



Digital health & care

Empowering citizens and building a healthier society

Putting people at the centre of **health and care**

- Enabling secure access to health data across the EU
- Data sharing for better research and personalised healthcare
- Empowering patients with digital tools

#DigitalSingleMarket | #DigitalHealth

An infographic with a green and blue color scheme. It features a stethoscope and a smartphone displaying a white cross on a blue background. The text is arranged in a list format, with each item in a dark blue box. The background has a subtle pattern of medical icons and a grid.

DG Communications Networks, Content and Technology (DG CONNECT)
Directorate H Digital Society, Trust & Cybersecurity
Unit H3, eHealth, Well Being and Ageing

Saila Rinne
Head of Sector for policy

27 September 2022

PRIORITY

A Europe fit for the digital age

Empowering people with a new generation of technologies



Ursula von der Leyen,
European Commission President

**THIS IS EUROPE'S
DIGITAL DECADE**

The European Commission is working on a digital transformation that will benefit everyone. Digital solutions that put people first will

- open up new opportunities for businesses
- encourage the development of trustworthy technology
- foster an open and democratic society
- enable a vibrant and sustainable economy
- help fight climate change and achieve the green transition

#DigitalEU

The European data strategy to make the European Union a leader in a data-driven society

The European Strategy for data at a glance



The **European Strategy for data** (2020) aims to make the EU a leader in a data-driven society.



The **Data Governance Act** (2020) facilitates data sharing across sectors and Member States.



The **Data Act** (2022) clarifies who can create value from data.



Ten **European common data spaces**, ranging from industry to mobility, from European Green Deal to energy and health.



