

# Национална инициатива за отворена наука в Европа



**ORDM**

Open Research Data Management

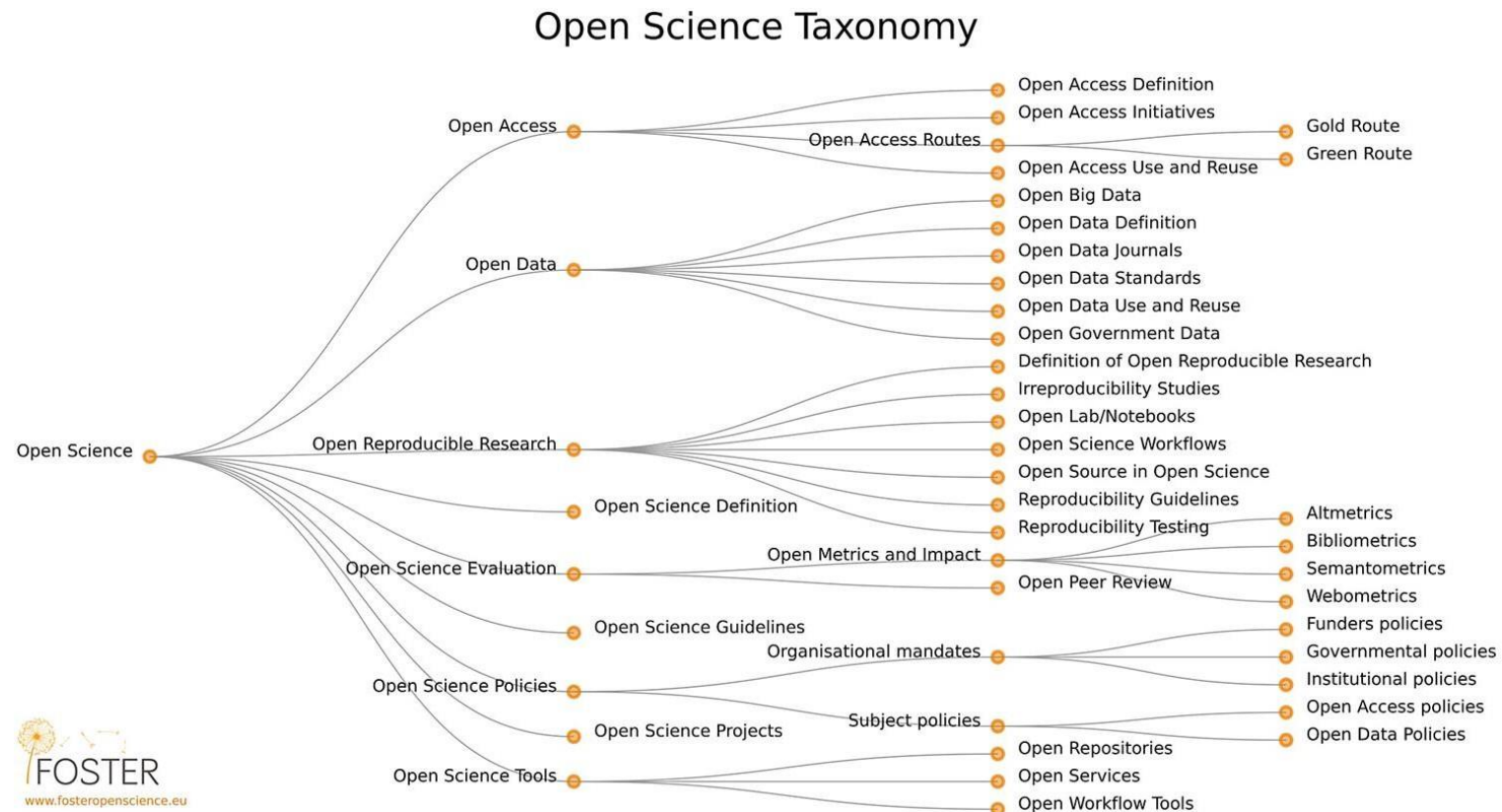
Управление на отворени изследователски данни

Петър Станчев

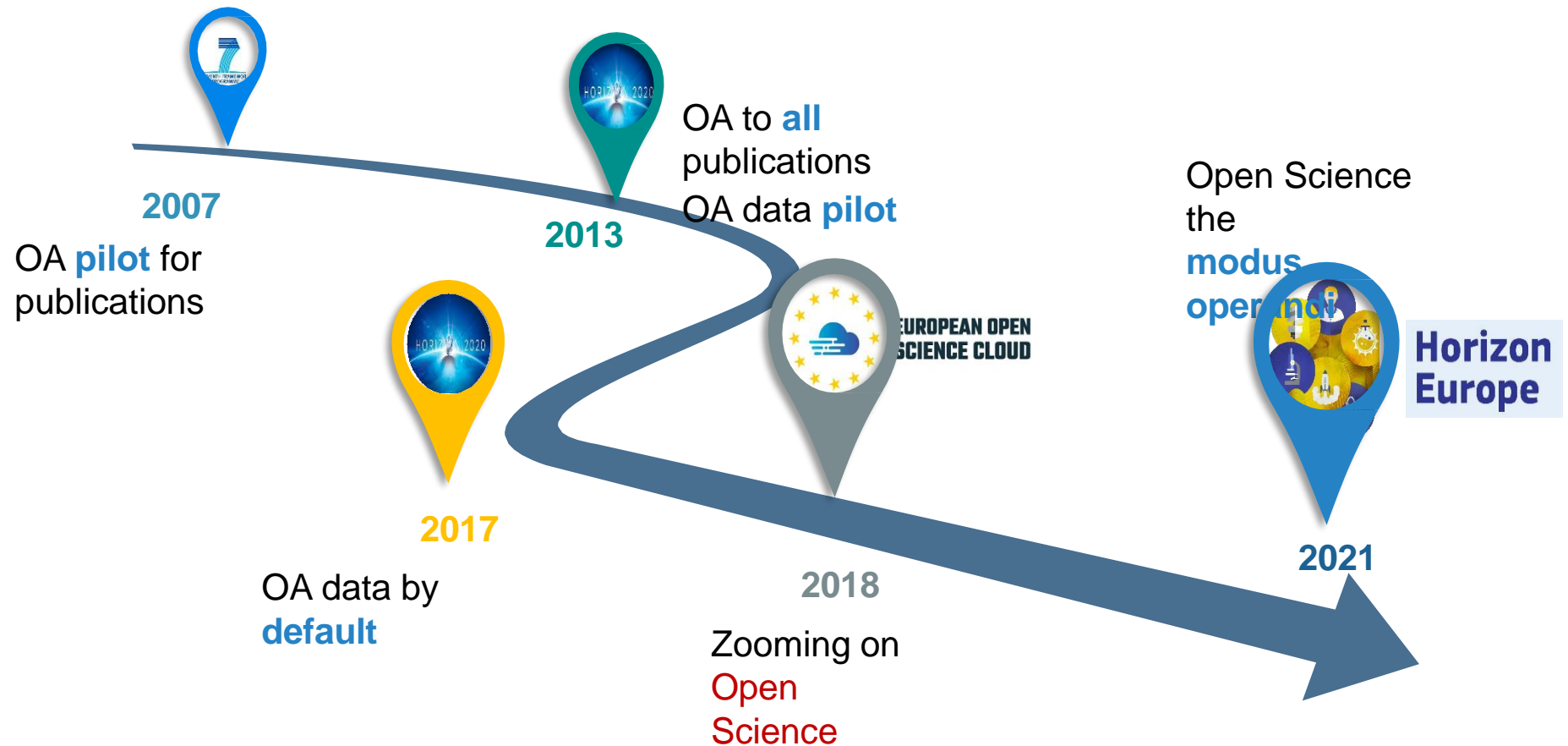
[stanchev@math.bas.bg](mailto:stanchev@math.bas.bg)

1. Рамка за отворена наука
2. Отворена и FAIR RDM
3. Заинтересовани страни и RDM
4. Изследователи
5. Архиви в България

