



TÉCNICO LISBOA



Digitalização e Integração: Perspetivas

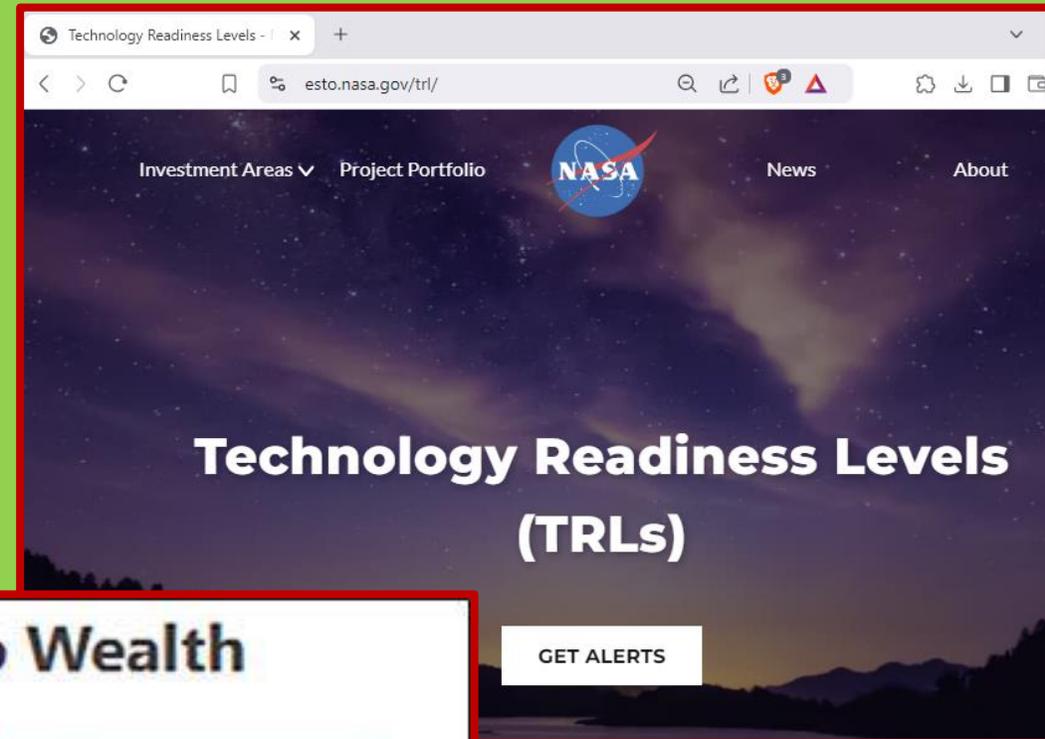
José Borbinha

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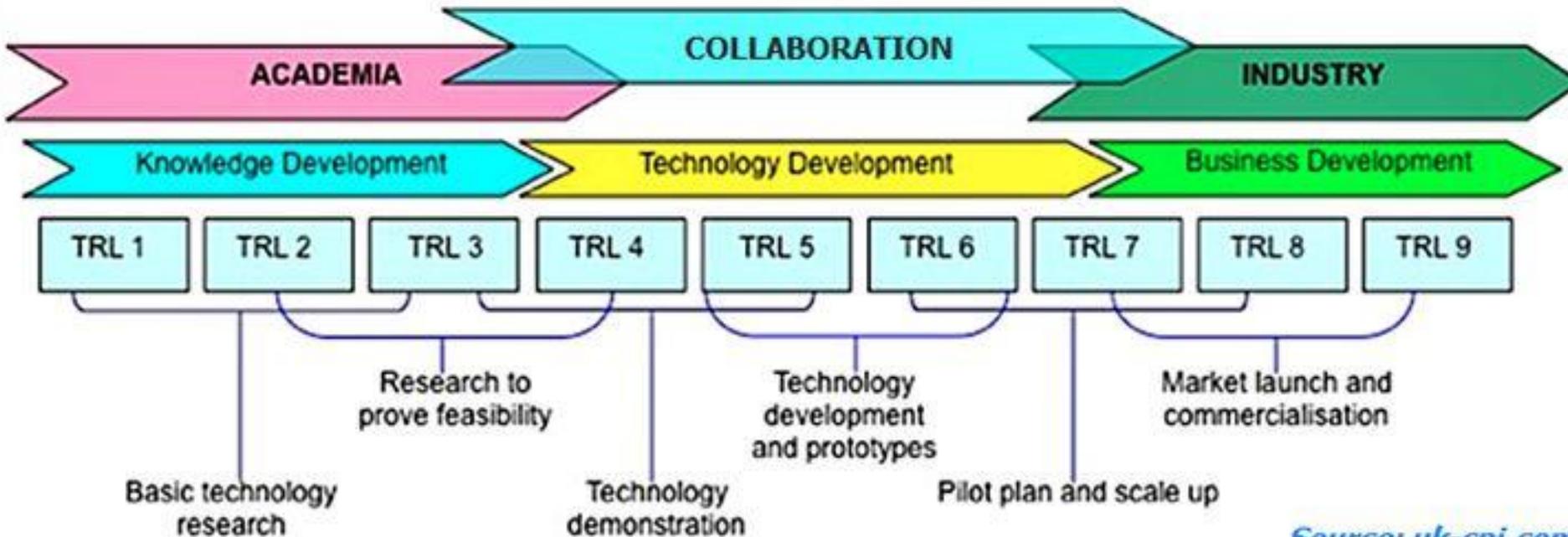
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(coordenador)

Investigador Integrado - INESC-ID, Grupo de Sistemas de Informação e Apoio à Decisão

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The Innovation Chain: Converting Science into Wealth



Source: uk-cpi.com

The size of the world population over the long-run

The UN demographers expect the world population to peak at 10.4 billion in 2086 and to decline thereafter.

The pink line shows the projection by the UN Population Division.

The purple line shows the size of the world population over the last 12,000 years.

10 billion are projected for the year 2058

9 billion are projected for the year 2036

8 billion in 2023

7 billion in 2011

6 billion in 1999

5 billion in 1987

4 billion in 1974

3 billion in 1960

2 billion in 1928

1.65 billion in 1900

990 million in 1800

600 million in 1700

In 10,000 BCE the world population was around 4 million

The average growth rate from 10,000 BCE to 1700 was just 0.04% per year

In the year 0 the world population was around 190 million

In the mid 14th century the Black Death pandemic killed between a quarter and half of all people in Europe.

10,000 BCE 8,000 BCE 6,000 BCE 4,000 BCE 2,000 BCE 0 2000

Global life expectancy before 1800 was less than 30 years

Global life expectancy in 2023: 73 years

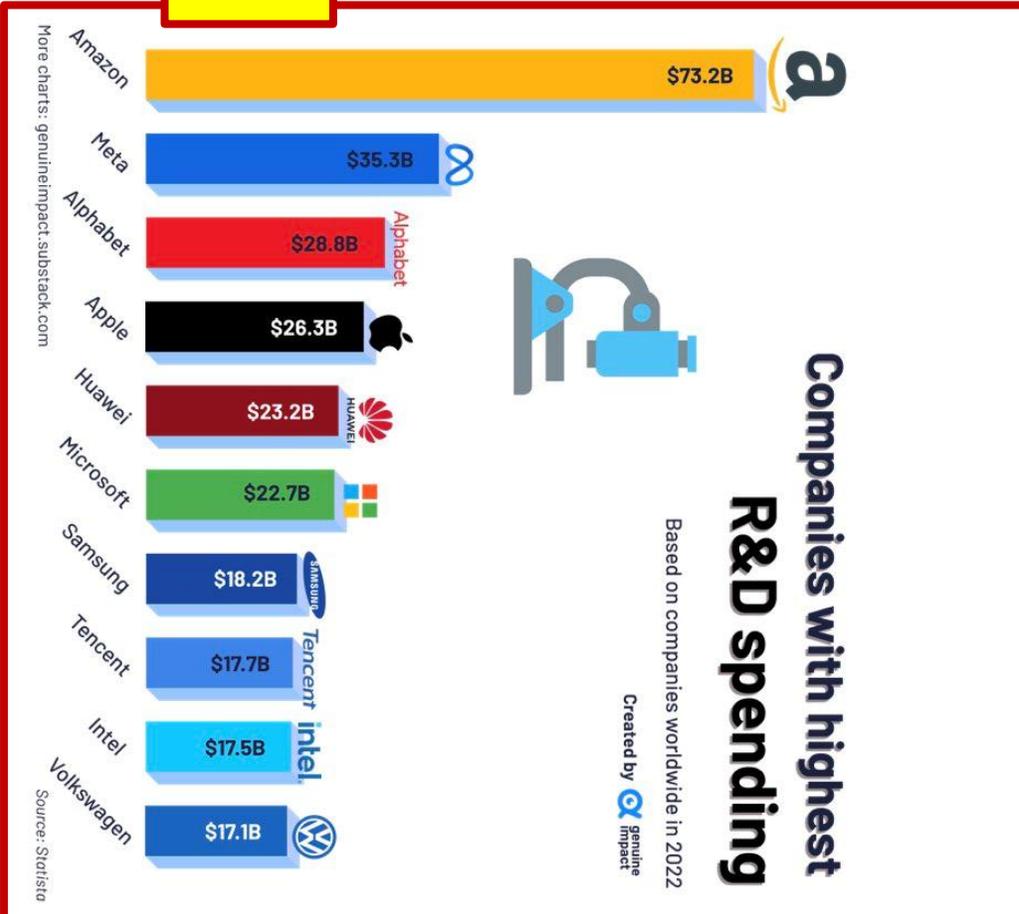
The Top 20 R&D Spenders

Companies in RED have been among the top 20 R&D spenders every year since 2005.

