Artificial Intelligence: European Strategy

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European Commission

European Commission

OUTLINE

AI strategy for Europe

AI funding in H2020 & beyond:
- AI-on-Demand-Platform
- Digital Innovation Hubs
- Additional calls
- Post-H2020

Ethics Framework

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Ethics Framework

Maximising benefits from AI

Economic impact ✓

+

Contribution to societal challenges ✓ ✓

Healthcare

Energy efficiency

Road safety

Cybersecurity

...

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EU strengths

Excellent research centres

World-leading position in robotics

Strong business-to-business domain

Strong industrial and services sectors: automotive, healthcare, agrifood

Industrial data

European Commission

EU strategy for AI

A STRATEGY FOR EUROPE TO LEAD THE WAY

Boost technological and industrial capacity & AI uptake

Prepare for socio-economic changes

Ensure an appropriate ethical & legal framework

AI FOR GOOD AND FOR ALL

European Commission

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Joining forces EC with MS

**All Member States
& Norway + Swizerland
signed a Declaration of cooperation on AI**

**7 December 2018:
Coordinated plan on AI published**

Member States agreed to work together on:
- **ensuring Europe's competitiveness in the research and deployment of AI**
- **dealing with social, economic, ethical and legal questions**

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Digital
Single Market

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EU strategy for AI

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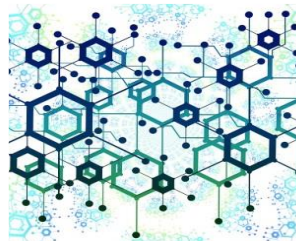
AI FOR GOOD AND FOR ALL

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€1.5 billion EC investments into AI in 2018-20

BY 70% INCREASE OF ANNUAL INVESTMENT

| Basic and industrial research (health, transport, agriculture, manufacturing, etc.) | AI-on-demand platform AI4EU | Network of AI-focused Digital Innovation Hubs (DIHs) | Strengthening AI excellence centres | Setting up an industrial data platform |

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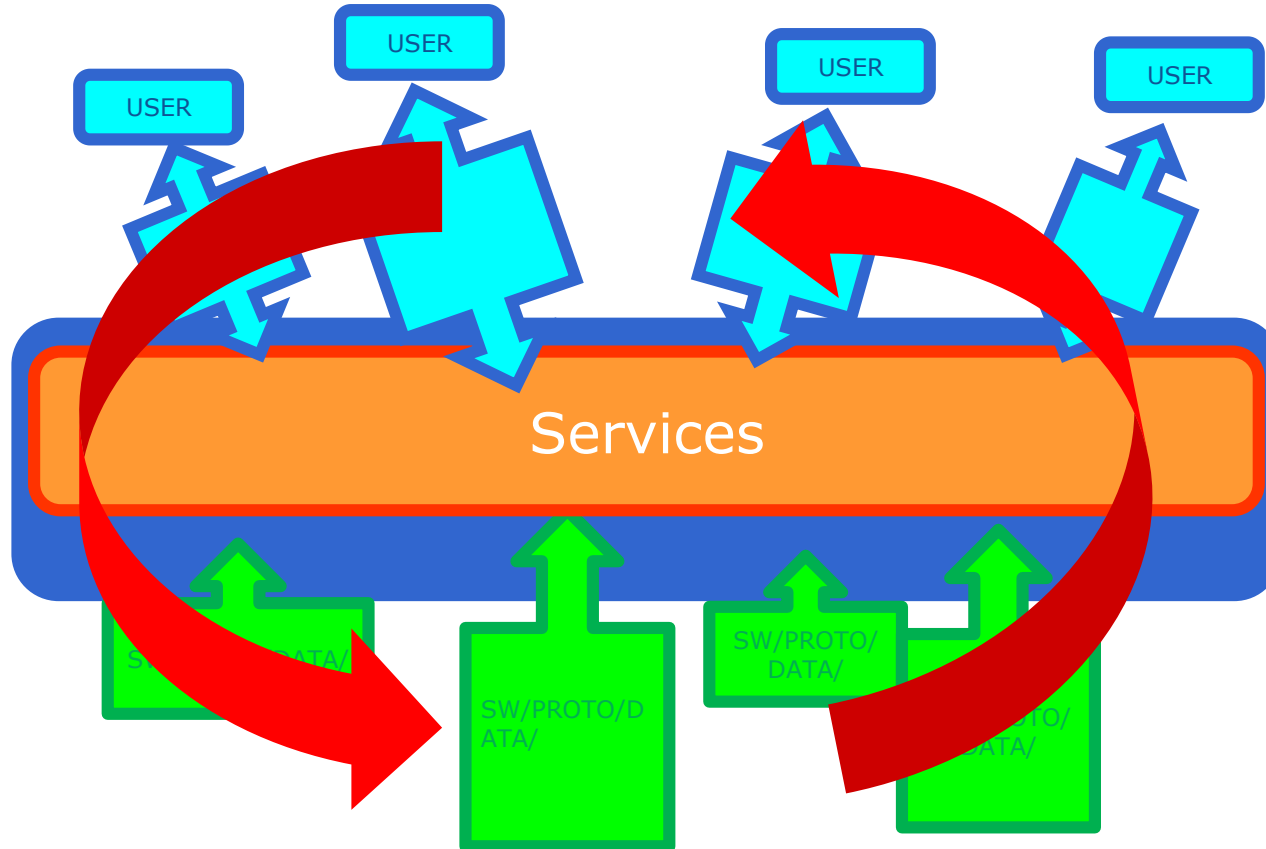- Additional calls
- Post-H2020