Data governance Act - What

EUROPEAN DATA
GOVERNANCE

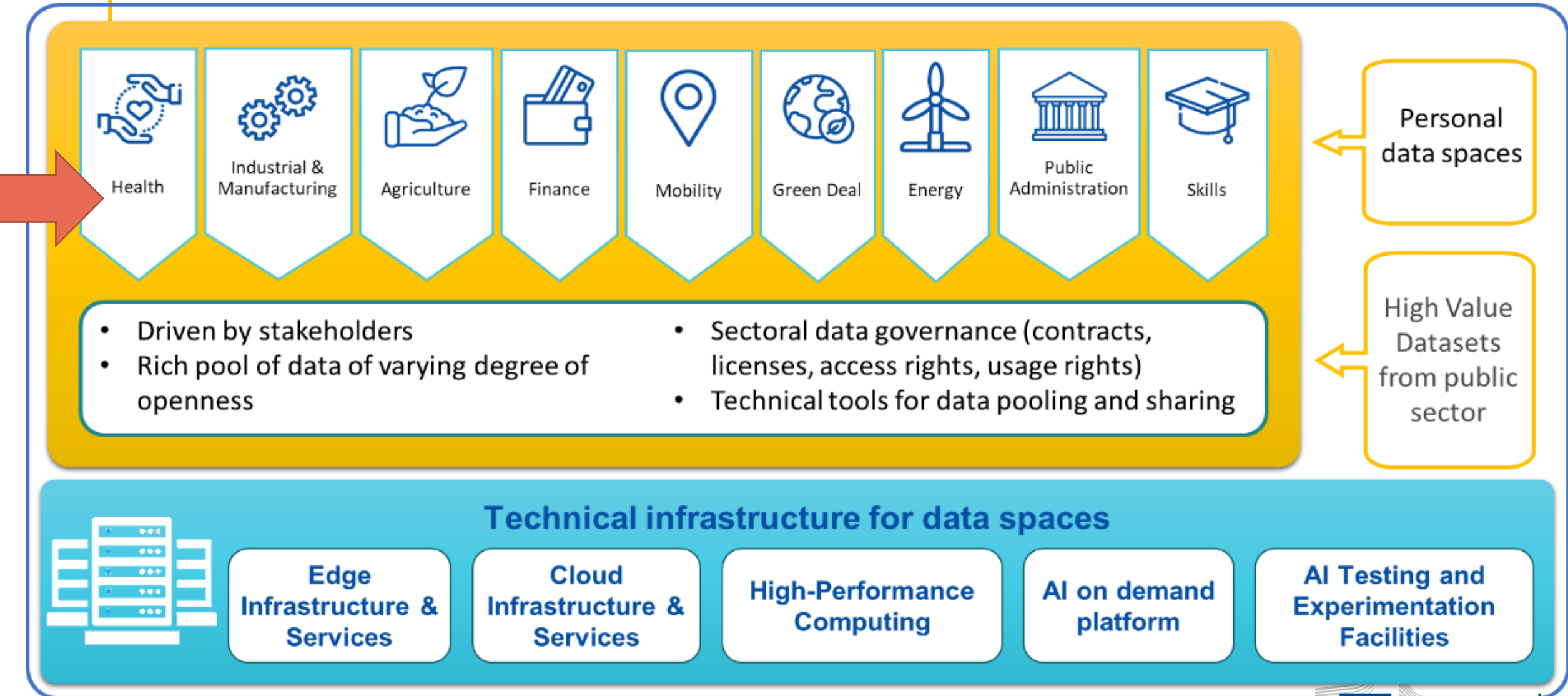
A NEW APPROACH FOR
THE DIGITAL DECADE

November 2020

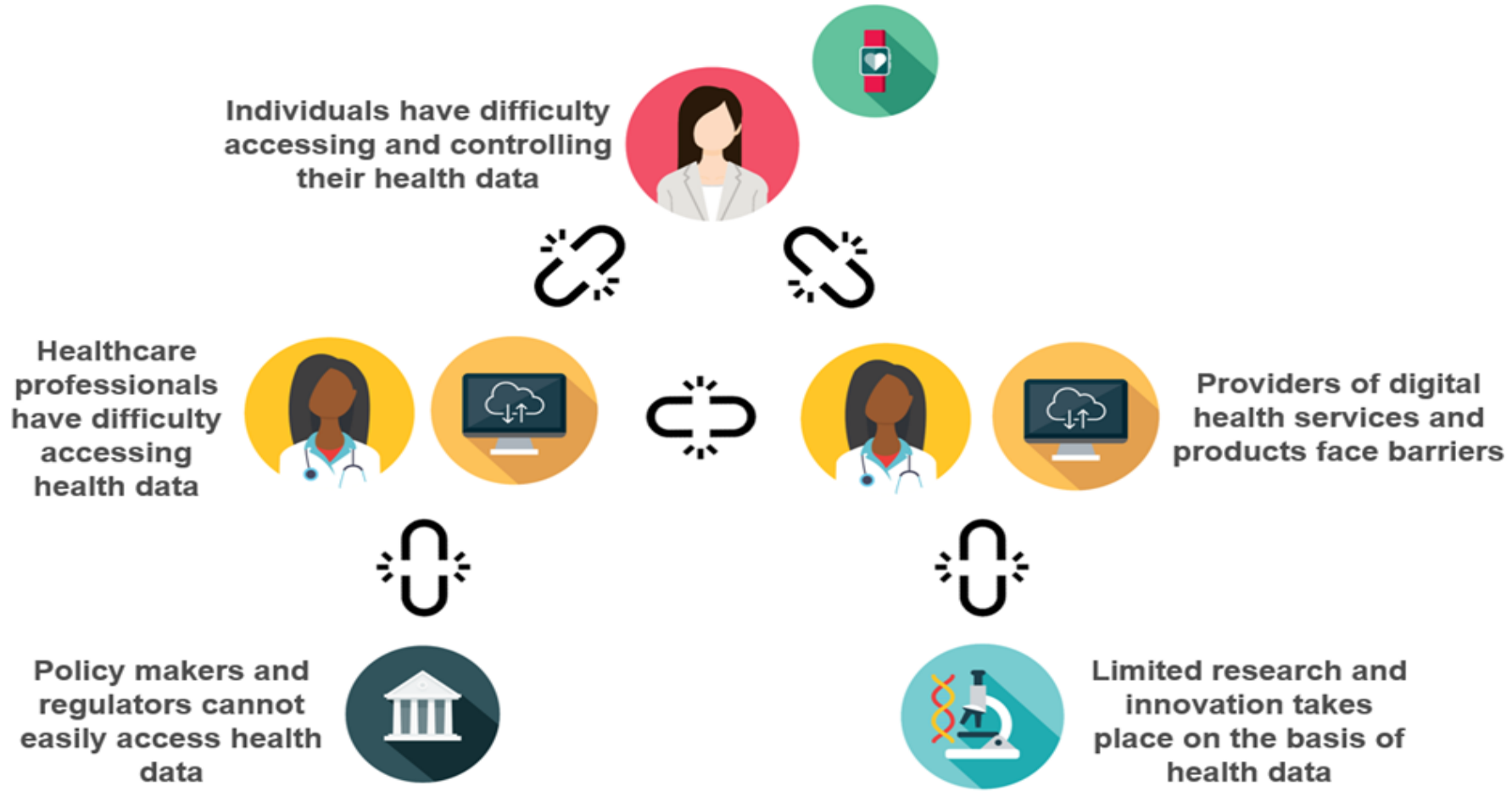
The EU will boost the development of trustworthy data-sharing systems through 4 broad sets of measures:

- Mechanisms to facilitate the **reuse of certain public sector** data that cannot be made available as open data. For example, the **reuse of health data** could advance research to find cures for rare or chronic diseases.
- Measures to ensure that **data intermediaries** will function as trustworthy organisers of data sharing or pooling within the common **European data spaces**.
- Measures to make it easier for citizens and businesses to **make their data available for the benefit of society**.
- Measures to **facilitate data sharing**, in particular to make it possible for data to be used across sectors and borders, and to enable the right data to be found for the right purpose.