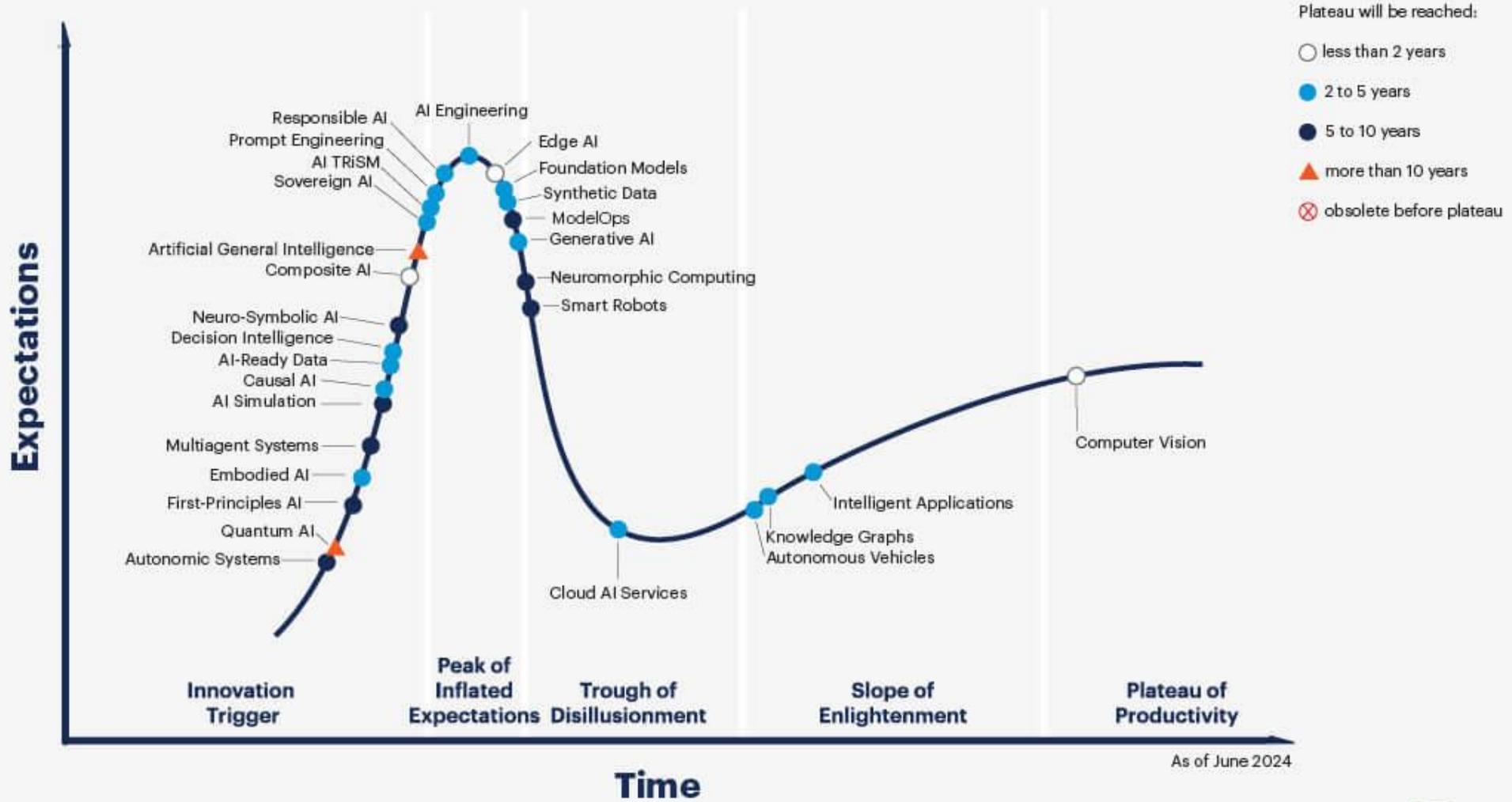
RANK		R&D Spending			Headquarters	Industry	
2016	2015	Company	2016 US\$ Billions	Change from 2015			% of Revenue
1	1	Volkswagen	\$13.2	2.7%	5.6%	Europe	Auto
2	2	Samsung	\$12.7	-3.0%	7.2%	South Korea	Computing and Electronics
3	7	Amazon	\$12.5	35.2%	11.7%	North America	Software and Internet
4	6	Alphabet	\$12.3	24.9%	16.4%	North America	Software and Internet
5	3	Intel	\$12.1	5.1%	21.9%	North America	Computing and Electronics
6	4	Microsoft	\$12.0	5.8%	12.9%	North America	Software and Internet
7	5	Roche Holding	\$10.0	-3.2%	19.9%	Europe	Healthcare
8	9	Novartis	\$9.5	-1.6%	19.2%	Europe	Healthcare
9	10	Johnson & Johnson	\$9.0	6.5%	12.9%	North America	Healthcare
10	8	Toyota	\$8.8	5.1%	3.7%	Japan	Auto
11	18	Apple	\$8.1	33.5%	3.5%	North America	Computing and Electronics
12	11	Pfizer	\$7.7	-8.4%	15.7%	North America	Healthcare
13	13	General Motors	\$7.5	1.4%	4.9%	North America	Auto
14	14	Merck	\$6.7	-6.6%	17.0%	North America	Healthcare
15	15	Ford	\$6.7	0.0%	4.5%	North America	Auto
16	12	Daimler	\$6.6	4.5%	4.0%	Europe	Auto
17	17	Cisco	\$6.2	-1.4%	12.6%	North America	Computing and Electronics
18	20	AstraZeneca	\$6.0	7.5%	24.3%	Europe	Healthcare
19	32	Bristol-Myers Squibb	\$5.9	30.6%	35.7%	North America	Healthcare
20	22	Oracle	\$5.8	4.8%	15.6%	North America	Software and Internet
TOP 20 TOTAL			\$179.4	6.3%	8.7%		

2005

2022



Hype Cycle for Artificial Intelligence, 2024



Source: Gartner
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gartner.com/en/topics/artificial-intelligence

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What Is Artificial Intelligence?

Artificial intelligence (AI) applies advanced analysis and logic-based techniques to interpret events, and support and automate decisions and actions. Use this guide to understand key AI terms.

Why does your organization need to define artificial intelligence?

What are large language models?

What are machine learning and deep learning?

What are the main established AI techniques?

What are the main emerging AI techniques?

What are some other key AI terms executives may need to know?

What is the future of artificial intelligence and AI technologies?

Latest Artificial Intelligence Insights

Conferences for AI Leaders

X in f

Why does your organization need to define artificial intelligence?

Gartner defines artificial intelligence (AI) as applying advanced analysis and logic-based techniques, including machine learning (ML), to interpret events, support and automate decisions, and take actions. This definition is consistent with the current and emerging state of AI technologies and capabilities, and it acknowledges that AI now generally involves probabilistic analysis (combining probability and logic to assign a value to uncertainty).

Other organizations and individuals may use different definitions. There is no single, universally accepted descriptor for artificial intelligence as there is such a wide range of ways in which AI can support, augment and automate human activities, and learn and act independently.

To capture the **opportunity of AI** as an organization, however, you will need a rigorous AI strategy — for which you need to articulate and agree on a generally accepted definition focused on what you want AI to accomplish.

Leave room for differences of opinion, but make sure that business, IT and data and analytics leaders don't fundamentally disagree about what AI means to the organization or you will be unable to design a strategy that captures the benefits.