**Рамка за отворена наука**



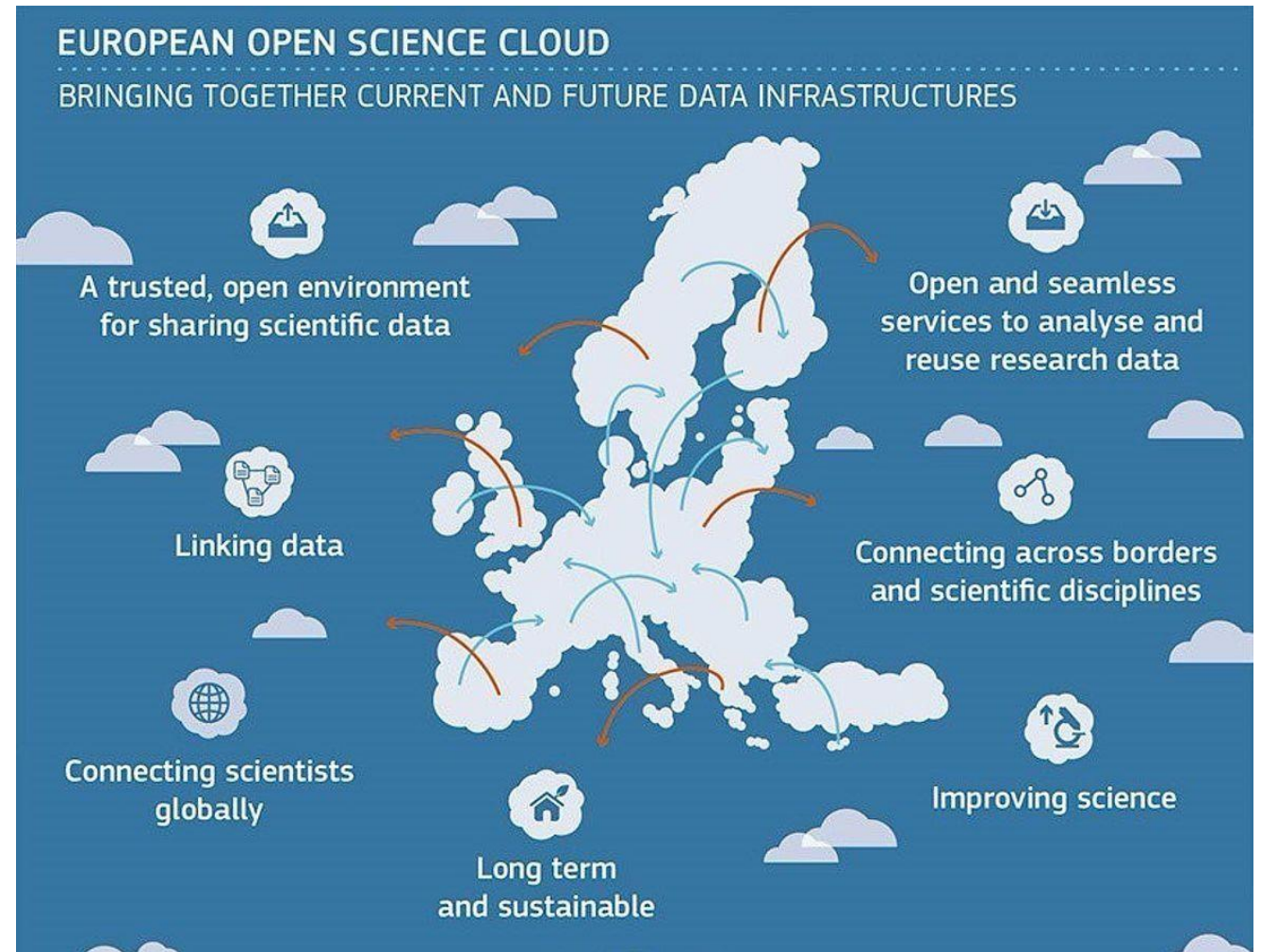
# Рамкови програми



# EOSC – Европейски облак за отворена наука

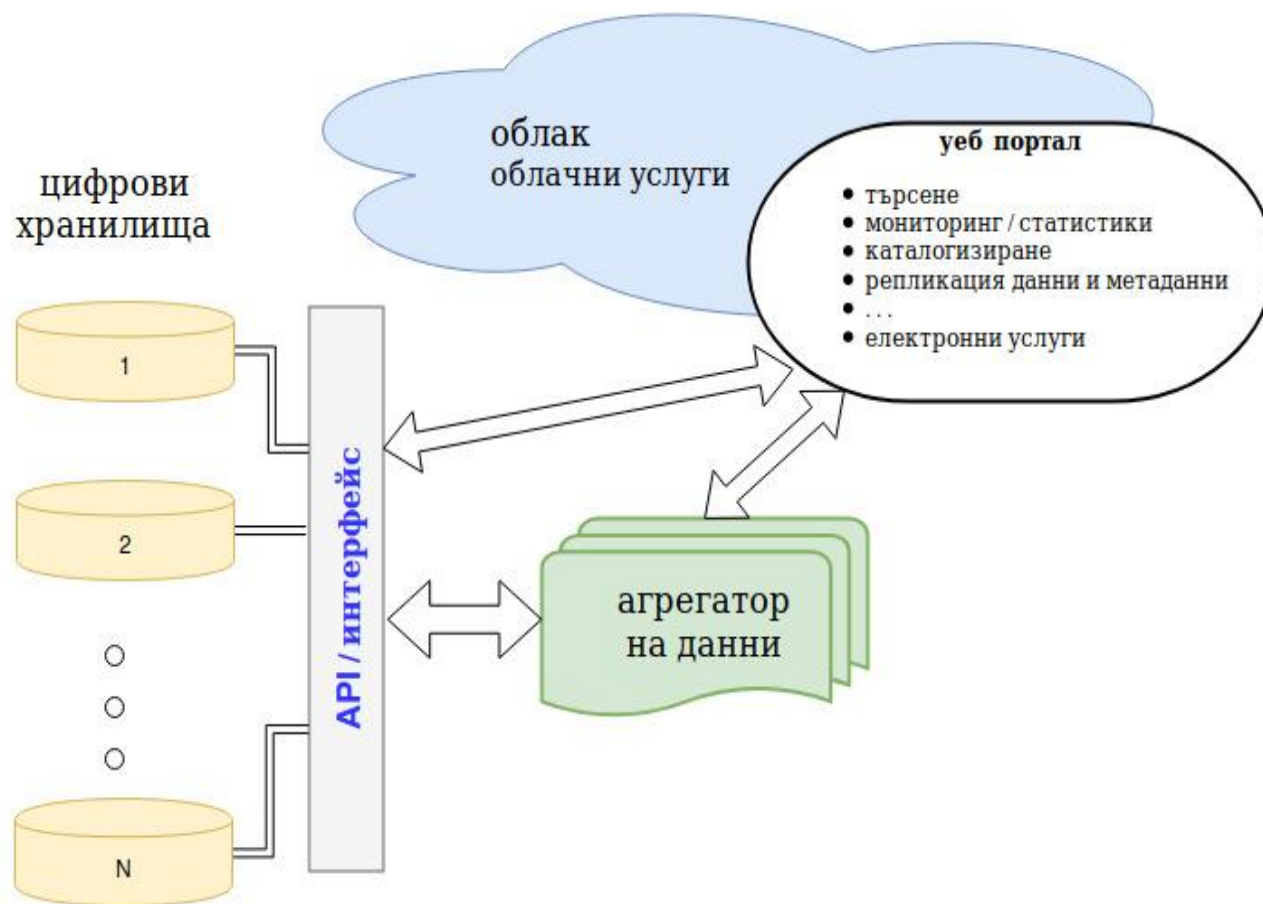


- Етична, открита, сигурна и рентабилна среда в подкрепа на практиките за отворена наука и комуникационните изследвания в ЕС



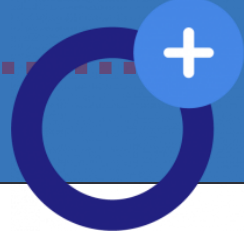
EOSC portal: <https://www.eosc-portal.eu/>