EHDS – the first sector specific European Data Space



Main challenges in harnessing the power of health data



Regulation provides rules, common standards and practices, infrastructures and a governance framework for the of electronic health data for healthcare, research, innovation and policy making

Empower individuals to access and control their personal health data



Ensure a consistent framework for the use of individuals' health data for research, innovation, policy-making and regulatory activities

Unleash the data economy by fostering a genuine single market for digital health services and products (EHR systems)

European Health Data Space (EHDS)

OBJECTIVES

Effective use of health data

SCOPE & EXPECTED IMPACT

Use of health data
(primary,
MyHealth@EU)

- Empower individuals to control their data
- Standardization and mandatory certification of EHR systems
- Voluntary labelling of wellness apps
- European Electronic Health Record Exchange Format

Single market for health data, data protection, free movement of people, digital goods and services

Re-use of health data
(secondary,
HealthData@EU)

- Health data access bodies
- Purposes for use and forbidden use
- Data permits, secure environments, no identification

Facilitated Research & Innovation

Better Policy Making


MEANS

Legal / Governance

Quality of data

Infrastructure

Capacity building/digitalisation (MFF)



Cross-border Infrastructure & Ecosystems

MyHealth@EU: Cross-border infrastructure for healthcare provision



My Health @ EU
eHealth Digital Service Infrastructure
A service provided by the European Union

Doctor's access to foreign citizen's Patient Summary

Patient Summary

Used while traveling abroad and being in necessity of consulting a doctor in that country.

Provides information on important health related aspects such as your allergies, current medication, previous illness, surgeries.

Helps doctors to formulate an adequate treatment, avoid some possible risk (for instance in case of allergy) and overcome linguistic barriers.

[eHealth Network Patient Summary guidelines, including minimum dataset](#)



MyHealth@EU: Cross-border infrastructure for healthcare provision



My Health @ EU
eHealth Digital Service Infrastructure
A service provided by the European Union

Patients' access to ePrescriptions abroad

Electronic prescription in Europe – a Finnish patient purchasing medication in a pharmacy abroad



ePrescription

allows citizens in Europe to retrieve their medication in a pharmacy located in another European country without having to bring the printed prescription and without being concerned about the language barrier.

[eHealth Network ePrescriptions and eDispensation guidelines](#)

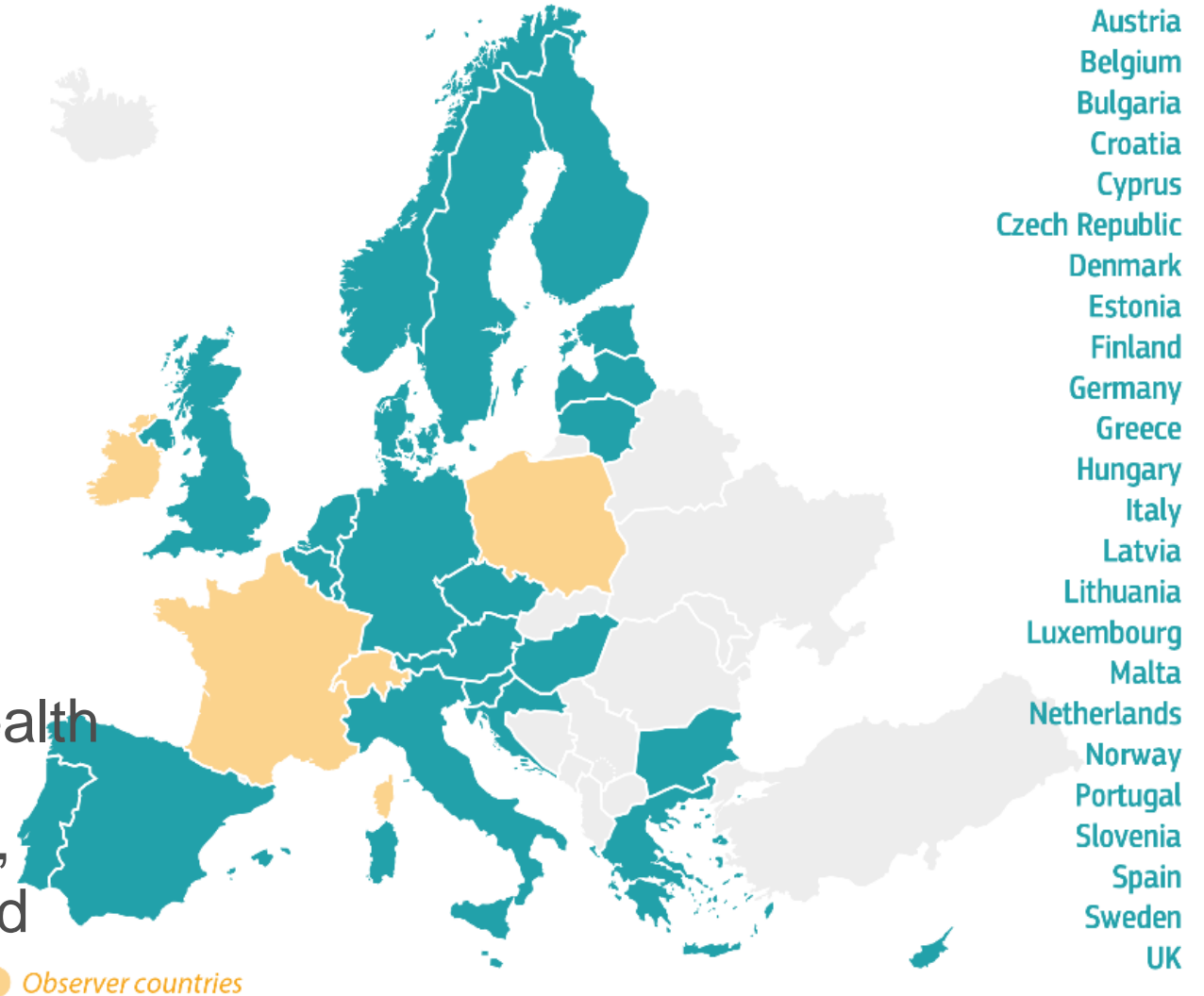
Declaration for delivering cross-border access to **genomic database**