Note that AI technology vendors are also likely to have their own definitions of the term. Ask them to explain how their offerings meet your expectations for how AI will deliver value.



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Federated
European
Genome-phenome
Archive



European
Genomic Data
Infrastructure



Federated
European
Genome-phenome
Archive



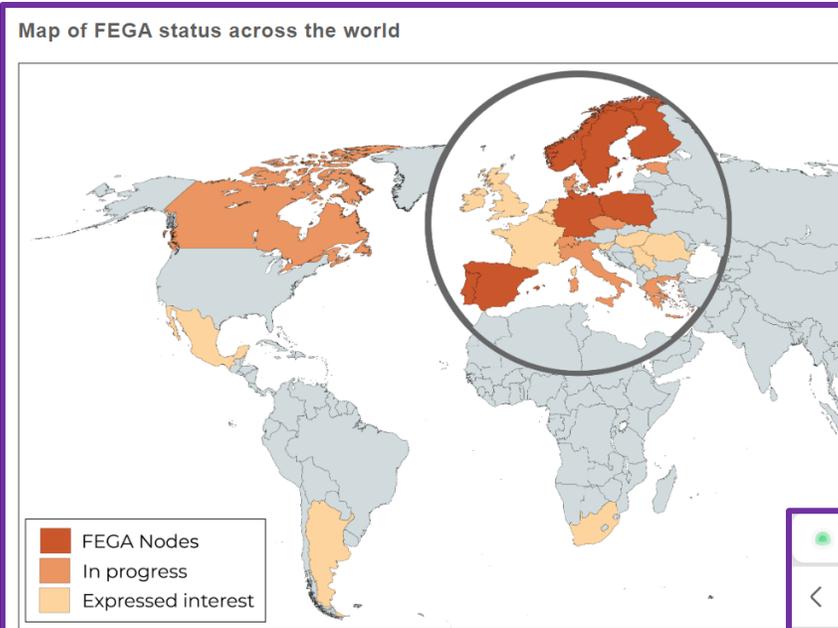
European
Genomic Data
Infrastructure



The **Federated EGA** is a global resource for discovery of and access to sensitive human omics and associated data consented for secondary use, through a network of human data repositories to accelerate biomedical research and improve human health. The Federated EGA network was launched in September 2022 with five inaugural nodes, and **since 2023 seven operational nodes** can share data across national borders in adherence to European and national laws.

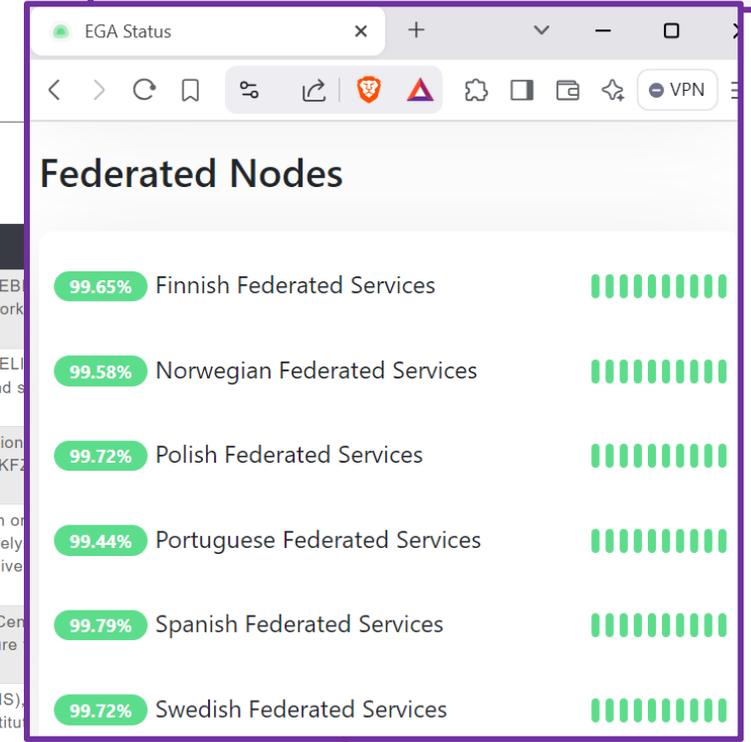
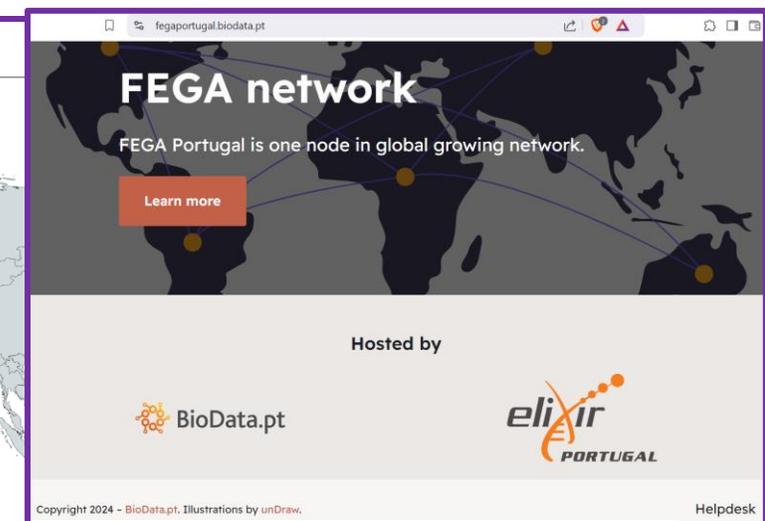
A few weeks after FEGA's official launch, in November 2022, the **European Genomic Data Infrastructure (GDI)** project was kicked-off. This European Commission co-funded project, coordinated by ELIXIR, is aimed to deliver federated, sustainable and secure data infrastructure to access genomic and related phenotypic and clinical data across Europe. This project supports the aim of the **1+MG initiative** (25 EU countries, Norway and UK) to enable personalised medicine and health through a shared framework and infrastructure for securely accessing and integrating high quality genomic data and other health data across borders. 1+MG will be an integral component of the European Health Data Space (EHDS) for secondary use (Healthdata@EU) as an authorised participant.

(...)
FEGA and GDI are both built on open and interoperable software solutions, a subset of which are based on the **LocalEGA components**. FEGA and GDI implementation solutions are based on international community standards, for example those developed by the **Global Alliance for Genomics and Health**, which contributes to making them interoperable...



Current status of the FEGA Network

Node	Description
CEGA	Central EGA is managed by the Centre for Genomic Regulation (CRG) and EMBL-EBI, a trusted repository for sensitive data since 2008. CEGA coordinates the FEGA network and the EGA catalogue.
Finland	FEGA Finland is hosted by CSC - IT Center for Science Ltd., which is the national ELIXIR node in Finland. CSC is a state-owned company specialising in providing high-quality IT infrastructure and services for education and research.
Germany	The German Human Genome-Phenome archive (GHGA) is part of the German National Infrastructure (NFDI). It is coordinated by the German Cancer Research Center (DKFZ) and its academic partners.
Norway	FEGA Norway is a service by ELIXIR Norway, the Norwegian node of the European Genomic Data Infrastructure. ELIXIR Norway is hosting the service relying on the infrastructure for sensitive data. ELIXIR Norway is a consortium of 5 Norwegian universities by University of Bergen.
Spain	FEGA Spain is co-hosted by the Barcelona Supercomputer Center (BSC) and the Centre for Genomic Regulation (CRG), both part of ELIXIR Spain and the Spanish National Infrastructure for Genomics and Health (INGENIO) associated with Science and Technology (IMPaCT).
Sweden	FEGA Sweden is hosted by the National Bioinformatics Infrastructure Sweden (NBIS), Uppsala University. NBIS forms the bioinformatics platform at SciLifeLab and constitutes the European organisation ELIXIR.
Poland	FEGA Poland is hosted by Biobank Lodz, which is part of University of Lodz. Biobank Lodz is an element of the infrastructure of the Regional Digital Medicine Centers established by the Medical Research Agency.
Portugal	FEGA Portugal is managed by BioData.pt, the distributed infrastructure for Life and Health data for Portugal. This entity is a non-profit association of 15 life sciences R&I organisations spread across the country, and the home of ELIXIR Node in Portugal.





English

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Common European Data Spaces

Common European Data Spaces will make more data available for access and reuse. This will be done in a trustworthy and secure environment for the benefit of European businesses and citizens.

Building the single market for data

Data is reshaping the way we produce, consume and live. From real-time navigation to improved personalised medicine, precision farming or reducing CO₂ emissions, data is a key ingredient for innovative products and services.