# Основни изисквания към автоматизирана система и национален портал за отворен достъп до научна информация



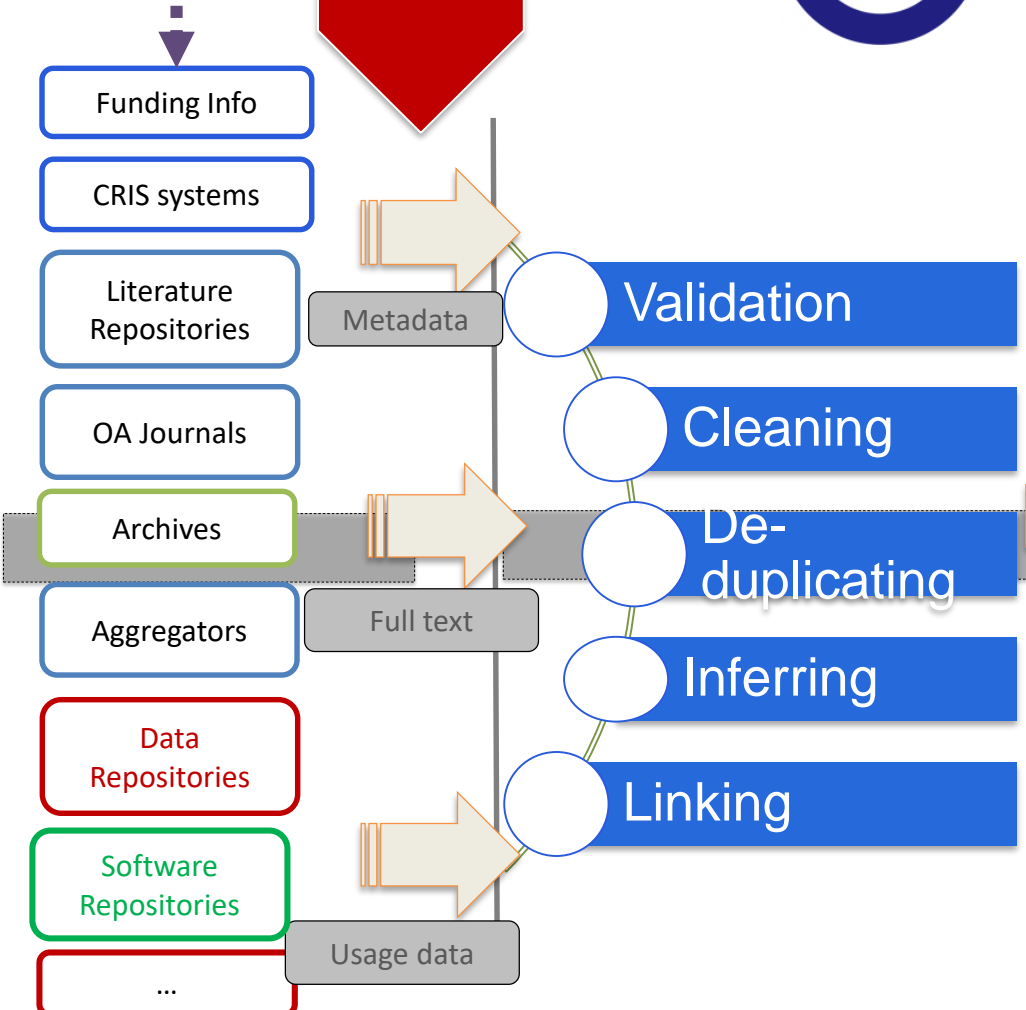
**Отворена и FAIR RDM**



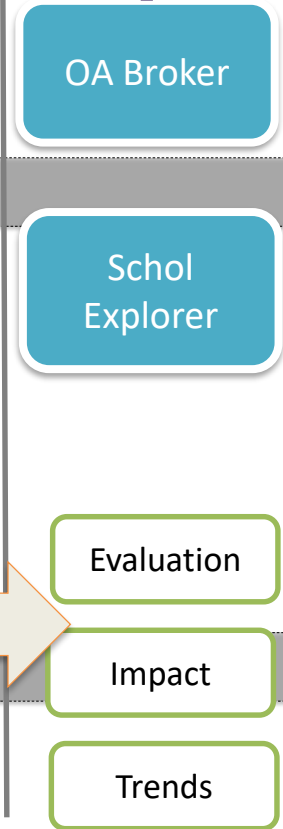
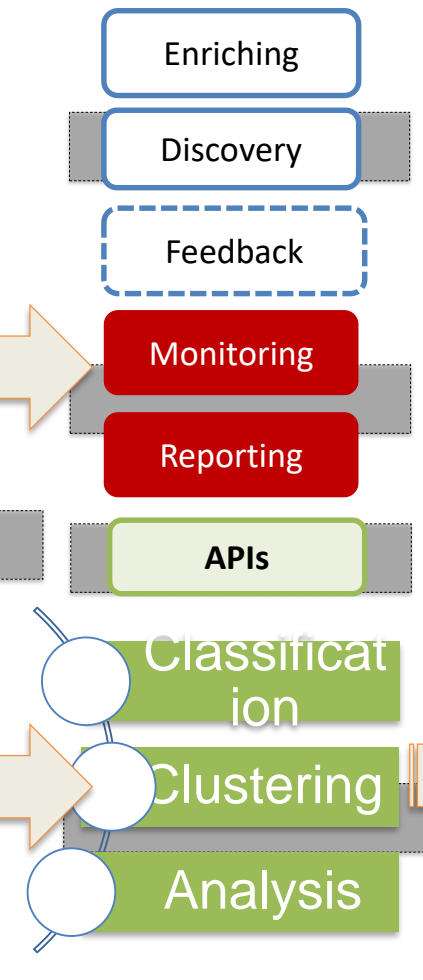
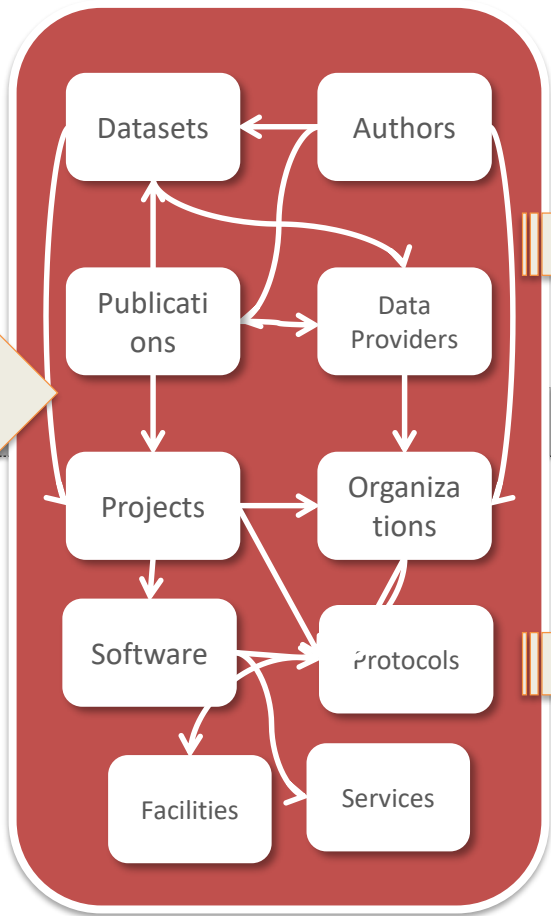


# ADVANCE

## Guidelines



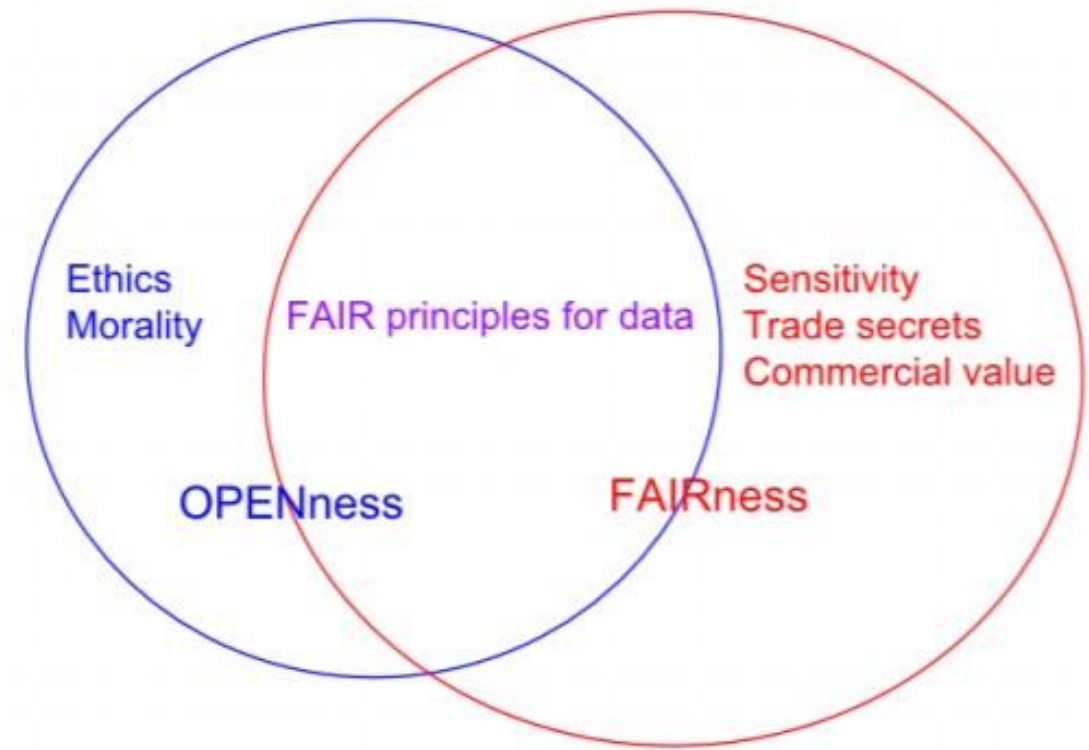
## A European Research Information System



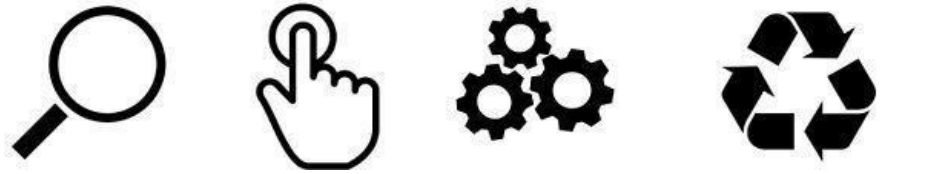
Research. Shared.