- 1 million **genomes accessible** in the EU by 2022
- **Linking access** to existing and future genomic database across the EU
- Providing a sufficient scale for **new clinically impactful** results in research

1+MIO Genomes

- 24 countries signed the declaration
- 1+MG Group (EC special group)
- 12 Working Groups
- Genome of Europe project (MCP)
- *Beyond 1 Million Genomes*
Coordination and Support Action
- Healthcare, research and public health
- 4 use cases: cancer, rare diseases, common and complex diseases and infectious diseases

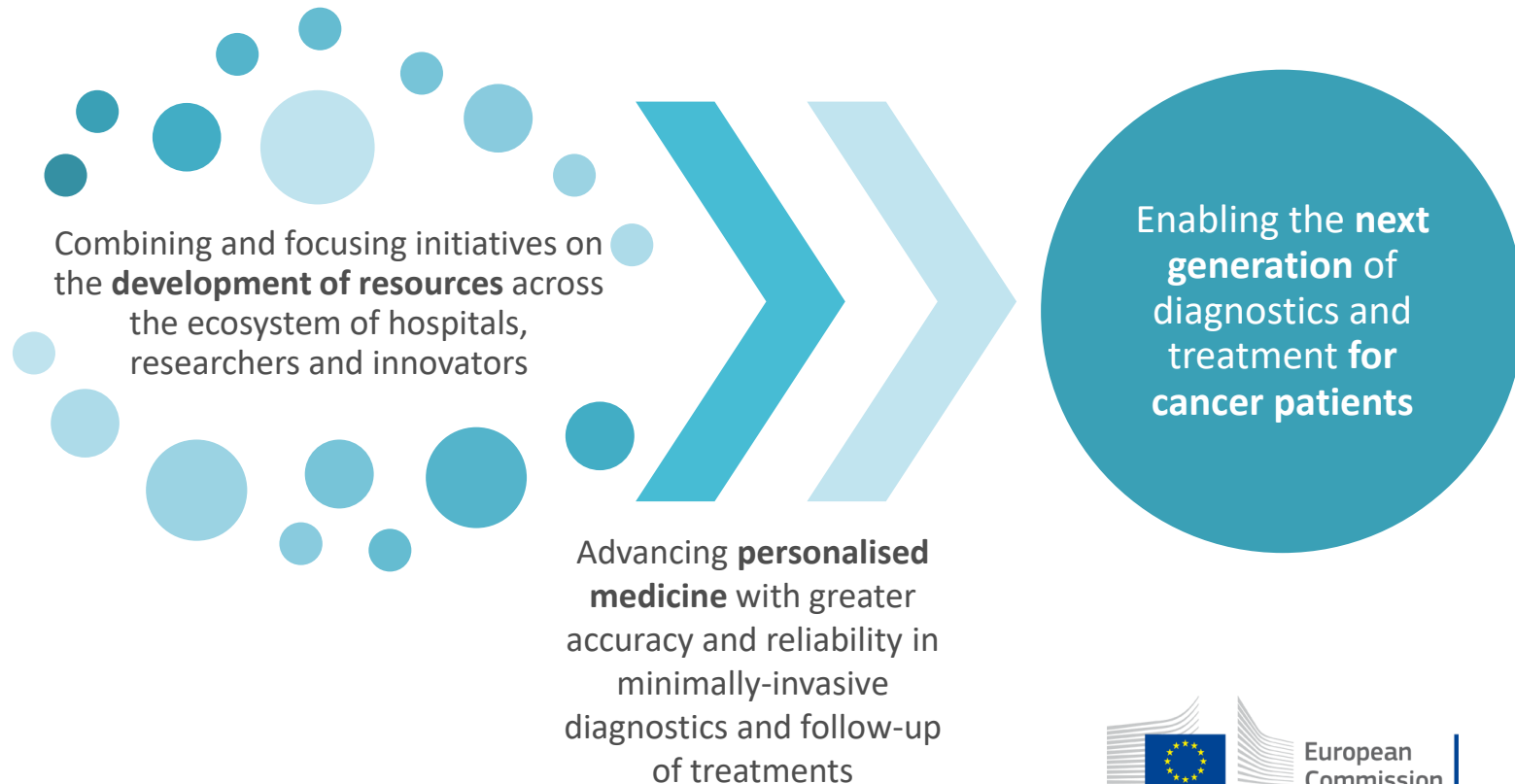
Countries that have signed the 1+MG Declaration since 2018