To harness the value of data for the benefit of the European economy and society, the [European strategy for data](#) of February 2020 set out the path to the creation of Common European Data Spaces in a number of strategic fields: health, agriculture, manufacturing, energy, mobility, financial, public administration, skills, the European Open Science Cloud. The green deal data space also stresses meeting the Green Deal's objectives as a key priority.

Since then, data spaces in other important areas such as media and cultural heritage have also emerged. Together, the data spaces will gradually be interconnected to form the [single market for data](#).

Share

Quick Links

- [Status of Common European data spaces](#)
- [EU-funded R&I projects on data](#)

Follow the latest progress and learn more about getting involved.

Follow the Commission's work on tech and digital @DigitalEU

Rollout of Common European Data Spaces

Common European Data Spaces are currently being developed across 14 sectors/domains. Additional updates (including links) will be published when they become available.

Agriculture	AgriDataSpace , Divine , CrackSense , ScaleAgData , AgDataValue , 4Growth, Dig4Live
Cultural Heritage	Europeana_pro , Eureka3D , 5Dculture , DE-BIAS , A4Europeana
Energy	IntNET , OMEGA-X , EDDIE , Enershare , Synergies , Data cellar
Finance	Procurement under the Digital Europe programme (under development) GREAT , AD4GD , B-Cubed , FAIRCUBE , USAGE
Green deal	Smart cities and communities DS4SSCC DS4SSCC-DEP (under development)
Health	European Health Data Space: MyHealth@EU HealthData@EU Pilot Joint Action Towards the European Health Data Space – TEHDAS Cancer images: EUCAIM Genomics: GDI
Language	European language data space Data Space 4.0
Manufacturing	SM4RTENANCE UNDERPIN
Media	TEMS
Mobility	PrepDSpace4Mobility deployEMDS
Public administration	Legal (under development) QOTS - Once Only Technical System Public procurement: PPDS
Research and Innovation	The European Open Science Cloud (EOSC) , Skills4EOSC , EOSC Focus , FAIR-IMPACT , RDA TIGER , FAIRCORE4EOSC , A4EOSC , EuroScienceGateway , FAIR-EASE , RAISE , SciLake , EOSC4Cancer , GraspOS , CRAFT-LOA , AquaINFRA , Blue-Cloud 2026 , OSCAR5 , EVERSE , OSTrails , EOSC Beyond , EOSC-ENTRUST , SIESTA , TITAN
Skills	DS4Skills EDGE-Skills (under development)
Tourism	DATES DESTI



Declaration & Initiative: Cross-border access to genomic data, implementation of genomics-based health

2018 2020 2022 2023 2026 2027

Design & Testing

Scale-up & Sustainability



European Genomic Data Infrastr: x +

gdi.onemilliongenomes.eu

European Genomic Data Infrastructure

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Providing access to genomic data to improve research, policy making and healthcare across Europe

The **Genomic Data Infrastructure (GDI)** project is enabling access to genomic and related phenotypic and clinical data across Europe. It is doing this by establishing a federated, sustainable and secure infrastructure to access the data. It builds on the outputs of the **Beyond 1 Million Genomes (B1MG)** project and is realising the ambition of the **1+Million Genomes (1+MG)** initiative.

[Subscribe to our newsletter](#)

The data

The project involves **human genomic and related phenotypic and clinical data** held in databases across Europe. The project will focus on the **Genome of Europe** (a network of national reference genome collections), and cancer and infectious disease use cases. "Real" synthetic data will be used for validation before data are available through the infrastructure.

Who will access it?

Controlled access will be given to **approved clinicians, scientists in the public and private sector and healthcare policy makers**. Non-sensitive and aggregated data will be openly discoverable through the **European Genome Dashboard** and a federated query system. This system will support genotypic and phenotypic queries in natural language.

What are the benefits?

Who is running it?

Rollout of Common European Data Spaces

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Skills	DS4Skills , EDGE-Skills (under development)
Tourism	DATES , DESTI

Country	Institute
Belgium	Interuniversity Microelectronics Centre (IMEC) Sciensano (SCI) VIB VZW
Bulgaria	Medical University of Sofia (MUS) Ministry of Education and Science (MESDC)
Croatia	Ruder Boskovic Institute (RBI)
Cyprus	Ministry of Health (MPHS-MQH) University of Cyprus (UCY)
Czech Republic	Masaryk University (MUNI)
Denmark	Danish National Genome Center (NGC)
Estonia	Ministry of Social Affairs (MSAD) University of Tartu (UTARTU)
Finland	Finnish Institute for Health and Welfare (THL) IT Center for Science (ICS) Ministry of Social Affairs and Health (STM) University of Helsinki (UHK)
France	Central Analyser of Data (CAD), joining in 2024 National Centre for Scientific Research (CNRS) National Institute of Health and Medical Research (INSERM)
Germany	Eberhard Karls University of Tübingen (UT) EMPIRICA Federal Ministry of Education and Research (BMBWF) Federal Ministry of Health (BMG) German Cancer Research Centre (DKFZ) University Hospital of Aachen (UKA) University of Freiburg Albert Ludwigs (ALU-LF) Albert Ludwigs Universität Freiburg
Hungary	National Institute of Oncology (IOO) National Research, Development and Innovation Office (NKFIH)
Ireland	Royal College of Surgeons in Ireland (RCSI) The Health Research Board (HRB) University College Dublin (UCD) University of Limerick (UL) University of Maynooth (UM)
Italy	Catholic University of the Sacred Heart (UCSC) Giannina Gaslini Institute (GGI) Italian Institute of Technology (IIT) The National Research Council (CNR) Vita-Salute San Raffaele University (VUSRF)
International organisations	Biobanks And Biomolecular Resources Research Infrastructure Consortium (BBMRI) European Molecular Biology Laboratory - ELIXIR and EMBL-EBI
Latvia	Latvia Bio Medicine Center for Research and Studies (LBMC) Ministry of Health of the Republic of Latvia (Msh-LV)
Lithuania	National Cancer Institute (NCI) The Hospital of Lithuanian University of Health Sciences Kauno Klinikos (HKL) Vilnius University Hospital Santaros Klinikos (VULSK)
Luxembourg	The Ministry of Higher Education, Research and Innovation (MESRI) FNED OIE
Malta	The Ministry for Health and Active Ageing (MHA)
The Netherlands	Erasmus University Medical Center Rotterdam (Erasmus MC) Health-RI (HR) The Netherlands Cancer Institute (NKI) University Medical Center Groningen (UMCG)
Norway	Norwegian Directorate of Health (HOD) University of Bergen (UB) University of Oslo (UO)
Portugal	Associação BIP4DAB (BioData.pt) Instituto Superior Técnico (IST) National Health Institute Dr. Ricardo Jorge (INSA) University of Aveiro (UAVR)
Romania	Authority for the Digitalisation of Romania (ADPR) Genomics Research and Development Institute (ICDG)
Slovenia	University of Ljubljana (ULJ) University of Maribor (UM)
Spain	Barcelona Supercomputing Center (BSC) Carlos III Health Institute (ISCIII) Centre for Genomic Regulation (CRG) The National Centre for Genomic Analysis (CNAG)
Sweden	Stockholm University (SU) University of Umeå (Umeå) University of Uppsala (UJ) Swedish Governmental Agency for Innovation Systems (VINNOVA)

Realising a vision for European healthcare



The vision

In 2018, the **1+Million Genomes (1+MG) initiative** was launched to create a European data infrastructure for genomic data. This would implement common national rules enabling federated data access. Twenty six European countries have signed the declaration. The goal of the initiative is **to enable secure access to genomic and the corresponding clinical data across Europe for better research, personalised healthcare and health policy making.**



Designing and testing

In 2020, the **Beyond 1 Million Genomes (B1MG) project** began. The project developed guidelines on how to implement the 1+MG initiative. Amongst its outputs are blueprints and recommendations for building a federated network of genomic data (the **1+MG Framework**). It also produced tools to help countries self assess their readiness to implement genomics into healthcare systems.



Scaling up and sustaining

In 2022, the GDI project began. This €40M project is building on the preparatory work of 1+MG working groups, the B1MG project and investments of EU countries. It is **creating and deploying the technical capacity for accessing genomic data.** In this way, it will implement the vision of the 1+MG initiative.