# Отворени и FAIR RDM

ACCESS	READER RIGHTS	REUSE RIGHTS	COPYRIGHTS	AUTHOR POSTING RIGHTS	AUTOMATIC POSTING	MACHINE READABILITY	ACCESS
OPEN ACCESS	Free readership rights to all articles immediately upon publication	Generous reuse & remixing rights (e.g., CC BY license)	Author holds copyright with no restrictions	Author may post any version to any repository or website with no delay	Journals make copies of all articles automatically available in trusted third-party repositories (e.g., PubMed Central, OpenAire, Institutional) immediately upon publication	Article full text, metadata, supporting data (including format and semantic markup) & citations may be accessed via API, with instructions publicly posted	OPEN ACCESS
	Free readership rights to all articles after an embargo of no more than 6 months	Reuse, remixing, & further building upon the work subject to certain restrictions & conditions (e.g., CC BY-NC & CC BY-SA licenses)	Author retains/publisher grants broad rights, including author reuse (e.g., of figures in presentations/teaching, creation of derivatives) and authorization rights (for others to use)	Author may post some version (determined by publisher) to any repository or website with no delay	Journals make copies of all articles automatically available in trusted third-party repositories (e.g., PubMed Central, OpenAire, Institutional) within 6 months	Article full text, metadata, & citations may be accessed via API, with instructions publicly posted	
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	Free and immediate readership rights to some, but not all, articles (including "hybrid" models)	Some reuse rights beyond fair use for some, but not all, articles (including "hybrid models")	Author retains/publisher grants limited rights for author reuse (e.g., of figures in presentations/teaching, creation of derivatives)	Author may post some version (determined by publisher) to certain repositories or websites, with or without delays.	Journals make copies of some, but not all, articles automatically available in trusted third-party repositories (e.g., PubMed Central, OpenAire, Institutional) within 12 months	Article full text, metadata, & citations may be crawled with permission, with instructions publicly posted	
CLOSED ACCESS	Subscription, membership, pay-per-view, or other fees required to read all articles	No reuse rights beyond fair use/dealing or other limitations or exceptions to copyright (All Rights Reserved)	Publisher holds copyright, with no author reuse beyond fair use	Author may not deposit any versions to any repositories or websites at any time	No automatic posting in third-party repositories	No full text articles available for crawling	CLOSED ACCESS

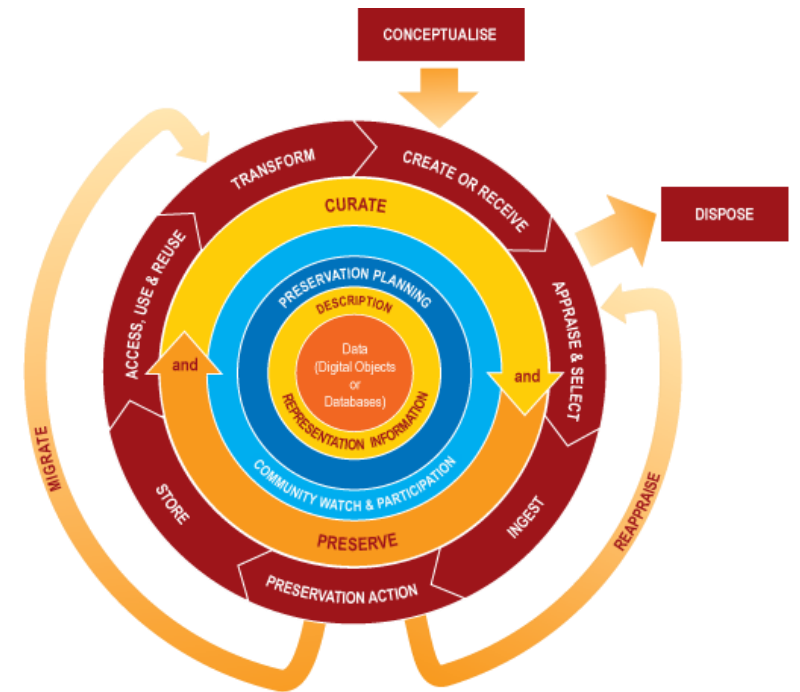
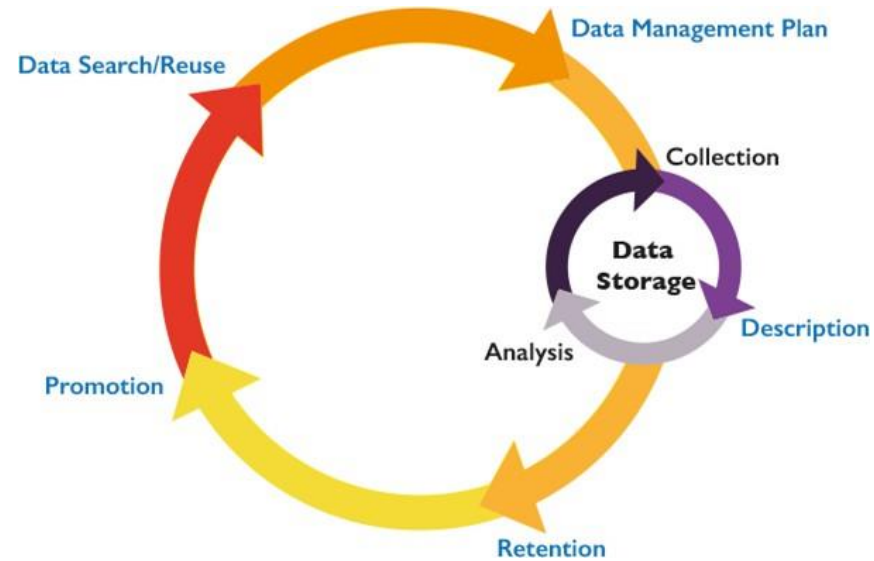
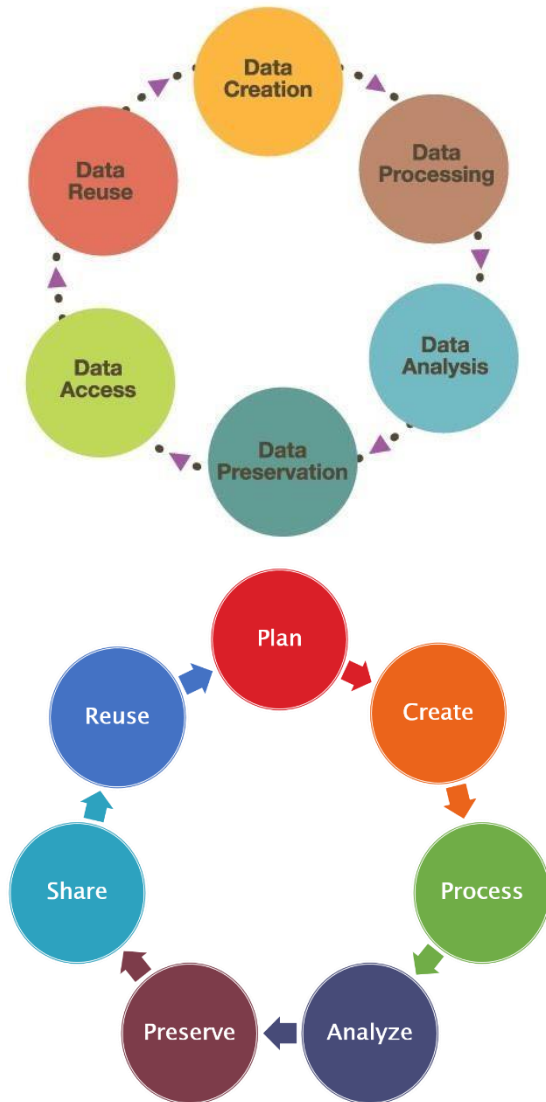


**F**indable   **A**ccessible   **I**nteroperable   **R**eusable



достъпни, оперативно съвместими и повторно използваеми

# RDM жизнен циклъл



# Изчисване на данните

- Несъответствия в представителството
- Числени несъответствия
- Неправилно изписване / печатни грешки
- Съкратено съдържание и несъответствия
- Дубликати
- Други данни

M, male, m., fem., F,  
Female

05/05/2020 OR 5<sup>th</sup> May 2020 OR May 5 2020  
**VS** 05-05-2020 “%d-%m-%Y”

SUM; Notes

“hello world” -> “hello world  
munchen, Munich, Muenchen

Mixed scales, eg million vs age

---

# Видове чувствителни данни

- Лични данни (и метаданни)
  - Поверителни данни (търговска тайна, разследвания, ...)
  - Данни за сигурност (пароли, финансови информация, национална безопасност, военни, ...)
  - Данни, защитени от правата на интелектуална собственост
  - Данни за местоположение / GPS / мобилни телефони
  - Застрашени видове
  - Комбинация от различни набори
-

**Заинтересовани страни и RDM**

## RECOMMENDATIONS

**COMMISSION RECOMMENDATION (EU) 2018/790  
of 25 April 2018  
on access to and preservation of scientific information**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 292 thereof,

Whereas:

- (1) The European Commission adopted in July 2012 a scientific information package, consisting of the communication 'Towards better access to scientific information: Boosting the benefits of public investments in research' <sup>(1)</sup>, and of Commission Recommendation 2012/417/EU <sup>(2)</sup>. Recommendation 2012/417/EU states that the Commission will review the progress made across the Union to assess whether further action is needed to achieve the objectives laid down.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0790&from=EN>