European Cancer Imaging Initiative

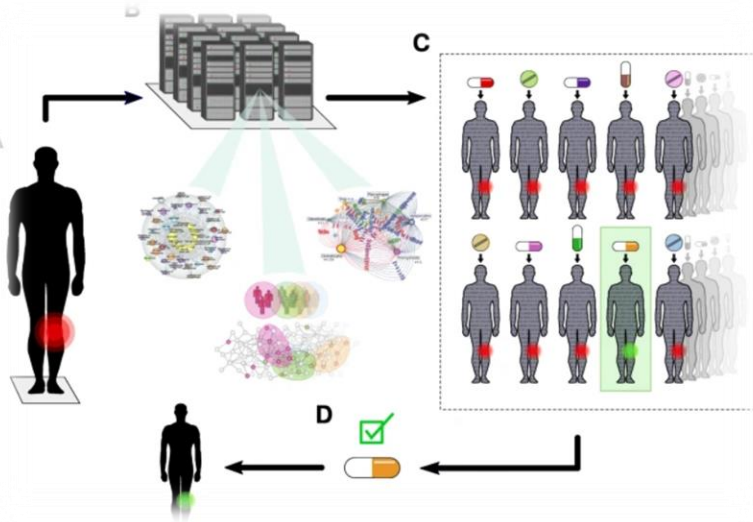
A new EU state of the art platform for innovators to pilot technologies that target cancer, and demonstrate the power of AI and digital technologies to beat cancer

- An EU ‘**atlas**’ of **cancer-related anonymized images** accessible to a wide range of stakeholders
- Involving the planned new **Testing and Experimentation Facilities**
 - to link the data to tools such as HPC and AI
 - including benchmarks for cancer screening algorithms
- Supported by **European Digital Innovation Hubs**



Virtual Twins in Health: benefits

Personalisation of treatment



Björnsson et al., Genome Medicine, 12, 2020

Early risk prediction & disease prevention



Addressing unmet medical needs & enhancing current procedures



Towards Virtual Twin(s) of the human

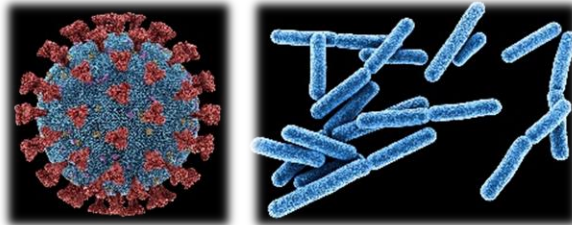
connect knowledge and models
across disciplines and
spatio-temporal scales tailored to
end-user needs

Selected organs
and organ systems



2022

Integration
across disciplines
e.g. comorbidities



2030+

Comprehensive
Virtual Human Twin



Integration across time &
length scales & environment



Financing Research, Innovation and uptake of digital solutions



EU programmes 2021 - 2027

EU-wide collective effort				National regional and local		Financial instrument
Horizon Europe	Digital Europe	Connecting Europe Facility	EU4Health	Cohesion	Agriculture funds	InvestEU
Research Innovation	Strategic capacities: computing, data, testbeds, etc. Advanced digital skills EU-Wide deployment	Broadband and 5G roll out Connecting Communities	Data Spaces for Health Telemedicine eHDSI	Digital connectivity in white and grey areas Support to enterprises in line with Smart specialisation Digital skills for all citizens	Making use of Big Data for CAP monitoring Broadband rollout in rural areas	Leverage private capital for investments in SMEs, research, digital, infrastructure, skills...