Portugal

- Associação BIP4DAB (BioData.pt)
- Instituto Superior Técnico (IST)
- National Health Institute Dr. Ricardo Jorge (INSA)
- University of Aveiro (UAVR)

National Health Institute Doutor Ricardo Jorge	INSA	Portugal
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digital-strategy.ec.europa.eu/en/policies/1-million-genomes

Shaping Europe's digital future

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European '1+ Million Genomes' Initiative

The 1+ Million Genomes (1+MG) initiative has the potential to improve disease prevention, allow for more personalised treatments and support groundbreaking research.

What is the 1+MG flagship initiative?

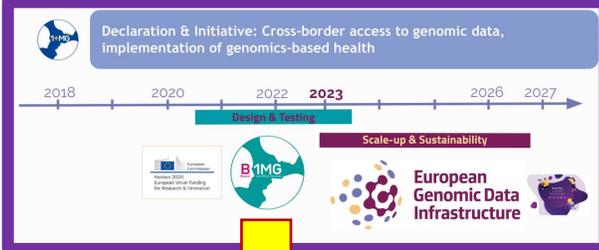
The EU's flagship '1+ Million Genomes' (1+MG) initiative aims to enable secure access to genomics and the corresponding clinical data across Europe to support groundbreaking research and health policy making and incentivise personalised healthcare treatments with the potential to improve disease prevention. This is one of the world's biggest projects on genomics and contributes chiefly to setting global standards in this domain.

Genomics has become increasingly important globally. The European Union places a strong emphasis on citizen-focused and patient-friendly genomic collaboration and research. As part of this commitment, the EU ensures that the highest standards are applied to the usage, access, and storage of genomic data. The 1+ Million Genomes (1+MG) initiative, one of the world's largest projects in this field, plays a pivotal role in setting global standards. Furthermore, its connection to the [European Health Data Space](#) will provide an additional boost to the information potential benefiting researchers, healthcare professionals and, eventually, every citizens.

On April 10, 2018, during the [2018's Digital Day](#) event, 25 EU countries, along with the UK and Norway, signed the Member States' [declaration](#) aimed at strengthening efforts to establish a European data infrastructure for genomic data and implementing common national rules enabling federated data access. The initiative forms part of the EU's agenda for the [Digital Transformation of Health and Care](#) and is aligned with the goals of the [European Health Data Space](#).



Declaration & Initiative: Cross-border access to genomic data, implementation of genomics-based health




Share

Quick Links

1+MG Framework website

Follow the latest progress and learn more about getting involved.

Follow the Commission's work on eHealth @eHealth_EU



framework.onemilliongenomes.eu

1+MG Framework

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The 1+MG Framework is a series of components based on the output of the 1+MG projects that provide guidance on ELSI, data quality, data standards, and technical infrastructure standards and APIs.

Core 1+MG Framework

Technical framework

- Data quality & inclusion**
Sequence data generation and quality requirements for WGS/WES data to be labelled as 1+MG compliant
- Data models, standards & ontologies**
1+MG minimal data models for different use cases and recommendations on ontologies and data standards
- Technical infrastructure**
Stack of standards, open source references implementations, synthetic data and proof of concepts that can be used to establish a 1+MG node

Implementation

- Governance and ELSI**
Guidance and recommendations on how to address governance and ELSI aspect to ensure data can be made available
- Genomics into healthcare**
Assessment Maturity Level Model to guide healthcare systems on their journey to implement genomic medicine
- National implementation**
Find pointers to country specific information resources and national research data management practices

How the project is organised | The 1+MG Framework

Use cases | 1+MG Framework

framework.onemilliongenomes.eu/usecases

1+MG Framework

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1+MG Framework

- European Project Alignment
- Governance and ELSI
- Data models, standards & ontologies
- Technical infrastructure
- Data quality & inclusion
- Genomics into healthcare
- Use cases**
- Rare diseases
- Cancer
- Common and complex diseases
- Infectious diseases
- Population genomics
- National implementation

Use cases

This section outlines scenarios in which the project's infrastructure can make a significant impact, and are intended to guide the development of the project's infrastructure and inform its priorities.

Search Type here...

Cancer

The Cancer Use Case has been the secondary use case to test the 1+MG Infrastructure. Although a work still in progress it has been acknowledged that the architecture largely supports the Cancer Use Case in its current format.

Common and complex diseases

The Common and Complex Disease Use Case are focussing on the development of a national-focussed decision support software based on Polygenic Risk Scores (PRS) results.

Infectious diseases

The Infectious Disease Use Case aims to strengthen European preparedness against future pandemics.