Project acronym: RECODE  
Project title: Policy RECommendations for Open access to research Data in Europe  
Grant number: 321463  
Programme: Seventh Framework Programme for Science in Society  
Objective: SiS-2012.1.3.3-1: Scientific data: open access, dissemination, preservation and use  
Contract type: Co-ordination and Support Action  
Start date of project: 01 February 2013  
Duration: 24 months  
Website: [www.recodeproject.eu](http://www.recodeproject.eu)

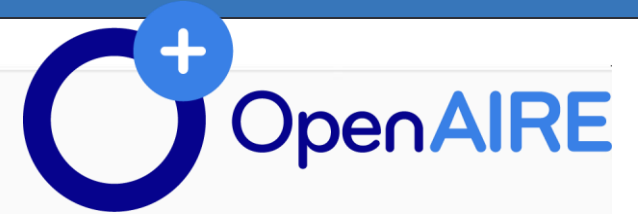


<http://www.pasteur4oa.eu/resources>



**LEARN Toolkit of Best Practice  
for Research Data Management**

<http://learn-rdm.eu/wp-content/uploads/RDMToolkit.pdf>



## Toolkit for Policy Makers on Open Science and Open Access

The OpenAIRE Toolkit for Policy Makers has been designed to assist the design and adoption of Open Science policies aligned with EU developments in the field. It therefore targets stakeholders at national, institutional or funder level with a key role in the adoption of Open Science / Open Access policies (university rectors, directors of research centres, directors of funding agencies, rectors' summit, ministries etc.).

The Toolkit aims to assist NOADs in promoting OS/OA policies in their country and enabling them to become the national hub on OS/OA by enhancing their expertise.

Yet, the Toolkit can also be used by other stakeholders seeking to learn, adopt or align their OS/OA policies and this is why all related material and resources are public.

Open Science Policy Checklist for  
Research Funding Organisations

Open Science Policy Checklist for  
Research Performing Organisations

Model Policy on Open Science for  
Research Funding Organisations

Model Policy on Open Science for  
Research Performing Organisations

<https://www.openaire.eu/toolkit-for-policy-makers-on-open-science-and-open-access>





# Отворено управление на изследователските данни



[https://www.scienceeurope.org/media/jezkhnoo/se\\_rdm\\_practical\\_guide\\_final.pdf](https://www.scienceeurope.org/media/jezkhnoo/se_rdm_practical_guide_final.pdf)



[http://www.scienceeurope.org/media/nsxdyvqn/se\\_guidance\\_document\\_rdmeps.pdf](http://www.scienceeurope.org/media/nsxdyvqn/se_guidance_document_rdmeps.pdf)

[Homepage - Open Field Guides - Engaging Researchers with Data Management: The Cookbook](#)

## Engaging Researchers with Data Management: The Cookbook

Connie Clare, Maria Cruz, Elli Papadopoulou, James Savage, Marta Teperek, Yan Wang, Iza Witkowska, and Joanne Yeomans

 <https://orcid.org/0000-0002-4369-196X>  <https://orcid.org/0000-0001-9111-182X>  
 <https://orcid.org/0000-0002-0893-8509>  <https://orcid.org/0000-0002-4737-5673>  
 <https://orcid.org/0000-0001-8520-5598>  <https://orcid.org/0000-0002-6317-7546>  
 <https://orcid.org/0000-0002-7914-3957>  <https://orcid.org/0000-0002-0738-7661>

Paperback	ISBN: 978-1-78374-797-9	£15.95	<input type="button" value="Add to Cart"/>
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XML	ISBN: 978-1-78374-802-0	£0.00	<input type="button" value="Download"/>



## The Open Science Training Handbook

Readme	1.1
Introduction	1.2
Open Science Basics	1.3
Open Concepts and Principles	1.3.1
Open Research Data and Materials	1.3.2
Open Research Software and Open Source	1.3.3
Reproducible Research and Data Analysis	1.3.4
Open Access to Published Research Results	1.3.5
Open Licensing and File Formats	1.3.6
Collaborative Platforms	1.3.7
Open Peer Review, Metrics and Evaluation	1.3.8
Open Science Policies	1.3.9
Citizen Science	1.3.10
Open Educational Resources	1.3.11
Open Advocacy	1.3.12
On Learning and Training	1.4
Organizational Aspects	1.5
Examples and Practical Guidance	1.6
Glossary	1.7
References	1.8
About the Authors & Facilitators	1.9
Languages	1.10

<https://www.openbookpublishers.com/product/1080>

<https://book.fosteropenscience.eu/en/book.pdf>

**Исследователи**

# Учете се и се информирайте

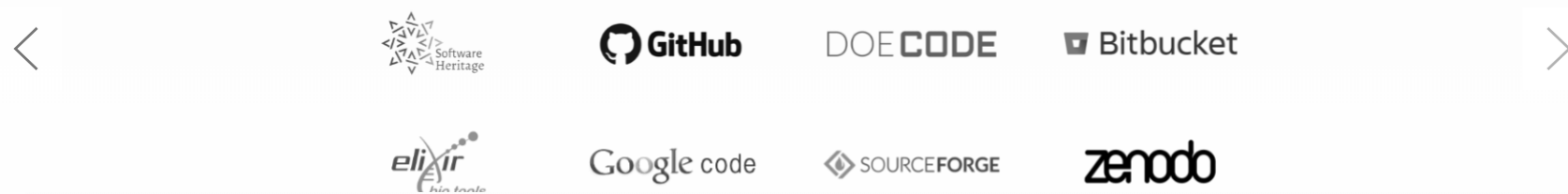


A screenshot of the OpenAIRE website's search page. At the top left is the OpenAIRE logo with the word "EXPLORE" in orange. To the right are navigation links: "SEARCH", "DEPOSIT", "LINK", "CONTENT PROVIDERS", and "SIGN IN" with a user icon. Below the navigation is a search bar with the placeholder text "Search in OpenAIRE for scholarly works" and an orange search button with a magnifying glass icon. Below the search bar, the text "41M publications deduplicated" is displayed in orange. At the bottom, there is a horizontal carousel of logos for various content providers, including Crossref, unpaywall, Elsevier, Springer Nature, frontiers, OpenCitations, DOAJ, Microsoft, PLOS, F1000, and Copernicus Publications. The carousel is flanked by left and right arrow icons.

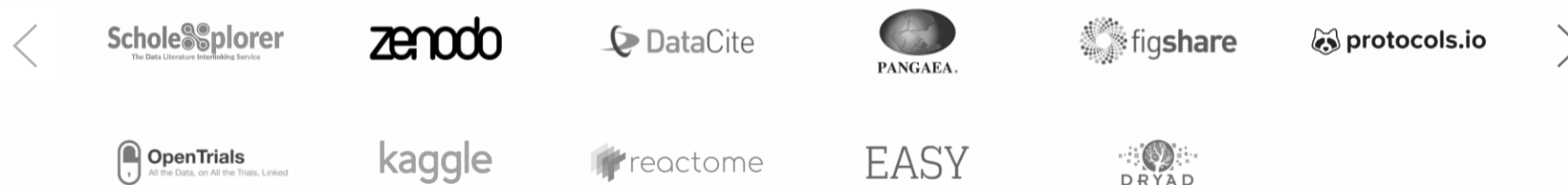
# Учете се и се информирайте



51K research software interlinked with publications



971K datasets interlinked with publications

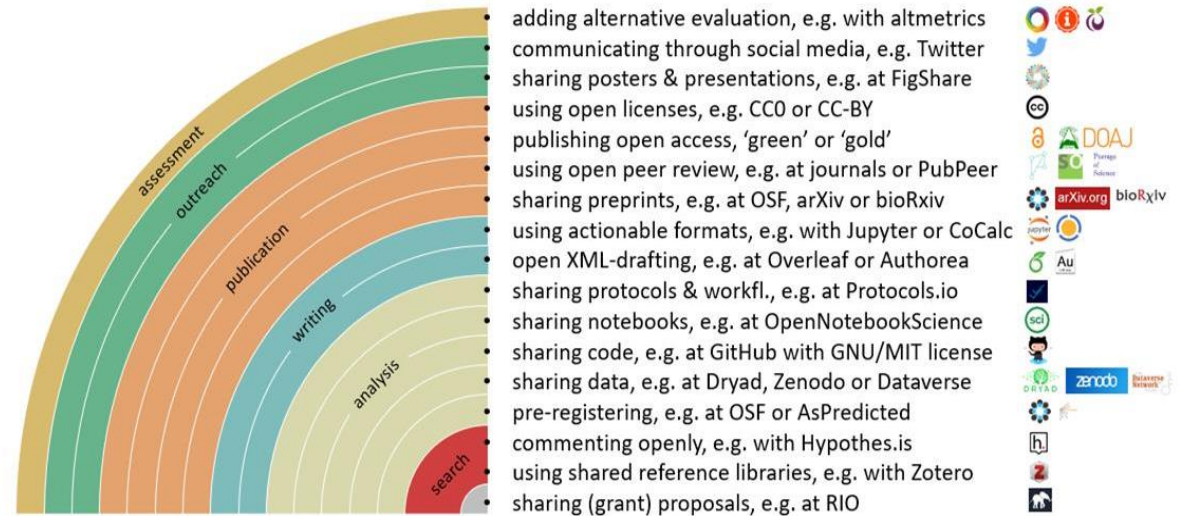


# Учете се и се информирайте



<https://www.fosteropenscience.eu/>

You can make your workflow more open by ...