#HorizonEU

HORIZON EUROPE

THE EU RESEARCH & INNOVATION PROGRAMME

2021 – 2027



GLOBAL CHALLENGES AND EUROPEAN INDUSTRIAL COMPETITIVENESS *of which*

53 516

Health	8 246
Culture, creativity and inclusive society	2 280
Civil Security for Society	1 596
Digital, Industry and Space	15 349
Climate, Energy and Mobility	15 123
Food, Bioeconomy, Natural Resources, Agriculture and Environment	8 952
Non-nuclear direct actions of the Joint Research Centre (JRC)	1 970

Health Cluster Horizon Europe

Six destinations



1. Staying healthy in a rapidly changing society



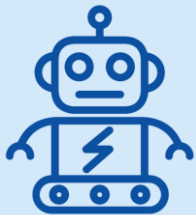
2. Living & working in a health-promoting environment



3. Tackling diseases & reducing disease burden



4. Ensuring access to innovative, sustainable & high-quality healthcare



5. Unlocking the full potential of new tools, technologies & digital solutions for a healthy society







6. Maintaining an innovative, sustainable & globally competitive health industry

Horizon Europe – 49 European Partnerships

Partnerships

- Strategic Plan identifies 49 co-programmed and co-funded partnerships:
 - public-public;
 - public-private;
 - global initiatives.
- EC proposals for 10 institutionalised partnerships based on Art 185/187 (23 Feb 2021, [link](#))
- [link](#) to HE partnerships website



-  Institutionalised Partnerships (Art 185/7)
-  Institutionalised Partnerships / EIT KICs
-  Co-Programmed
-  Co-Funded

* Calls with opening dates in 2021-22

** Calls with opening dates in 2023-24

Horizon Europe – 5 Missions Areas



Adaptation to climate change, including societal transformation



Cancer



Healthy oceans, seas, coastal & inland waters



Climate-neutral & smart cities



Soil health & food

Mission on Cancer

- 5 intervention areas (+ cross-cutting actions)

Goal: by 2030, more than 3 million lives saved, living longer and better



- 13 recommendations for bold actions ([link](#) to Reports of the Mission Boards)

Horizon Europe Topics in 2022

- HORIZON-HLTH-2022-STAYHLTH-01-04:
Trustworthy AI tools to predict the risk of chronic non-communicable diseases and/or their progression
- Destination 1
- Closure: **1.2.2022 1st stage**
- Instrument: RIA
- Total: 60M€
- Project size: 6M€

- HORIZON-HLTH-2022-TOOL-12-01-two-stage:
Computational models for new patient stratification strategies
- Destination 5
- Closure: **01.02.2022 (1st Stage)**
- Instrument: RIA
- Total: €60M
- Project size: €6M

- HORIZON-HLTH-2022-TOOL-11-02: **New methods for the effective use of RWD and/or synth data in regulatory decision-making and/or in health technology assessment**
- Destination 5
- Closure: **21.04.2022**
- Instrument: RIA
- Total: 35M
- Project size: €7M

- HORIZON-HLTH-2022-IND-13-02:
Scaling up multi-party computation, data anonymisation techniques, and synthetic data generation
- Destination 6
- Closure: **21.4.2022**
- Instrument: RIA
- Total: 30M€
- Project size: 7M€

Horizon Europe Topics in 2022

- HORIZON-HLTH-2022-STAYHLTH-01-04:
Setting up a European Smart Health Innovation Hub
- Destination 6
- Closure: **21.04.2022**
- Instrument: CSA
- Total: 2M€
- Project size: 2M€

- HORIZON-HLTH-2022-TOOL-11-02: **Setting up a European Electronic Health Record Exchange Format (EEHRxF) Ecosystem**
- Destination 6
- Closure: **21.04.2022**
- Instrument: CSA
- Total: 2M
- Project size: €2M



Digital Europe Programme

Main objectives



Ensure broad take-up of digital technologies across all regions of EU

In deploying latest technologies to offer best services to citizens and business



Support SMEs to acquire or access the latest technologies and skills

More than 400,000 EU vacancies in these fields



Achieve scale through collective co-investments

Given the size of investments needed, scale required and risks involved Europe needs to pool the resources together



