



# From Open Access to Open Science: A Vision

**José Cotta**

Head of Unit "Digital Science" - European Commission,  
Directorate General for Communications Networks,  
Content and Technology (CONNECT)

[jose.cotta@ec.europa.eu](mailto:jose.cotta@ec.europa.eu)

36th Annual IATUL Conference, Hannover, 6 July 2015  
"Strategic Partnerships for Access and Discovery"

# A new Commission (2014-19)



**Andrus Ansip, Vice-President, Digital Single Market**



**Günther Oettinger, Commissioner  
for Digital Economy and Society**



**Carlos Moedas, Commissioner for  
Research, Science and Innovation**



# Political Framing for Open Science Digital Single Market (DSM)

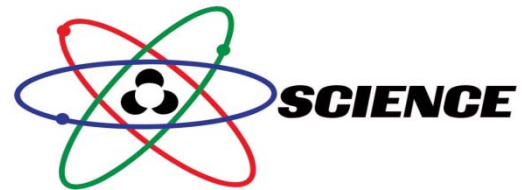
DSM: An area in which individuals and businesses can access and exercise online activities under conditions of fair competition, with a high degree of consumer and data protection, irrespective of their nationality or place of residence

One of ten Juncker priorities

Importance of Research & Innovation for DSM: **open science, free flow of data**, including research data

Copyright reform, including **text and datamining (TDM)**

# The broader policy context:





## Open Science

Open Science is ... the **transformation and opening up** of science and research and **innovation** through **ICT**, with the objectives of **making science more efficient, transparent and interdisciplinary**, and of enabling **broader societal impact and innovation**.

# Open Science: challenges

- No access limitations
- European Open Science cloud

E-infrastructures  
for open science

Open access  
to research  
results &  
processes

- Alternative publishing models
- Research data standards, open metadata
- Open source
- Text and Data-mining / copyright
- Data protection issues

- Alternative research evaluation/metrics for science and research
- (Open) peer review

- Science for innovation, e.g. ICT and Art

Public  
engagement,  
citizen science,  
crowdsourcing

Evidence-based  
policy making /  
Global Systems  
Science

- Link science and society in policy decisions
- Societal data deluge and data-intensive modelling
- Science Advisory Mechanism (SAM)

- From isolated examples to research methods
- New ways of funding research

**Catalyse a change in culture !**

for researchers, research organisations and industry

## Commissioner view



Carlos Moedas, Commissioner for  
Research, Science and Innovation



Günther Oettinger, Commissioner for  
Digital Economy and Society

**"Open science** is [...] about making sure that science serves innovation and growth. It guarantees **open access** to publicly-funded research results and the possibility of knowledge sharing [...]."

Blog post by Commissioners Oettinger and Moedas (22 June 2015): Open science for a knowledge and data-driven economy

[https://ec.europa.eu/commission/2014-2019/oettinger/blog/open-science-knowledge-and-data-driven-economy\\_en](https://ec.europa.eu/commission/2014-2019/oettinger/blog/open-science-knowledge-and-data-driven-economy_en)



# Open access in Horizon 2020





## What is Open Access ?

- Online access at no charge to the user:
  - to peer-reviewed scientific publications
  - to research data (possibility to re-use)



# Why open access?

## To optimise the impact of publicly-funded research

- At European level (Framework Programmes)
- At Member State level

## Expected benefits of open access:

- Good for science: efficiency, verifiability, transparency
- Good for the economy: access and take-up by industry
- Good for society: broader, faster, transparent and equal access for citizens