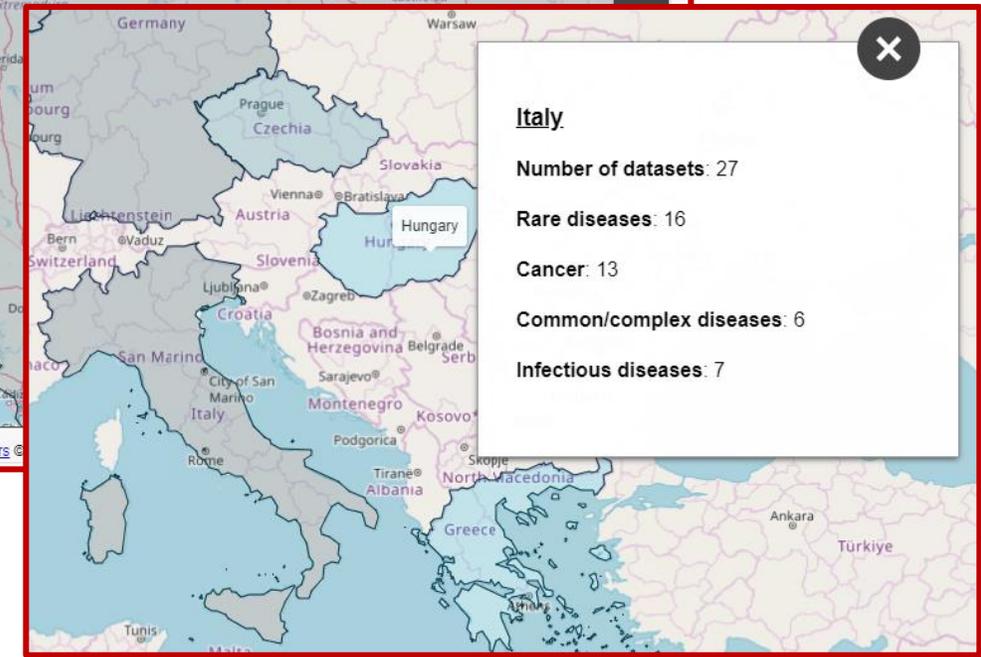
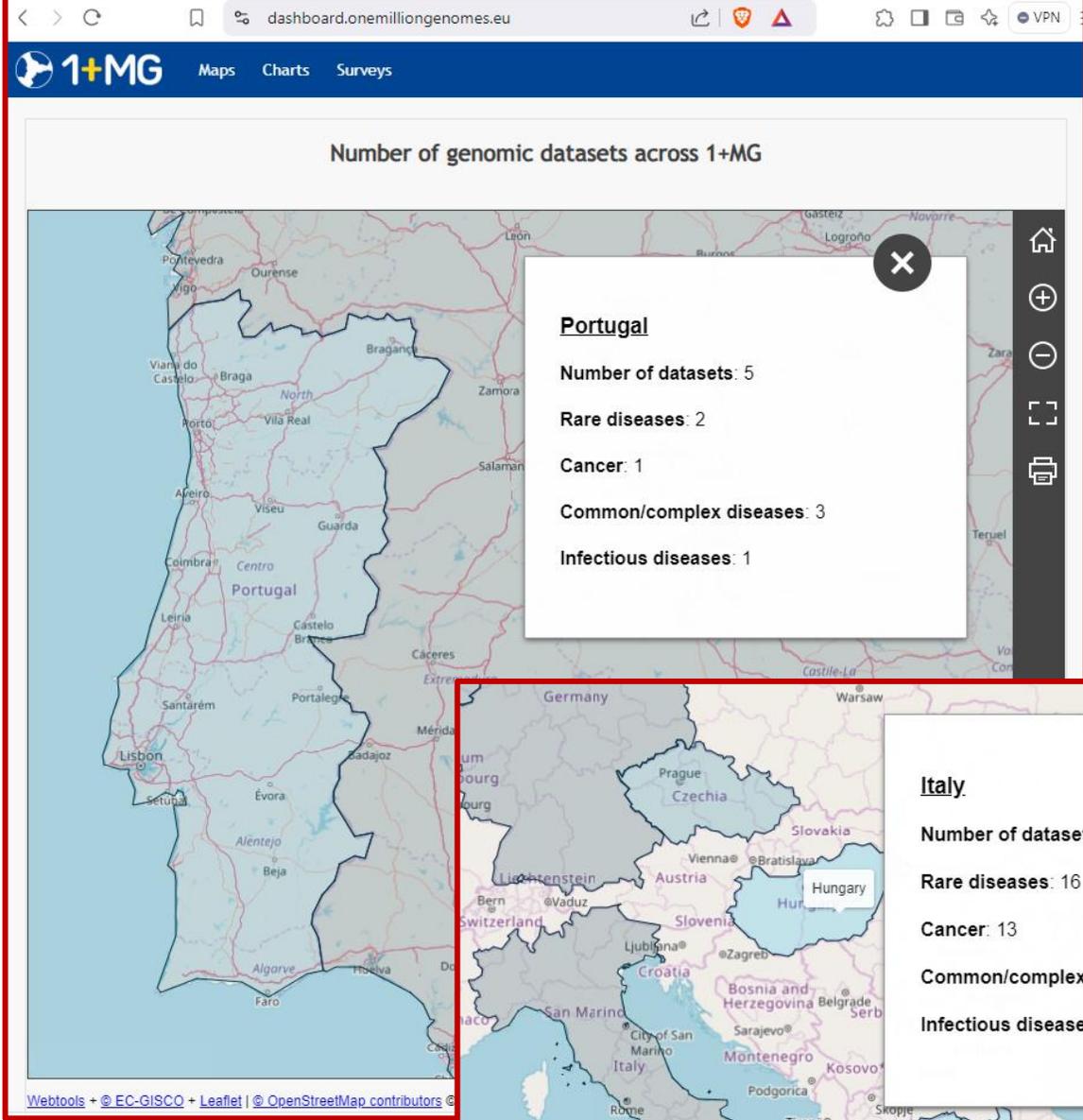
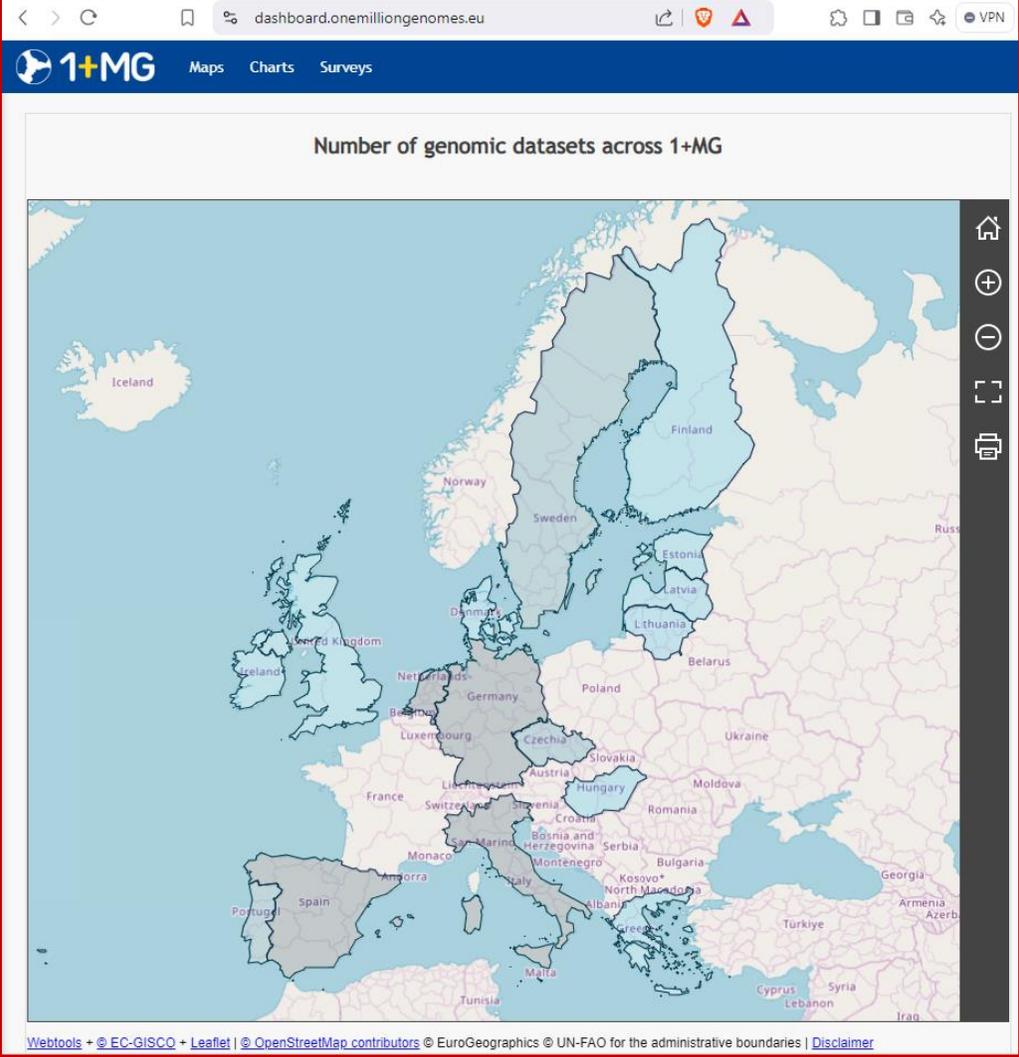
Population Genomics - Genome of Europe (GoE)

The Genome of Europe project was created to have a Europe-wide collection of subgroup-specific reference genomes to support population genomics and make precision medicine more robust.

Rare diseases

The rare disease use case has been the central use case demonstrating the 1+MG Infrastructure to date.

...
discussões recentes na iniciativa têm feito emergir o interesse em incluir nestes “uses cases” cenários de farmacogenética / farmacogenómica
...



COMMONALITIES



Vision & scope

A node hosting human genomics data and sharing public metadata within the network, thus providing federated discovery and access.



Software solutions & standards

Interoperable software solutions based on the same GA4GH international standards.



Key partners

Largely overlapping institutions involved in designing and operating FEQA and GDI nodes.

DIFFERENCES



Governance model

FEQA nodes are Data Processors. The DACs are Data Controllers for their own datasets.



Federated European Genome-phenome Archive



European Genomic Data Infrastructure

The EDIC legal entity (part of the EHDS) will be the data controller for all the hosted datasets.



Data inclusion criteria

Almost any omics in need of control access.

Initially, WES and WGS produced for the Genome of Europe and 1+ Million Genomes initiatives.



Software stack maturity

FEQA provides a software solution for data and metadata submission, storage, and permissions management.

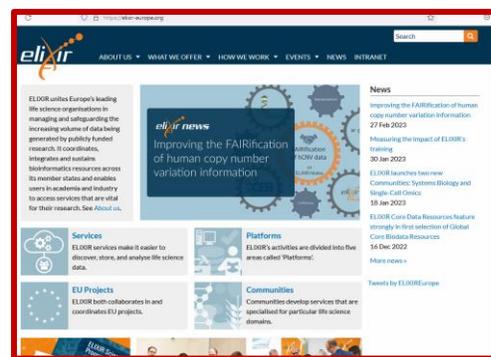
GDI is building open source reference implementation for the 5 functionalities covering the full data life cycle.

Estratégia BioData.pt

Manter os dois serviços, pois cada um poderá melhor servir propósitos específicos:

- FEQA => Academia, I&D, Bioinformática, ...
- GDI => Medicina genómica, ... => ...projeto TEHDAS2 (“cross-border secondary use of health data”)

The screenshot shows the TEHDAS2 Project website. The main heading is "Project". Below it, a paragraph states: "The TEHDAS2 joint action is creating concrete guidelines and technical specifications for using health data across country borders. The work involves 29 countries." There are social media sharing icons and a "Share away! If you feel like it." prompt. A section titled "What is our goal?" contains a quote: "Our goal is to develop common guidelines and technical specifications to facilitate smooth access to health data and strengthen European collaboration in using data efficiently. Secondary use of health data enhances competitiveness of European research and innovation in the health sector." At the bottom, a large yellow arrow points to the "Portugal" section, which is titled "Serviços Partilhados do Ministério da Saúde". On the right side of the page, there is a vertical list of project partners from various countries, including Finland, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.