Better address Europe's economic and societal challenges

E.g. climate, health, mobility and public services



Regain control over Europe's value chains

and ensure Europe's technological sovereignty



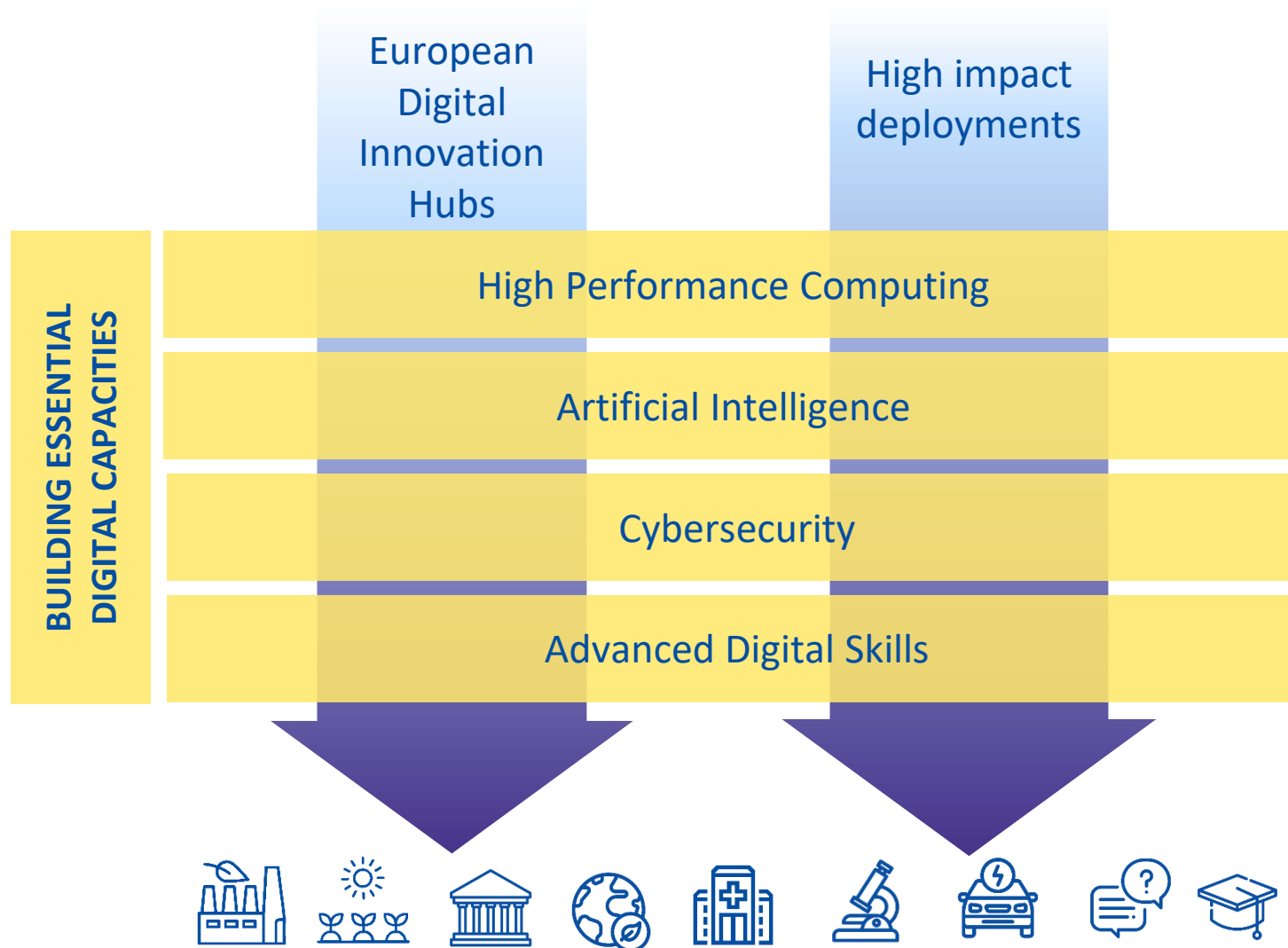
Compete globally

Other regions of the world invest huge amount of public capital in advanced technologies. For example, the US and China spend € 10-20 billion annually on AI alone



Digital Europe programme structure

ACCELERATING THE BEST USE OF DIGITAL TECHNOLOGIES





Health in Digital Europe Work Programme 2021-22

Artificial Intelligence, data and cloud

Data spaces

Genomics

1st Call – 22nd Feb

Cancer Imaging

2nd Call – 17 May
(deadline)

Testing and Experimentation Facilities

TEF for Health

2nd Call – 17 May
(deadline)

Accelerating best use of technologies

Uptake of digital solutions in Health and Care

1st Call - 22nd Feb

An ecosystem for digital twins in healthcare

1st Call - 22nd Feb

Cybersecurity and trust

Support to cybersecurity in the health sector

1st Call – 17 May
(Cybersecurity Work Programme)

... plus **Digital Health as possible use cases** in broader topics;

& benefits through **HPC** and **cloud** infrastructures; European **Digital Innovation Hubs**, advanced digital **skills**...



AI Testing and Experimentation Facilities (TEF)