Bianca Kramer & Jeroen Bosman <https://101innovations.wordpress.com>

[DOI: 10.5281/zenodo.1147025](https://doi.org/10.5281/zenodo.1147025)

[https://zenodo.org/record/1147025#.XrF\\_IKgzY2w](https://zenodo.org/record/1147025#.XrF_IKgzY2w)



# Учете се и се информирайте

## Top 10 FAIR Data & Software Things

about github repository download/cite license #top10fair

The Top 10 FAIR Data & Software Things are brief guides (stand alone, self paced training materials), called "Things", that can be used by the research community to understand how they can make their research (data and software) more FAIR (Findable, Accessible, Interoperable and Reusable). Each discipline/topic has its own specific list:

**Nanotechnology**

**Astronomy**

**Linked Open Data**

**Imaging**

**Music**

<https://librarycarpentry.org/Top-10-FAIR/>



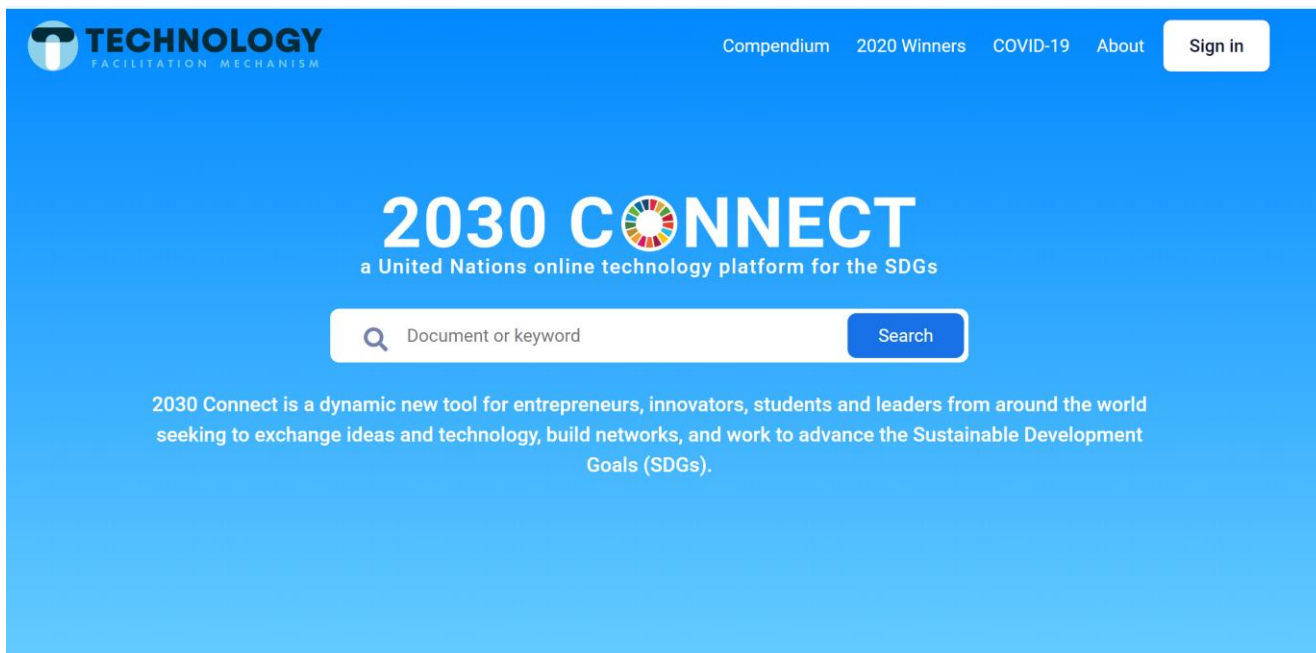
<https://www.openuphub.eu/>



# Учете се и се информирайте

портал към съществуващите инициативи,  
механизми и програми в рамките и извън ООН

<https://tfm2030connect.un.org/>



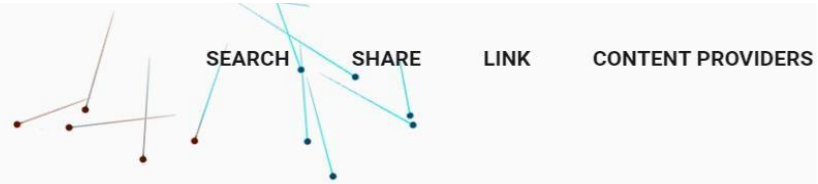
# OPEN SCIENCE MOOC

FREE | OPEN | LEARNING

<https://opensciencemooc.eu/>



# Намиране/събиране



Search in OpenAIRE for scholarly works



32mi publications, 2mi research data, 3mi other research products, 105K software from 16K content providers and 18 funders linked together for an integrated discovery of research outcomes



Explore



Share

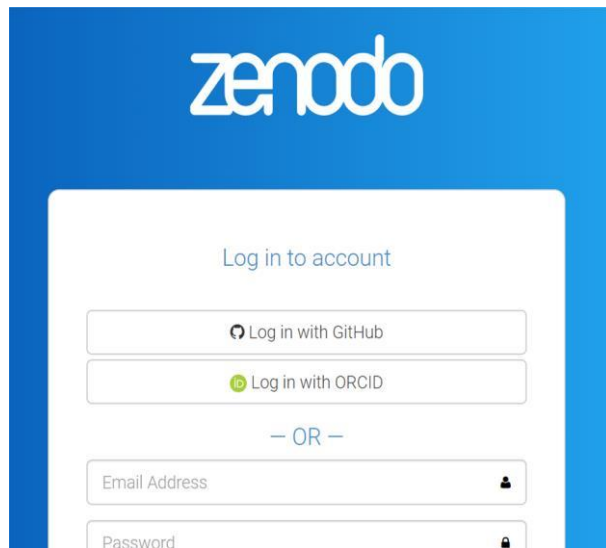


Link

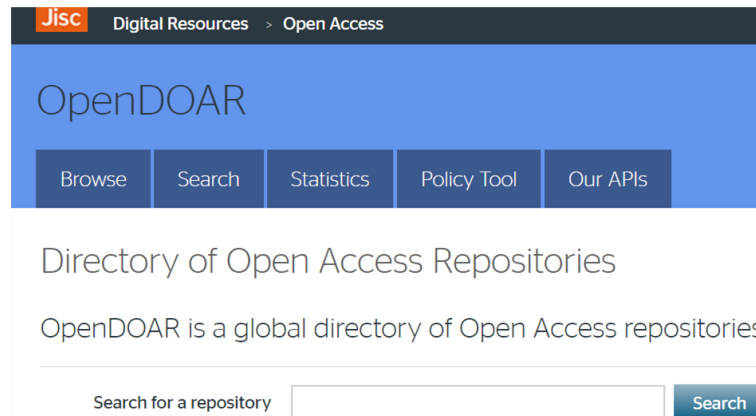


<https://explore.openaire.eu/>

# Намиране/събиране и депозиране



<https://zenodo.org/>




<https://v2.sherpa.ac.uk/opendoar/>



<https://www.re3data.org/>

# Публикуване в ОА - правила за статии

 ... opening access to research

Home • Search • Journals • Publishers • FAQ • Suggest • Support Us • About

English | Español | Magyar | Nederlands | Português

## Publisher copyright policies & self-archiving

### Search

Journal titles or ISSNs  Publisher names

Exact title  starts with  contains  ISSN


[Advanced Search](#)

*Use this site to find a summary of permissions that are normally given as part of each publisher's copyright transfer agreement.*

### Special RoMEO Pages

- [RoMEO Statistics](#)
- [Application Programmers' Interface \(API\)](#)
- [Publisher Categories in RoMEO](#)
- [Definitions and Terms](#)


### Additions and Updates

 [RSS1 Feed](#)

- [Ediciones de la Universidad de Valladolid](#) - Ediciones de la Universidad de Valladolid - 04-Dec-2018
- [Springer \(part of Springer Nature\)](#) - Springer (part of Springer Nature) - 26-Sep-2018
- [Nature Research \(part of Springer Nature\)](#) - Nature Research (part of Springer Nature) - 20-Sep-2018

### Other SHERPA Services

- [SHERPA/FACT](#) - Funders & Authors Compliance Tool
- [SHERPA/JULIET](#) - Research funders' open access policies



