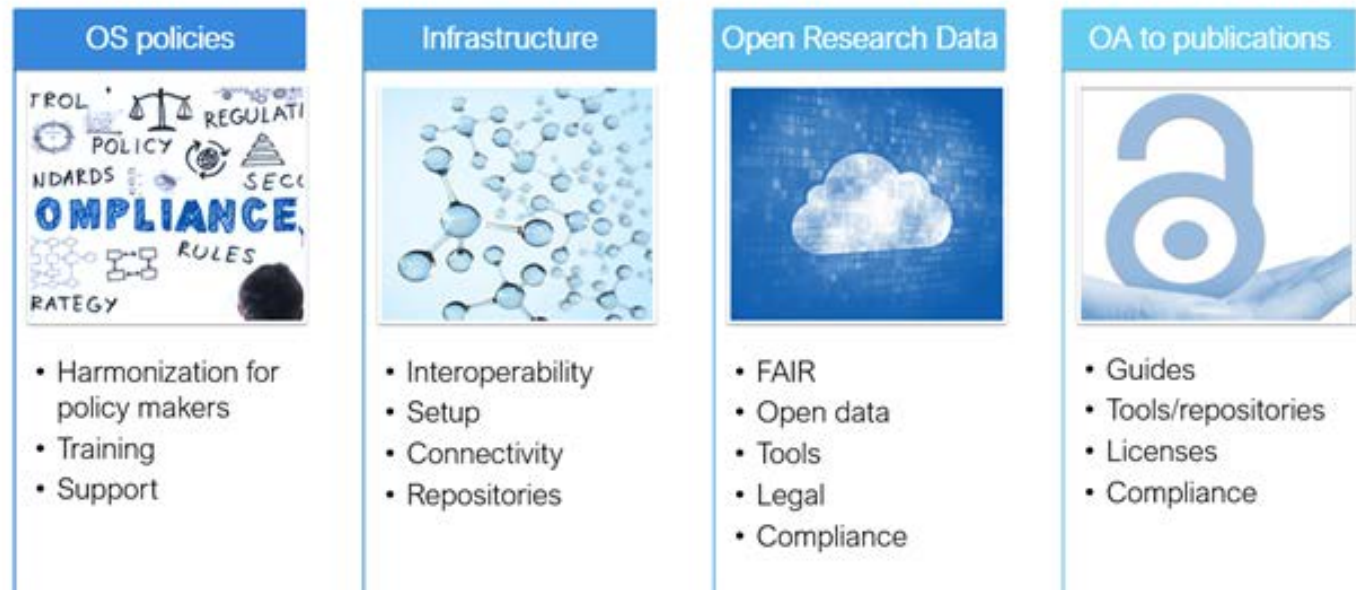
Key national organizations

→ 4 area coordinators

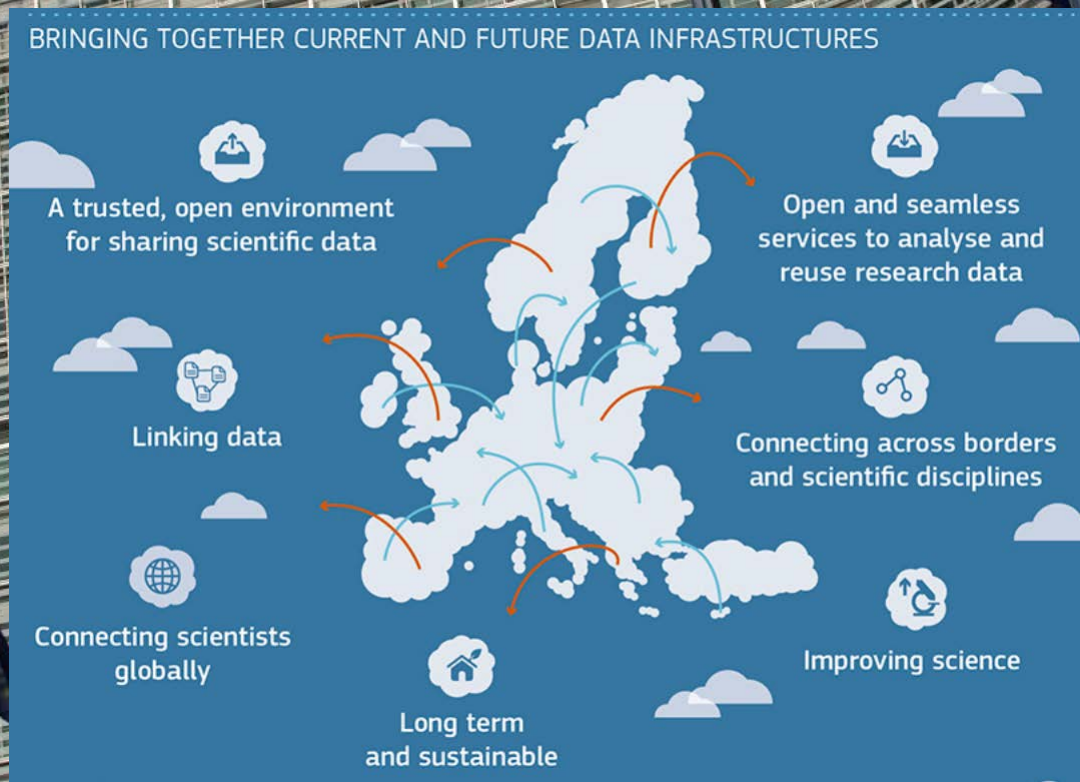
Moving to OS

Linked to infras around the world

What we support



EOSC – European Open Science Cloud



[EOSC – cosa?]

AMBIENTE VIRTUALE IN CUI
PRODUTTORI DI DATI,
PRODUTTORI DI SERVIZI E
INNOVATORI SI
INCONTRANO



THE EUROPEAN OPEN SCIENCE CLOUD? SOME NUANCES AND DEFINITIONS

Imagine a federated, globally accessible environment where researchers, innovators, companies and citizens can publish, find and re-use each other's data and tools for research, innovation and educational purposes. Imagine that this all operates under well-defined and trusted