# Open Access to Publications





# OA to publications in H2020: mandate

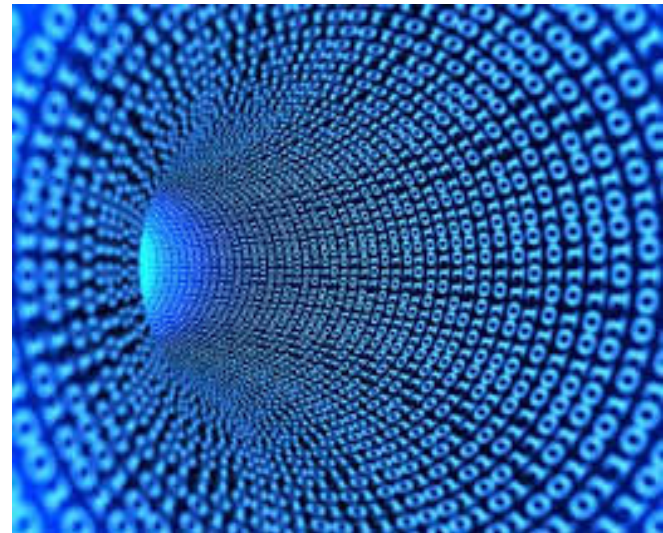
- Each beneficiary must ensure OA to all peer-reviewed scientific publications relating to its results
- Deposit a machine-readable copy in a repository (possibly OpenAIRE compliant)
- Ensure OA on publication or at the latest within 6 months (12 for SSH)
- Aim to deposit at the same time the research data needed to validate the results ("underlying data")
- Ensure OA to the bibliographic metadata that identify the deposited publication, via the repository



# FP7 post-grant Open Access publishing funds pilot

- 24 month-subproject of OpenAIRE 2020
- Mechanism to support gold open access after end of grant
- Budget: €4 million
- FP7 publications
- For publications published up to two years after project end
- Up to three peer-reviewed publications per project
- OA monographs are eligible
- Details: <https://www.openaire.eu/goldoa/fp7-post-grant/pilot>

# Open Access to Research Data





# Pilot on Open Research Data in H2020

Three key questions:

**Which thematic areas are covered?**

**What kind of data is covered?**

**What about data management?**



# Pilot on Open Research Data: Scope

Areas of the 2014-2015 Work Programme participating in the Open Research Data Pilot are:

- Future and Emerging Technologies
- Research infrastructures – part e-Infrastructures
- Leadership in enabling and industrial technologies – Information and Communication Technologies
- Societal Challenge: Secure, Clean and Efficient Energy – part Smart cities and communities
- Societal Challenge: Climate Action, Environment, Resource Efficiency and Raw materials – except raw materials
- Societal Challenge: Europe in a changing world – inclusive, innovative and reflective Societies
- Science with and for Society

**Projects in other areas can participate on a voluntary basis.**





# Pilot on Open Research Data: Opt-out

Projects may opt out of the Pilot on Open Research Data in Horizon 2020 in a series of cases (submission stage):

- If the project will not generate / collect any data
- Conflict with obligation to protect results
- Conflict with confidentiality obligations
- Conflict with security obligations
- Conflict with rules on protection of personal data
- If the achievement of the action's main objective would be jeopardised by making specific parts of the research data openly accessible (to be explained in data management plan)

**Opting out during project also possible**

**Being in the Pilot does not mean opening all data**



# Pilot on Open Research Data: requirements

## Types of data concerned:

- Data needed to validate the results presented in scientific publications ("underlying data")
- Other data as specified in data management plan (=up to projects)

## Beneficiaries participating in the Pilot will:

- Deposit this data in a research data repository of their choice
- Take measures to make it possible to access, mine, exploit, reproduce and disseminate free of charge
- Provide information about tools and instruments at the disposal of the beneficiaries and necessary for validating the results (where possible, provide the tools and instruments themselves)

**Approach: as open as possible, as closed as necessary**



# Data management in Horizon 2020

- Data Management Plans (DMPs) mandatory for all projects participating in the Pilot, optional for others
  - DMPs are NOT part of the proposal evaluation
  - To be generated within first 6 months of project, updates as needed
- DMP questions:
  - What data will be collected / generated?
  - What standards will be used / how will metadata be generated?
  - What data will be exploited? What data will be shared / opened?
  - How will data be curated and preserved?
- **DMP: tool to determine what datasets can/cannot be open**