**DOAJ** DIRECTORY OF  
OPEN ACCESS  
JOURNALS

<https://v2.sherpa.ac.uk/romeo/>

# Устойчиви идентификатори

## Цифрови обекти

---



ARK PURL

## Изследователи и организации

---

ORCID

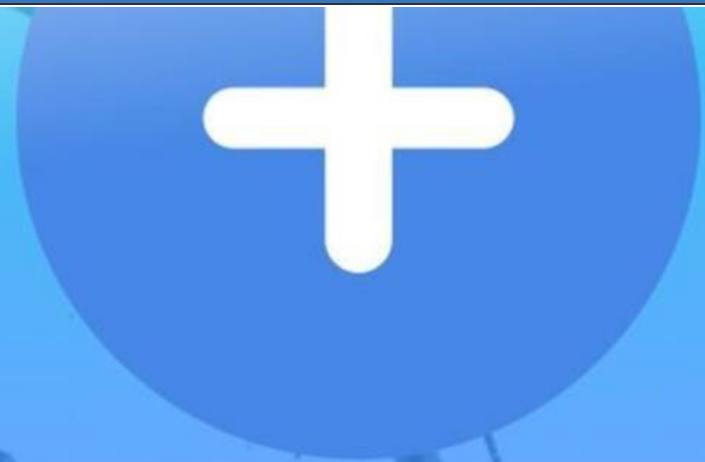


## Други

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# Validator



## Openaire Validator

OpenAIRE Validator functionalities are now available through the [provide.openaire.eu](https://www.openaire.eu) dashboard

[TRY NOW](#)

<https://www.openaire.eu/validator/>

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**Архиви в България**

# Базови функционалности:

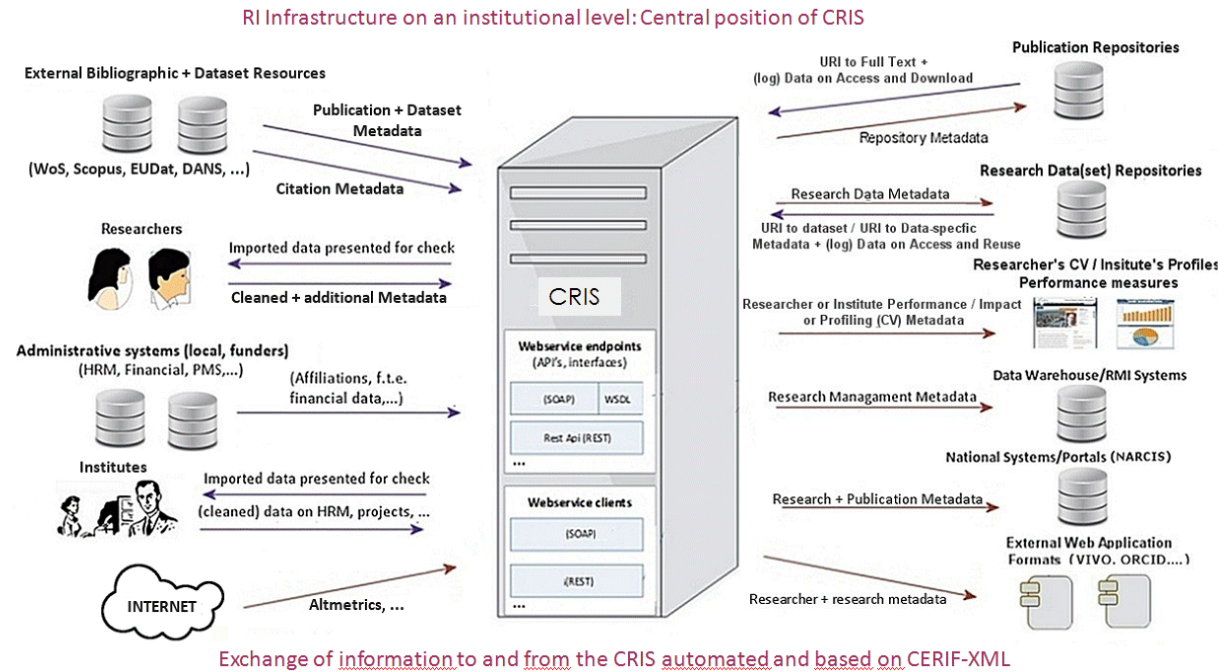
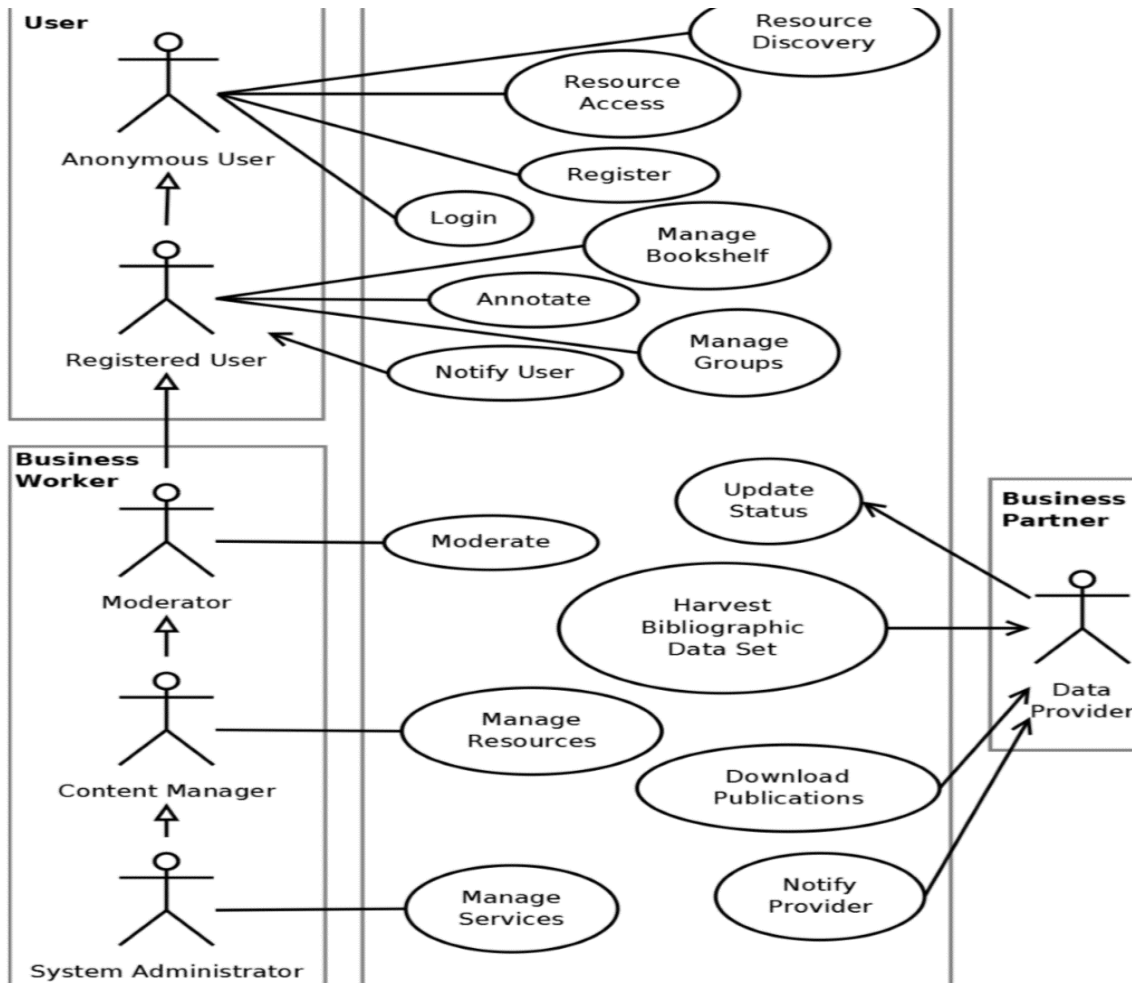
- Изграждане на архитектура на обединените инфраструктури за научни изследвания;
  - Предоставяне на данни, основани на принципите на FAIR (достъпни, оперативно съвместими и повторно използваеми);
  - Предоставяне на услуги, които покриват нуждите на потребителите;
  - Използване на интерфейс за работа с данни в различни дисциплини;
  - Създаване на правила за участие в BOSC.
-



# Данните в BOSC ще доведат до:

- Архивиране на данни без ограничения за файлов формат;
- Създаване и поддържане на база от метаданни;
- Управление на достъпа, отчетност, статистики;
- Организиране и управление на съдържанието според структурата на организацията по различните звена
- Навигация и търсене в данни и метаданни;
- Потребителски интерфейс (уеб базиран);
- Програмен/машинен интерфейс за обработка или обмен на голям обем от данни;
- Интерфейс за оперативна съвместимост с OpenAIRE и EOSC.