conditions, supported by a sustainable and just value for money model. This is the environment that must be fostered in Europe and beyond to ensure that European research and innovation contributes in full to knowledge creation, meet global challenges and fuel economic prosperity in Europe. This we believe encapsulates the concept of the European Open Science Cloud (EOSC), and indeed such a federated European endeavour is a key element of the FAIR Data and services.

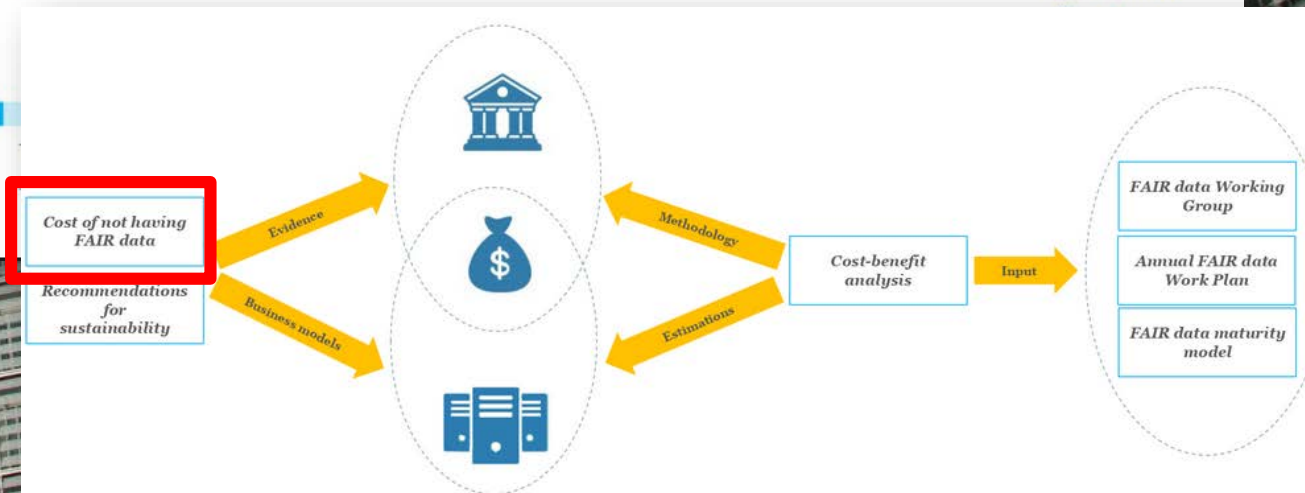
**NON È OPEN CLOUD PER LA SCIENZA MA AMBIENTE PER
FAVORIRE LA OPEN SCIENCE**

The European Open Science Cloud is a supporting environment for Open Science and not an 'open Cloud' for science.