Ethics Framework

Work Programme 2018-20
EUROPEAN AI-ON-DEMAND PLATFORM

- Central access point:
  - integrating tools and resources
  - offering solutions and support to all users of AI to integrate such technology into application, products and services

https://www.ai4eu.eu/

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- Develop a **European AI ecosystem**
  - knowledge, algorithms, tools and resources available and making it a compelling solution for users, especially from non-tech sectors.

- **Build on** and **link to existing** relevant initiatives
  - platforms, data repositories, cloud computing, HPC, etc.

- **Connect** and cooperate with other relevant activities of this **work programme**
  - DIHs, pilots, etc.

➔ OBJECTIVE – CENTRAL ACCESS POINT TO ALL AI RESOURCES in EUROPE, including **RESULTS FROM ALL EU PROJECTS ➔ ALSO YOUR RESULTS**

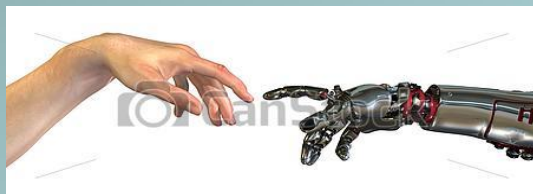# DIGITAL INNOVATION HUBS (DIH) ?
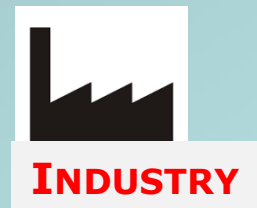
Commissioner Oettinger:
"My objective is to have at least one world class digital innovation hub in every region in Europe."
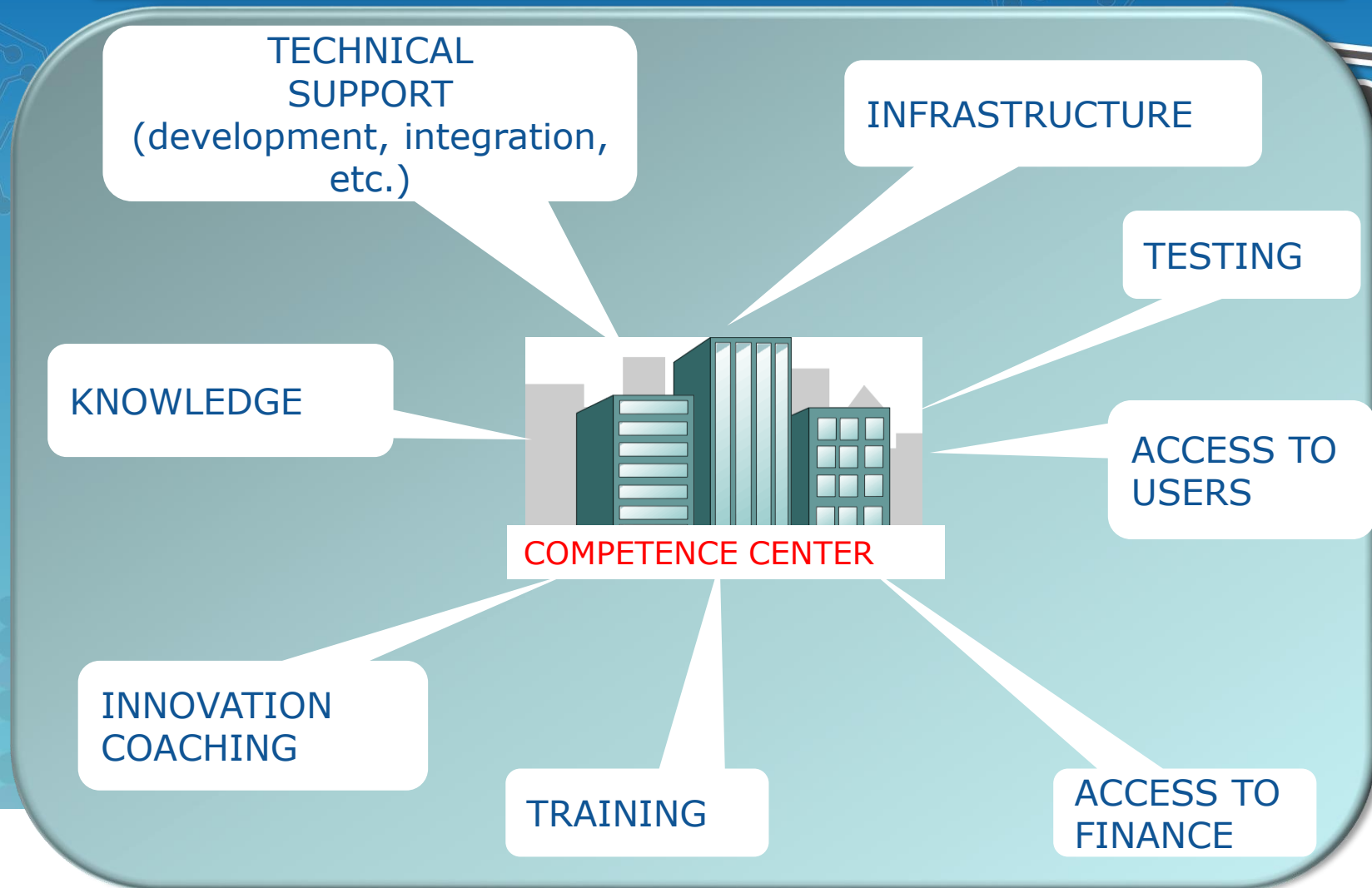
Objective:

Access to digital technologies and expertise within "working distance" for any industry in Europe, especially SMEs, mid-caps, non-tech
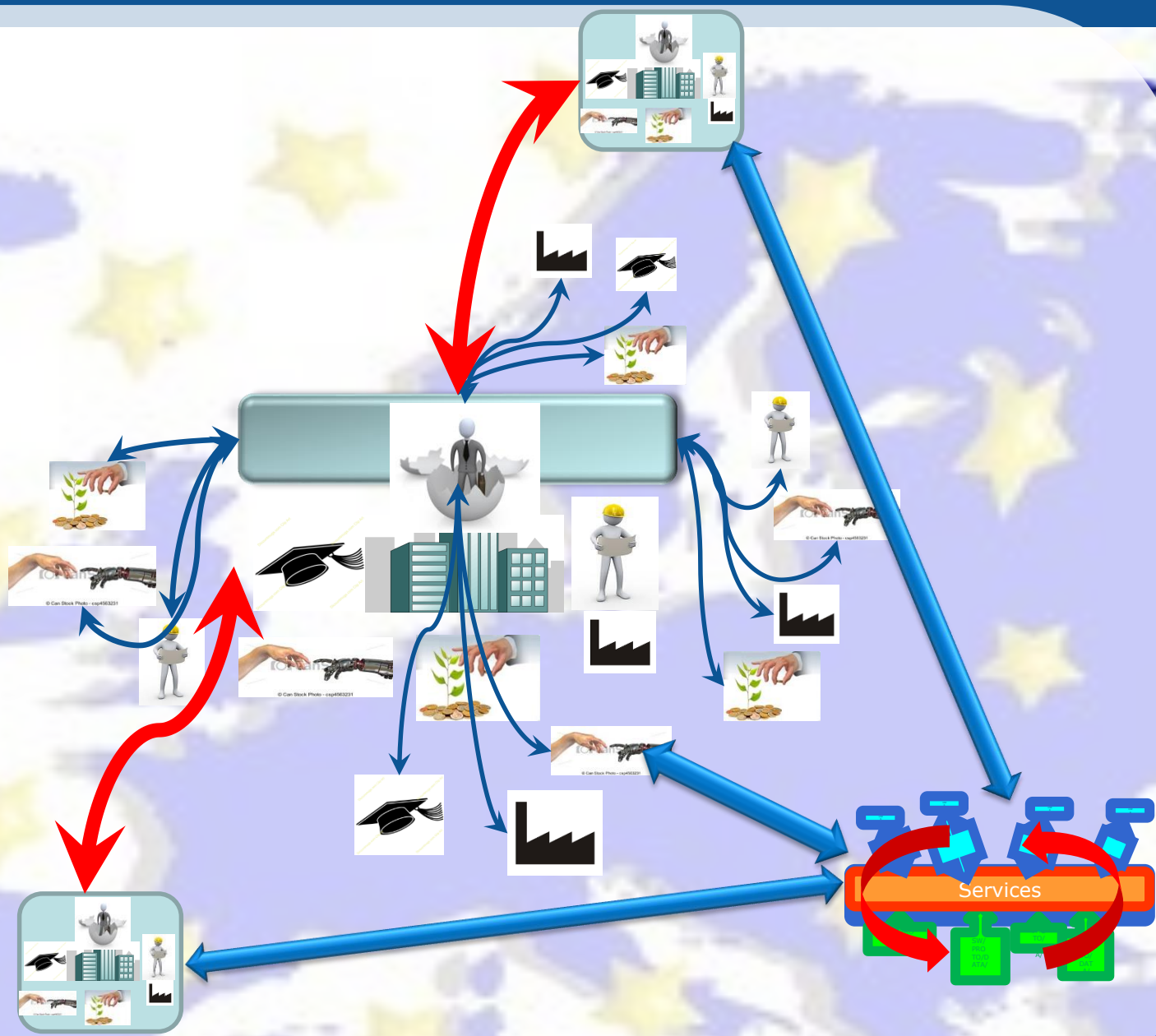
- **Regions and local authorities have a key role to play**
- **EU funding: at least 500 million € in H2020**