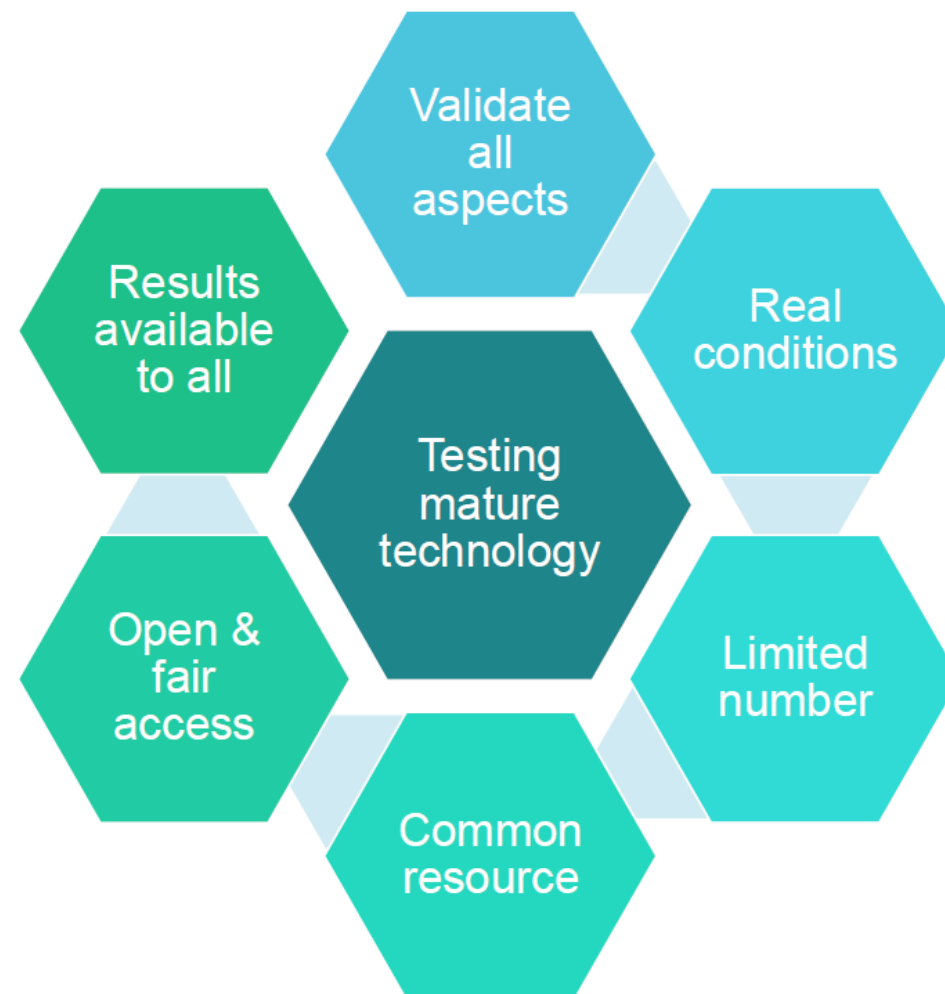
WORLD CLASS REFERENCE SITES FOR EXPERIMENTATION AND TESTING AI

REAL SETTING

ESSENTIAL SECTORS: AGRICULTURE, HEALTHCARE, MANUFACTURING AND SMART CITIES & COMMUNITIES

CONNECTED TO THE NETWORK OF DIGITAL INNOVATION HUBS

EQUIPPED WITH INFRASTRUCTURE & LATEST AI + ACCESS TO CLOUD/DATA/HPC...





Support to the implementation of the European Digital Identity Framework

TOPIC ID: DIGITAL-2022-DEPLOY-02-ELECTRONIC-ID under the Digital Europe Programme 2nd call

- to support the piloting of the European Digital Identity Wallets by Member States and relevant stakeholders in compliance with the common Union Toolbox and reference implementation of EUDI Wallet; and
- to promote the development and deployment of use cases for the EUDI Wallet in different areas involving both public and private sector stakeholders.
- Large-scale use case pilots in areas of Mobile Driving License, **eHealth**, Education/Professional Qualifications, Payments.

Type of action	Simple grant (50% co-funding rate)
Indicative Budget	EUR 37 million
Indicative duration	24 months
Indicative budget per Grant (EU contribution)	EUR 10-12 million
Implementation	HaDEA



Digital innovation hubs (DIH)

Test before invest:

Testing HPC, AI, cybersecurity, blockchain for public admin

Facilitate agile procurement through working with smaller GovTech suppliers

Giving advice on digital by default

Skills and training:

Awareness raising about the potential of AI, HPC, cybersecurity and European CEF DSIs.

Training public administrations on CEF DSIs, once only principle, Single Digital Gateway, eIDAS, etc.

DIHs as one-stop-shops

Support to find investments:

DIHs could help public administrations develop specifications for joint innovation procurement (PPI/PCP)

Innovation ecosystem and networking opportunities

Replicating locally developed digital public services via DIHs

Offering CEF DSIs to SMEs Liaising with DIH of other specialisation

Creating a strong EU network of DIH

- European Digital Innovation Hubs provide technological expertise and experimentation facilities to enable the digital transformation of the industry and the public sector
- H2020 funded 166 DIH, covering 94 regions
- Digital Europe Programme will expand this network to 240 DIH, covering 240 regions
- The Digital Innovation Hubs will be interlinked to the EEN and Startup Europe networks

Funding for European Health Data Space



Overall funding for EHDS and its infrastructures

- Around € 810 M

Earmarked funding: € 280 mil

- EU4Health: € 280 M
- DEP: € 50 M

Not earmarked: ≥ € 480 mil

- DEP: € 140 M
- CEF: 130 M
- HE: € 210 M

Funding for national infrastructures

- RRF: € 12 bn
- ERDF

Thank you

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Slide 9&10: pictures, source: pixabay.com