The EOSC aims to accelerate the transition to more effective Open Science and Open Innovation in a Digital Single Market by removing the technical, legislative and human barriers to the re-use of research data and tools, and by supporting access to services, systems and the flow of data across disciplinary, social and geographical borders. The term European Open Science Cloud requires some reflection to dispel incorrect associations and clarify boundaries; in fact the term 'cloud' is a metaphor to help convey the idea of seamlessness and a commons.

EOSC – European Open Science Cloud

EC proposal for FAIR building blocks



Slide courtesy of Jean Claude Burgelman

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

Brescia, 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

Bonn, 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

Bonn, 26 October 2017

European Open Science Cloud
New Research & Innovation Opportunities



Oct. 2017

...E FINALMENTE, BENVENUTA EOSC!

The Vienna Declaration on the European Open Science Cloud

Vienna, 23 November 2018

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Vienna, Nov.23, 2018

We, Ministers, delegates and other participants attending the launch event of the European Open Science Cloud (EOSC):

- 1. Recall** the challenges of data driven research in pursuing excellent science as stated in the “EOSC Declaration” signed in Brussels on 10 July 2017.
- 2. Reaffirm** the potential of the European Open Science Cloud to transform the research landscape in Europe. Confirm that the vision of the European Open Science Cloud is that of a research data commons, inclusive of all disciplines and Member States, sustainable in the long-term.
- 3. Recognise** that the implementation of the European Open Science Cloud is a process, not a project, by its nature iterative and based on constant learning and mutual alignment. Highlight the need for continuous dialogue to build trust and consensus among scientists, researchers, funders, users and service providers.
- 4. Highlight** that Europe is well placed to take a global leadership position in the development and application of cloud services for Science. Reaching out over time to and open to the world,
- 5. Recall** that the Council

ACCESSO TRASPARENTE A DATI FAIR
APERTI DI DEFAULT

9. Call for the European Open Science Cloud to provide all researchers in Europe with seamless access to an open-by-default, efficient and cross-disciplinary environment for storing, accessing, reusing and processing research data supported by FAIR data principles.

6. Note that the 2018 EOSC Summit (held on 11 June 2018) called for acceleration towards making the European Open Science Cloud a reality, hinting at the need to further strengthen the ongoing dialogue across institutions and with stakeholders, for a new governance framework to be launched in Vienna, on 23 November 2018.

EOSC per voi

 **EOSCsecretariat.eu** <https://www.eoscsecretariat.eu/>  LOGIN WITH ACADEMIC/SOC

EOSC GOVERNANCE  WORKING GROUPS  FUNDING OPPORTUNITIES  LIAISON PLATFORM  INTEREST GROUPS 

ABOUT 

Funding Opportunities

Do you have an idea that will help co-create the EOSC? Take the chance to get funding for your activity!

Submit Study Suggestion Form

Submit a Co-Creation Idea or Project

Open Calls

Aug. 2019

European Open Science Cloud (EOSC) Work Plan 2019-2020

This work plan, produced by the EOSC Executive Board, outlines activities from mid-2019 until the end of 2020.