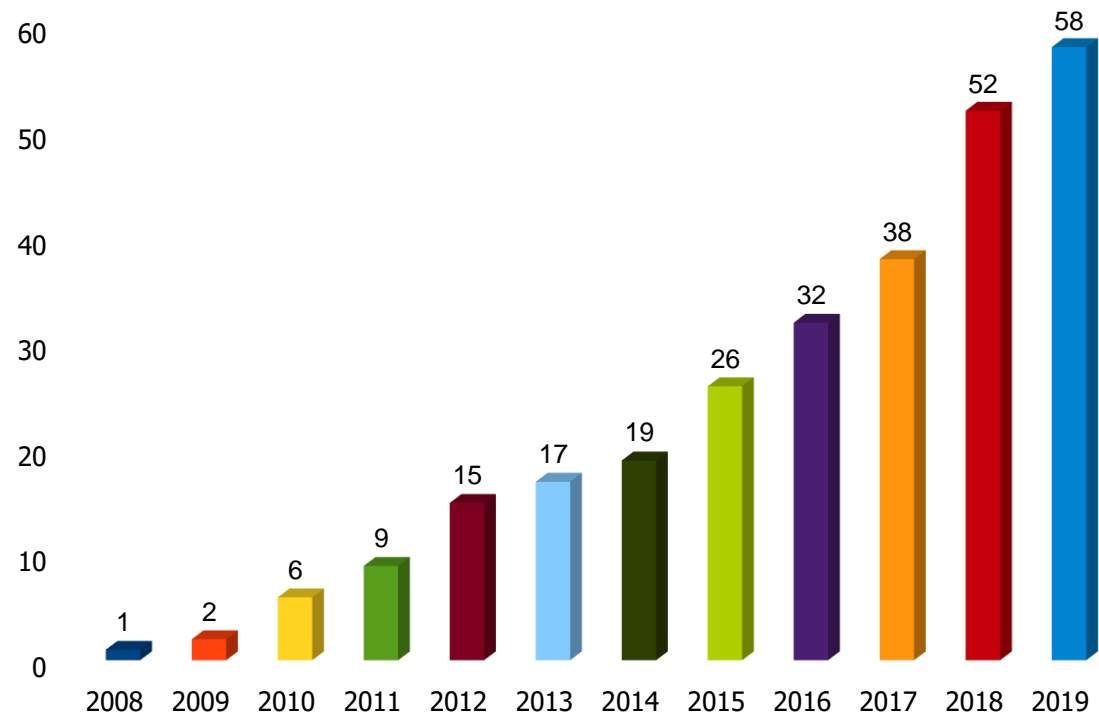
# Архитектура



# Архиви

Open Access Bulgarian Repositories 2019	Publications	Software	Link
New Bulgarian University Repository	2806	EPrints 3.3.12	<a href="http://eprints.nbu.bg">http://eprints.nbu.bg</a>
BulDML at IMI-BAS	2869	DSpace 1.6	<a href="http://sci-gems.math.bas.bg">http://sci-gems.math.bas.bg</a>
Digital repository of Sofia University	1613	DSpace 1.8.2	<a href="https://research.uni-sofia.bg">https://research.uni-sofia.bg</a>
Research BFU - Burgas Free University	801	Dspace 1.8.1	<a href="http://research.bfu.bg:8080/jspui/">http://research.bfu.bg:8080/jspui/</a>
Electronic Repository - Central Medical Library - MU, Sofia	1600	Dspace 3.0	<a href="http://nt-cmb.mu-sofia.bg:8080/jspui/">http://nt-cmb.mu-sofia.bg:8080/jspui/</a>
Medical University - Varna Prof. Dr. Paraskev Stoyanov	381	EPrints 3.3.15	<a href="http://eprints.mu-varna.bg">http://eprints.mu-varna.bg</a>
BGOpenAIRE at IMI-BAS	119	DSpace 1.6.2	<a href="http://www.bg-openaire.eu">http://www.bg-openaire.eu</a>

# Списания в България с отворен достъп



# Институт по математика и информатика БАН



Цифровото хранилище Bulgarian Digital Mathematics Library (BuIDML),

поддържано от ИМИ-БАН, съдържа онлайн варианти на издания на института.

<http://sci-gems.math.bas.bg/jspui/>

# ТЪРСЕНЕ НА ПУБЛИКАЦИЯ

РАЗШИРЕНО ТЪРСЕНЕ

Търсене по автор, заглавие, ключови думи...

🔍 ТЪРСИ

Насоки за търсене

## ДОСТАВЧИК НА СЪДЪРЖАНИЕ

Стопанска академия "Димитър ... (3 635)

Нов български университет (2 109)

Институт по математика и инфо... (1 549)

Национален център за информа... (1 423)

## ГОДИНА НА ПУБЛИКУВАНЕ

2020 (228)

2019 (1 539)

2018 (764)

2017 (817)

## ТИП РЕСУРС

Публикация (9 448)

Докторска дисертация (1 414)

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# ТЪРСЕНЕ НА ПУБЛИКАЦИЯ

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## ФИЛТРИ

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## Editorial - Serdica Journal of Computing 2015

26 април 2018, Публикация,  Отворен достъп

**Автори:** Stanchev, Peter

This special double issue of Serdica Journal of Computing is dedicated to the 80 th anniversary of the birthday of Professor Edward A. Friedman, internationally renowned scientist and innovative educator, versatile humanitarian, and member of our editorial board.

Handle: <http://hdl.handle.net/10525/2895>



## Preface

26 април 2018, Публикация,  Отворен достъп

**Автори:** Stanchev, Peter

In recent years, the research community has demonstrated considerable interest in Digital Culture (DC) and its online presentation, accessibility, exploitation, preservation and reuse through new tools and services to model, analyse and visualize vast amounts of DC data. The focus is on the searc ...



# Teaching Materials Repository

8 юни 2011, Публикация,  Отворен достъп

**Автори:** Stanchev, Peter; Nisheva-Pavlova, Maria; Geske, John

 *Repository | Gaming | Semantic Web*

The paper presents results from the development of a methodology and corresponding software tools for building an academic repository.

The repository was filled up with gaming material. The repository architecture and key features of the search engine are discussed. The emphasis

falls on solutions of the large set of problems concerning the development of proper mechanisms for semantics-based search in a digital repository.

\* This work was supported in part by the FP7 projects: OpenAIRE – “Open Access Infrastructure for Research in Europe”, EuDML – “The European Digital Mathematics Library”, and by the Bulgarian National Science Fund under the Project D002-308 “Automated Metadata Generating for e-Documents Specifications and Standards”.

Handle: <http://hdl.handle.net/10525/1601>



*Публикацията е извлечена автоматизирано от хранилището на Институт по математика и информатика - БАН.*

 **Подробна информация**

## Издатели

Institute of Mathematics and Informatics Bulgarian Academy of Sciences





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**Title:** Teaching Materials Repository

**Authors:** Stanchev, Peter  
Nisheva-Pavlova, Maria  
Geske, John

**Keywords:** Repository  
Gaming  
Semantic Web

**Issue Date:** 2010

**Publisher:** Institute of Mathematics and Informatics Bulgarian Academy of Sciences

**Citation:** Serdica Journal of Computing, Vol. 4, No 3, (2010), 371p-384p

**Abstract:** The paper presents results from the development of a methodology and corresponding software tools for building an academic repository. The repository was filled up with gaming material. The repository architecture and key features of the search engine are discussed. The emphasis falls on solutions of the large set of problems concerning the development of proper mechanisms for semantics-based search in a digital repository.

**URI:** <http://hdl.handle.net/10525/1601>

**ISSN:** 1312-6555

**Appears in Collections:** [Volume 4 Number 3](#)

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## About

The Tenth International Conference on **Digital Presentation and Preservation of Cultural and Scientific Heritage—DiPP2020** aims at presenting innovative results, research projects and applications in the field of digitisation, documentation, archiving, representation and preservation of global and national tangible and intangible cultural and scientific heritage. The main focus is to provide open access to digitised cultural heritage and to set up sustainable policies for its continuous digital preservation and conservation. The priority area is the digital presentation and preservation of cultural and historical objects under conditions of risk, including those from the Burgas region. The forum will demonstrate innovative technologies and prototypes, including digital repositories, digital archives, virtual museums and digital libraries, which result from established practices and achievements in the field. Representatives of public and specialised libraries, museums, galleries, archives, centres, both national and foreign research institutions and universities are invited to participate and exchange experiences, ideas, knowledge and best practices of the field.

There will also:

**Workshop on Open Access to Scientific Publications, Data and Data Science, Bulgarian Open Science Cloud** which will primarily focus on the following activities:

- Open Access indicators;
- Disseminate partners' best practices;
- Discuss research problems in the field;
- Discuss the possibilities of establishing a network of open-access repositories;
- Contribute to the problems of the harmonization of national legislation and practices; and
- Discuss the possibilities of developing training courses for creators and managers of scientific digital repositories to ensure interoperability.

**DiPP2020 co-organisers:** Regional Academic Center - Burgas, Bulgarian Academy of Sciences, Regional Historical Museum – Burgas, Burgas Free University, Index Ltd.

**DiPP2020 Conference:** September 24–26, 2020

**Location of the Event:** Burgas, Bulgaria

**Working language of the conference:** English

The DiPP2020 is organized under the patronage of **UNESCO** and the support of **Burgas Municipality**.