2010 - 1st proposal to Portuguese ELIXIR node (iBET, IGC, INESC-ID, ITQB)

2011 - Bioinformatics platform about woody plants in ELIXIR's scope (CEDOC, FCCN, iBET, IGC, INESC-ID, ITQB)

2013 - Creation of BioData.pt
Coordinated by IGC
ELIXIR foundation lead by EMBL-EBI

2012 - Portuguese node submission (CEBAL, FCCN, iBET, IGC, INESC-ID, INIAV, ITQB)

2014 - Portugal joins ELIXIR (FCT)

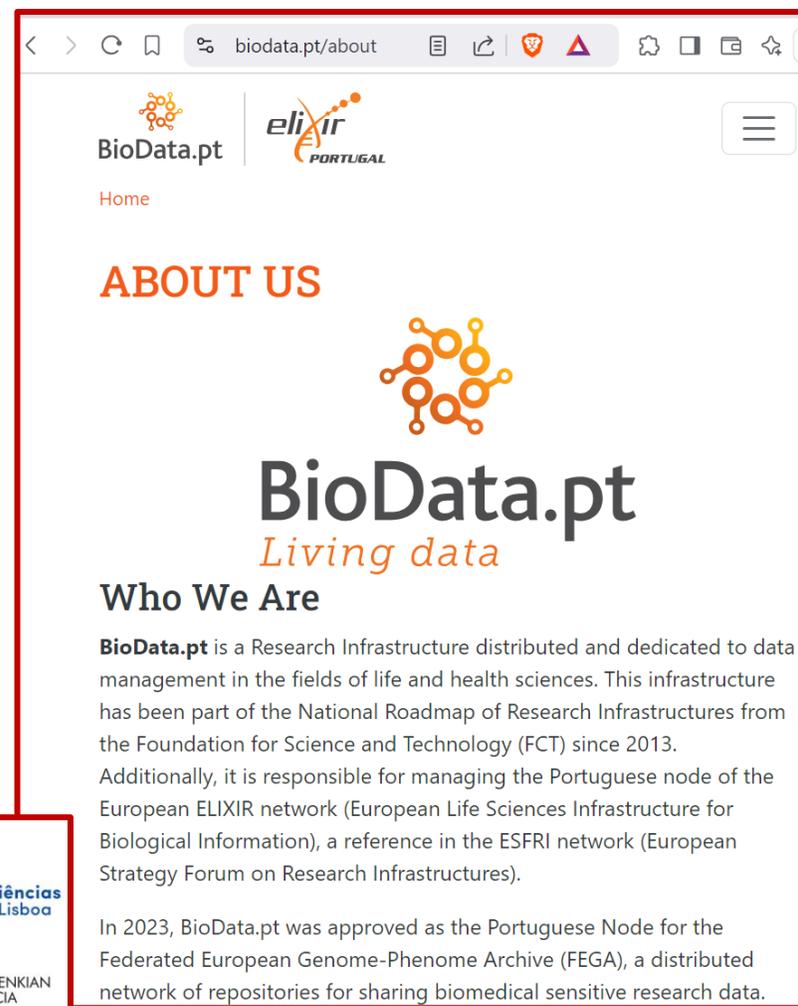
2016 - Foundation of ELIXIR PT (iBET, IGC, INESC-ID, ITQB)

2017 - BioData.pt project

2018 - ELIXIR PT and BioData.pt fusion and IST-ID integration



2021 - BioData.pt Association



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eArchiving: Transform the way you preserve data

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Preserve and Reuse

eArchiving Initiative

<https://digital-strategy.ec.europa.eu/en/activities/earchiving>

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Shaping Europe's digital future

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Home > Activities > eArchiving Initiative

eArchiving Initiative

The eArchiving Initiative provides core specifications, software, training and knowledge to help people store information for longer.

eArchiving
Facilitate the preservation, migration, reuse and trust of your information

What is eArchiving?

Important information should be kept accessible and reusable for years to come, regardless of the system used to store it. **eArchiving provides core specifications, software, training and knowledge** to help people preserve and reuse information over the long-term.

The eArchiving Initiative is managed on behalf of the European Commission by the [E-ARK Consortium](#) comprising: AIT Austrian Institute of Technology GmbH (Lead partner), DLM Forum MTI, Gabinete Umbus SL, Highbury Research & Development Limited, and KEEP Solutions LDA

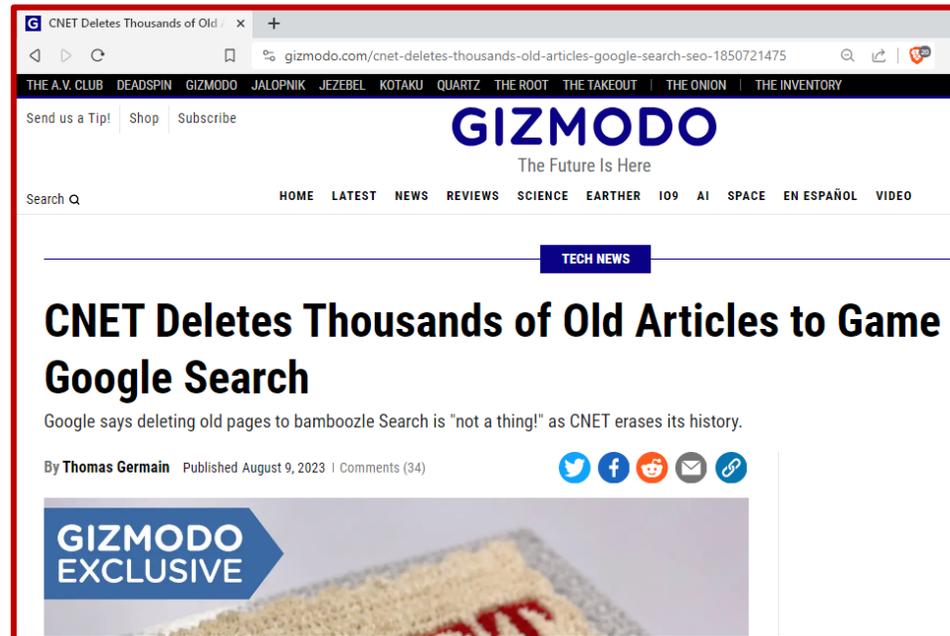
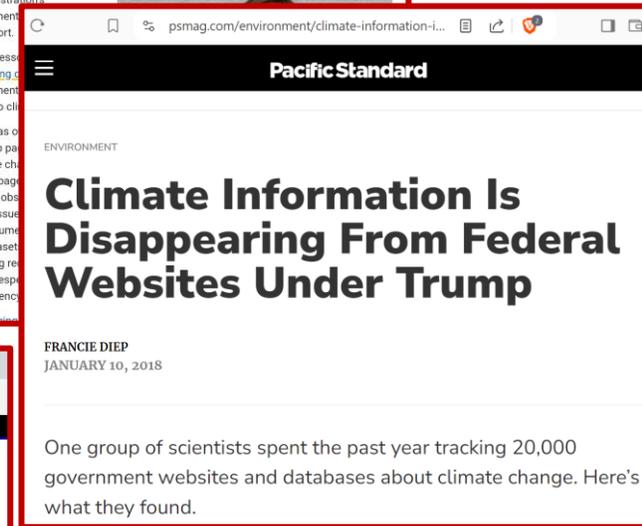
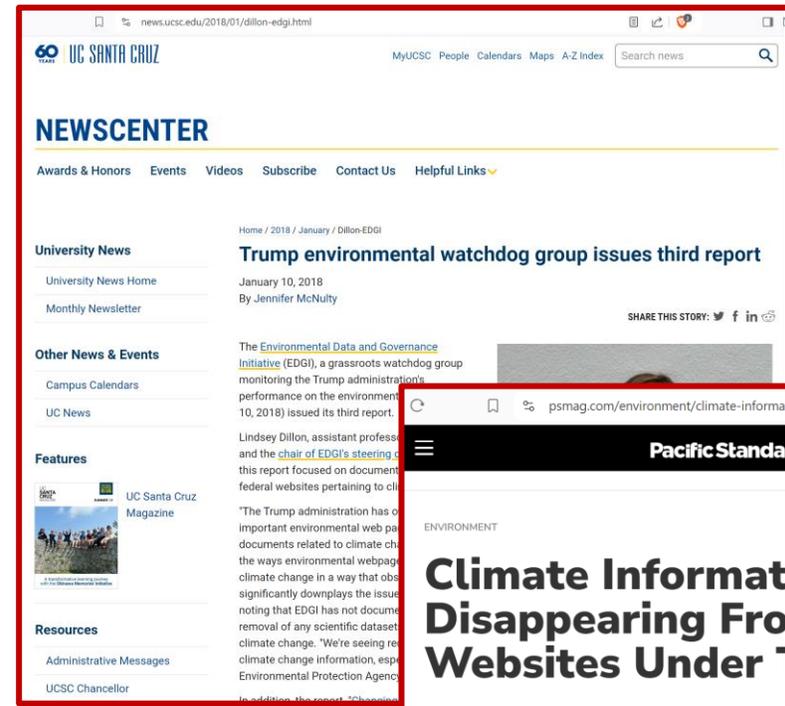
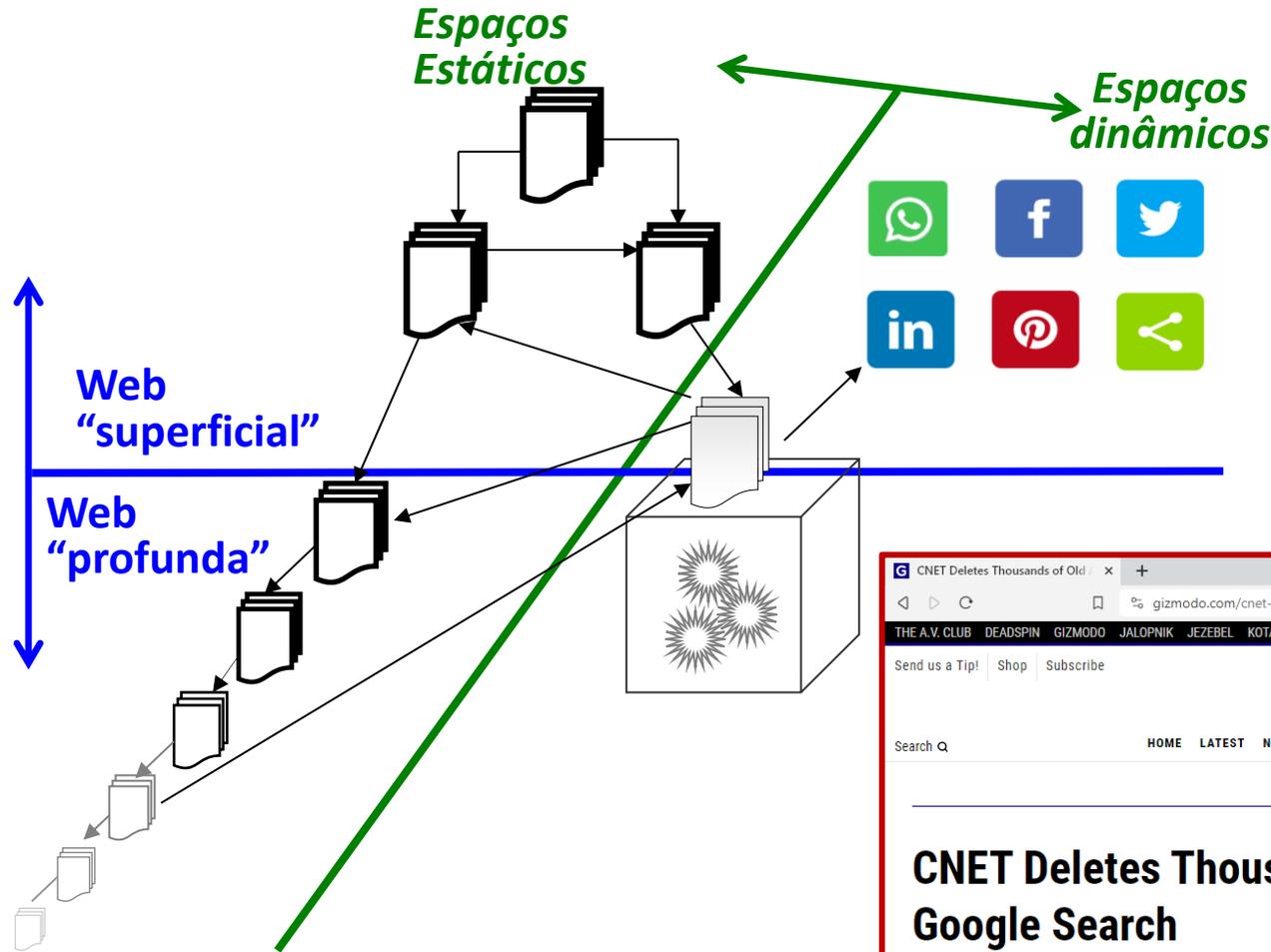
Share