EOSC Executive Board
August 2019

	Landscape (Jan Mrusak)	Sustainability (Rupert Lueck)	Architecture (JF Abramatic)	FAIR (Sarah Jones)	Rules of Participation (Juan Bicarregui)	EB/GB Comms Task Force (Ron Dekker)
Q2 2019 Apr-Jun				Annual FAIR workplan		Continual comms and engagement via Liaison Platform & Stakeholder Community events
Q3 2019 Jul-Sep	Initial landscape mapping				Initial EOSC Rules of Participation	
Q4 2019 Oct-Dec	Final landscape mapping		Outline PID policy Initial federating core Registry of infrastructure Updated catalogue & portal	Outline FAIR metrics & repository certification		
Q1 2020 Jan-Mar				Annual FAIR workplan		
Q2 2020 Apr-Jun			Revised Workplan Preliminary connection of infrastructures and services EOSC Catalogue of datasets			EOSC brand Trademark
Q3 2020 Jul-Sep	Report on EOSC readiness Strategic & financing options post 2020		EOSC Interoperability framework (joint output)		Final EOSC Rules of Participation	
Q4 2020 Oct-Dec			Updated PID policy Updated FAIR metrics & repository certification			

Table 1 - EOSC 2019-2020: Timeline



EOSC Working Groups



- **Landscape:** Mapping of the existing research infrastructures which are candidates to be part of the EOSC federation;
- **FAIR:** Implementing the FAIR data principles by defining the corresponding requirements for the development of EOSC services, in order to foster cross-disciplinary interoperability;
- **Architecture:** Defining the technical framework required to enable and sustain an evolving EOSC federation of systems;
- **Rules of participation:** Designing the Rules of Participation that shall define the rights, obligations governing EOSC transactions between EOSC users, providers and operators;
- **Skills and Training:** Providing a framework for a sustainable training infrastructure to support EOSC in all its phases and ensure its uptake;
- **Sustainability:** Providing a set of recommendations concerning the implementation of an operational, scalable and sustainable EOSC federation after 2020.

<https://www.eoscsecretariat.eu/eosc-working-groups>

EOSC



sustainable and a data economy. Data is a renewable resource as much as sun and wind. Every 18 months we double the amount of data we produce. **Industrial and commercial data, 85% of which is never used.**

This is not sustainable. Within those data, there are hidden treasures and untapped opportunities for business and society. Europe is going to

co-create a framework to allow the use of these data. It should consist of a trusted pool of non-personal data that governments, businesses and other stakeholders can contribute to. This pool will be a resource for open innovation, and bring new solutions to the market. And our scientists are already beginning to do this.

We are creating a European Open Science Cloud now. It is a trusted space for researchers to store their data and to access data from researchers from all other disciplines. We will create a pool of interlinked information, a 'web of research data'. Every researcher will be able to better use not only their own data, but also those of others. They will thus come to new insights, new findings and new solutions.

85% dei dati non utilizzato

This is what we call the European Open Science Cloud and we are the first in the world to do that. It is being developed in Europe for Europe and for European researchers. The idea is that once we have the rules of the game ready, then we will open this up to the broader public sector and to business as well. So that companies can come in, store the data and use the data. And the idea is that it will also open up to international players.

Jan. 22, 2020

ENTRO 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 ?

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 will answer to the FAIR Guiding Principles. This means that data resources, services, and 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's decisions are 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 and groups will be best achieved through transparent processes and operations in general (subject to 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.



GO FAIR Initiative

Implementation Networks

FAIR Principles

Technology

Training

Certification

<https://www.go-fair.org/>

GO FAIR: a bottom-up international approach

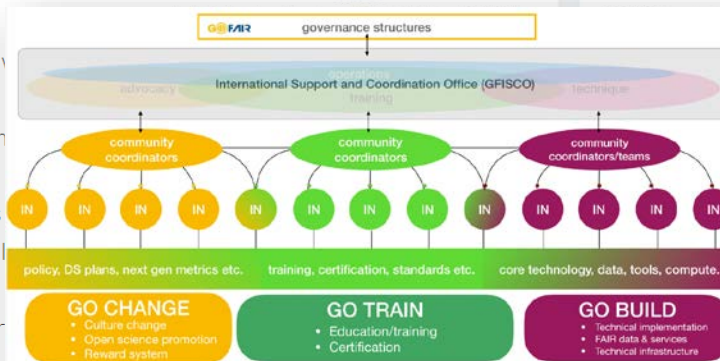
for the practical implementation of the European Open Science Cloud (EOSC) as part of a global Internet of FAIR Data & Services

Context of GO FAIR

Watch videos



Vision



Strategy

Open implementation strategy for the EOSC as part of a broader global strategy. The approach is largely based on the recommendations of the High Level Expert

[clouds on the Cloud???