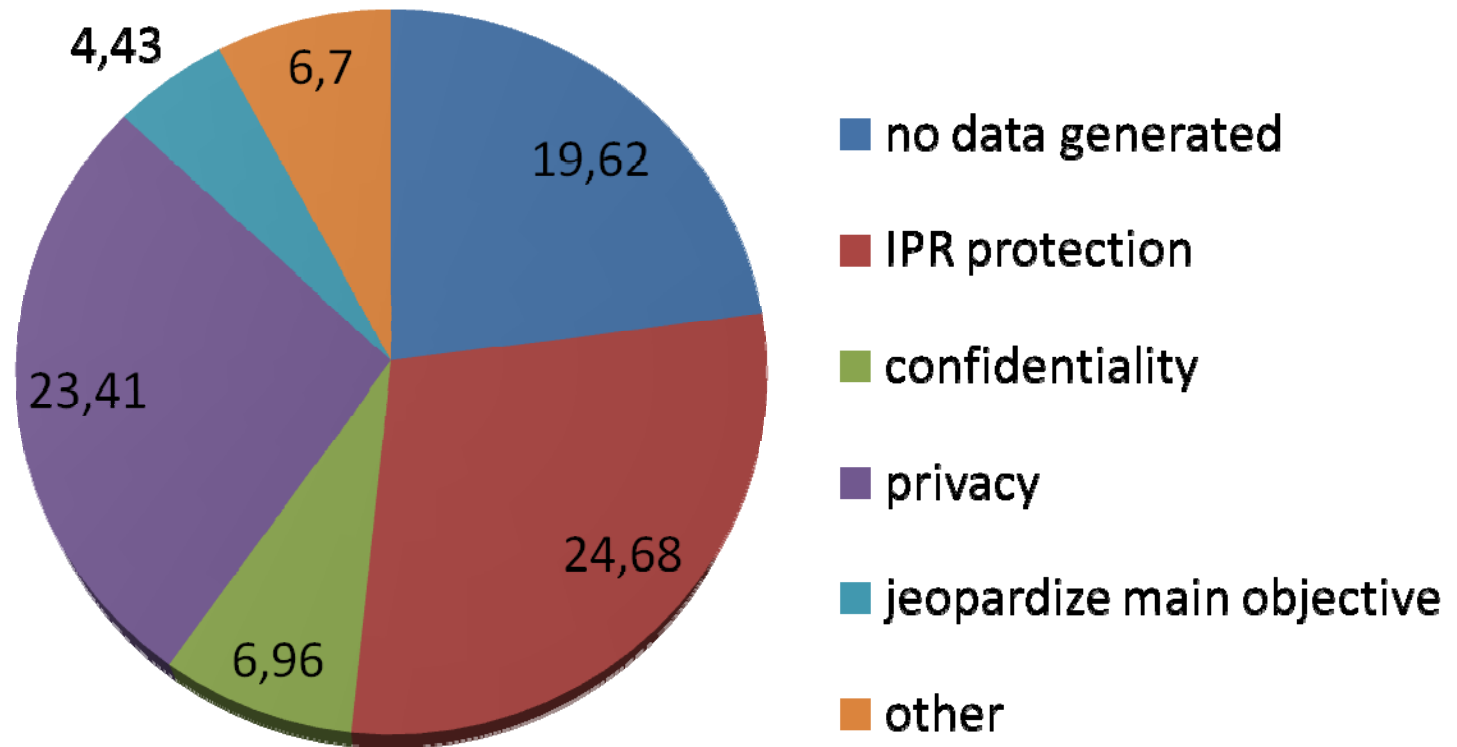
## ORD Pilot: initial take-up

- Preliminary!
- Basis: 3054 Horizon 2020 **proposals**

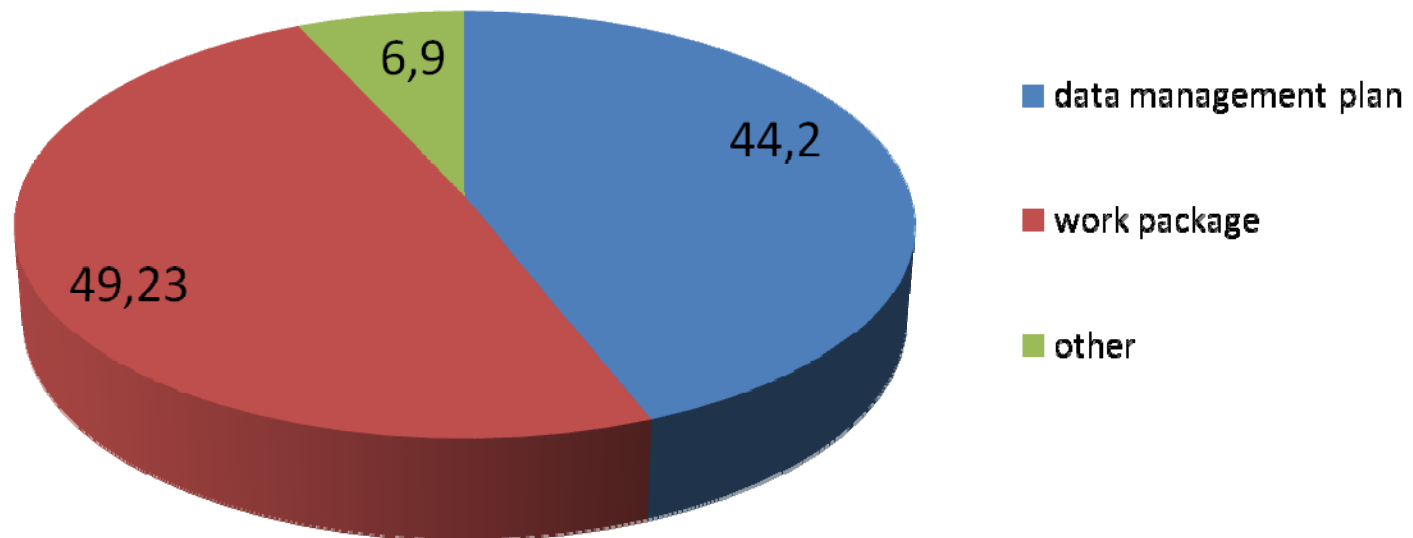
Calls in core-areas: **opt out 24.2%** (442 of 1824 proposals) – range from 9,1-29,1%

Other areas: voluntary **opt in 27.2%** (334 of 1230 proposals) – range from 9 to 50%

# ORD Pilot: opt-out reasons among proposals



# ORD Pilot: approach to data management among proposals



## Open research data: work in progress

- **Structure and coverage of the pilot:** to remain the same, at least until mid-term review; small incremental changes possible
- **DMP implementation:** investigating best-practice; tools to be developed (2015)
- **Focus on monitoring of OA policies** for further policy development
- **Participating in the Pilot means co-shaping European policy on opening up research data**



# Resources

H2020 Guidelines:

Open access:

[http://ec.europa.eu/research/participants/data/ref/h2020/grants\\_manual/hi/oa\\_pilot/h2020-hi-oa-pilot-guide\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf)

Data management:

[http://ec.europa.eu/research/participants/data/ref/h2020/grants\\_manual/hi/oa\\_pilot/h2020-hi-oa-data-mgt\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf)





# Resources

## Publications:

- Zenodo <http://zenodo.org/> (OpenAIRE)