Featured links

- Technical specifications
- Conformance Seal
- Knowledge Centre
- Training
- Support desk
- Get involved

Follow the latest progress and learn more about getting involved.

“preservação digital”



Archive.org => Arquivo.pt ...

The screenshot shows the homepage of the Internet Archive. At the top, there's a navigation bar with links for ABOUT, BLOG, PROJECTS, HELP, DONATE, CONTACT, JOBS, VOLUNTEER, and PEOPLE. Below this is a search bar for the WayBack Machine, with the text "Search the history of over 866 billion web pages on the Internet." The main content area features a large icon of a classical building and a description: "Internet Archive is a non-profit library of millions of free texts, movies, software, music, websites, and more." Below the description are icons representing various media types and their counts: 866B (books), 42M (text), 13M (movies), 13M (software), 3M (music), 1.2M (websites), 5M (images), 267K (audio), and 2.4M (other). A search bar and a "GO" button are also present. At the bottom, there's a section for "Top Collections" with several thumbnail images.

The screenshot shows the homepage of Arquivo.pt. At the top, there's a navigation bar with the logo "ARQUIVO.PT" and a search bar. Below the search bar is a date range selector showing "1991 8 Ago" to "2024 18 Nov". There are buttons for "Páginas", "Imagens", and "Narrativa". The main content area features a large banner for "Prémio Arquivo.pt 2024" with the text "VIAJE no TEMPO e ganhe 10,000€" and a "saiba mais" button. Below the banner are two sections: "O que é o Arquivo.pt?" and "Testemunhos de utilizadores". The "Testemunhos" section includes a video thumbnail for "Pacheco Pereira fala do Arquivo.pt" and another for "JÁ NECESSITOU DE ACEDER A UMA PÁGINA DA WEB DO PASSADO?". At the bottom, there are two promotional boxes: "Sugira" (Sugira websites para serem preservados) and "SavePageNow" (Arquive uma página imediatamente).

O INFARMED pela primeira vez na “web” em 1996 (?), e com “I Jornadas” em 1997 (?)... ;-)

Menu Opções

ARQUIVO.PT

infarmed.pt:80 18 Dezembro às 21h48, 1996

Tabela

1996
Dezembro
18 Dezembro 21h48, 1996

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Menu Opções

ARQUIVO.PT

infarmed.pt:80 30 Janeiro às 06h25, 1997

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30 Janeiro 06h25, 1997

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... ..
para
pensar

... ..

Autenticação Gov

AMA, IP

2,1★
4,94 mil críticas

1 M+
Transferências

PEGI 3

Instalar



Acerca desta app →

Com a aplicação autenticao.gov.pt o cidadão pode ativar a Chave Móvel Digital (CMD) com um vídeo-selfie e com a validação do cartão de cidadão. Consegue também nesta aplicação gerar um código de segurança temporário, ou usar validação biométrica do seu telemóvel, em alternativa ao código por SMS, para se autenticar com CMD em portais públicos ou privados. Dispõe ainda de um serviço de gestão de autorizações de acesso aos seus dados e de assinatura...

id.gov.pt

AMA, IP

2,9★
5,76 mil críticas

1 M+
Transferências

PEGI 3

Instalar



Acerca desta app →

Aplicação da Administração Pública que lhe permite guardar, consultar e partilhar os seus cartões (Ex: cartão de cidadão, carta de condução, cartão ADSE) em qualquer momento e em qualquer lugar recorrendo à sua Chave Móvel Digital. Dispõe ainda de um serviço de gestão de autorizações de acesso aos seus dados.

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Give your digital project a boost

Our eIDAS enablers give you access to free **tools and support** to help you build digital services in line with the eIDAS regulation.



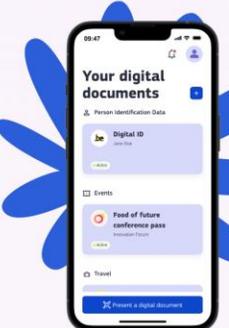
Spotlight

What can eID do for you?

The Future of cross-border digital services is here. Whether you are a public sector visitor, a new mover or already a digital citizen, eID allows you to access services you need.

DISCOVER EID CROSS-BORDER SERVICES

A digital ID and personal digital wallet for EU citizens, residents and businesses



EU Digital Identity Wallets will provide a safe, reliable, and private means of digital identification for everyone in Europe. Every Member State will provide at least one wallet to all its citizens, residents, and businesses allowing them to prove who they are, and safely store, share and sign important digital documents.

Discover the wallet →



Your personal data tells your life's story: **you should be the one to control it.**

Obrigado pela atenção!