- List of publications repositories: <http://www.openoar.org/>
- List of publisher policies: <http://www.sherpa.ac.uk/romeo/>
- Directory of OA journals: <https://doaj.org/>

## Research Data:

- B2Share <http://eudat.eu/services/b2share> (EUDAT)
- Zenodo <http://zenodo.org/> (OpenAIRE) – focus on link with publications, communities
- List of research data repositories: <http://www.re3data.org/>

## Data Management Plan:

- Digital Curation Centre <https://dmponline.dcc.ac.uk/>, <http://www.dcc.ac.uk/resources/data-management-plans>. Other institutions developing tools. EC resources are being developed.



# Key EC-funded projects supporting OA

**EUDAT:** Pan-European infrastructure providing research data services - [eudat.eu](http://eudat.eu)

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

**OpenAIRE:** OA infrastructure for Research in Europe. links 5800 repositories, Zenodo, heldesks. [www.openaire.eu](http://www.openaire.eu)

**PASTEUR4OA:** Open Access Policy Alignment Strategies for European Union Research [www.pasteur4oa.eu](http://www.pasteur4oa.eu)

**RECODE:** Policy Recommendations for Open Access to Research Data in Europe [recodoproject.eu](http://recodoproject.eu)



# From Open Access to Open Science: A Vision

**Thank you!**

36th Annual IATUL Conference, Hannover, 6 July 2015  
"Strategic Partnerships for Access and Discovery"