DIGITAL INNOVATION HUB: ACTORS

ACADEMIA

ENTREPRENEUR

INCUBATOR

INDUSTRY

GOVERNMENT

COMPETENCE CENTER SHARED (PHYSICAL) INFRASTRUCTURE & SUPPORT (TECHNICAL, LEGAL, ADMINISTRATIVE, BUSINESS,...)

USERS COMMUNITY: SMES, CITIZENS, LOCAL ECONOMIC ACTORS,...
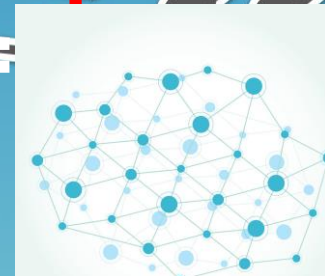
INVESTORS

Services

AI-ON-DEMAND PLATFORM:

Toolbox & Services

+

NETWORK OF DIGITAL INNOVATION HUBS IN AI:

Distribution Channel for AI to empower

ALL local companies/Users

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ICT-46-2020: Robotics in Application Areas and Coordination & Support

ICT-47-2020: Research and Innovation boosting promising robotics applications

ICT-48-2020: Towards a vibrant European network of AI excellence centres ➔ infoday [50M€] – bring the best researchers to progress faster / make Europe a powerhouse for AI & attractive for scientists

ICT-49-2020: Artificial Intelligence on demand platform

ICT-38-2020: Artificial intelligence for manufacturing

DT-ICT-05-2020: Big Data Innovation Hubs.

DT-ICT-12-2020: AI for the smart hospital of the future

Goal beyond 2020: Increasing investments from €4-5 billion / year today to €20 billion / year

The next Framework program: post H2020

DIGITAL IN THE NEXT MFF: OVERVIEW

Digital Europe Programme

1. High Performance Computing (HPC)
2. Artificial Intelligence (AI)
3. Cybersecurity
4. Advanced digital skills
5. Digital transformation and interoperability

€9.2 Bn

Digital in Horizon Europe

1. Digital under "global challenges"
   - Digital and industry cluster
   - Digital in other clusters - health, mobility, energy, environment,..
2. FET Open under Open Innovation
3. Research Infra under Open Science

€100 Bn with share to digital of 15Bn

CEF - Digital

Connectivity
- Synergies with Transport /Energy
- WIFI/BB 4EU
- 5G roll out

€3 Bn

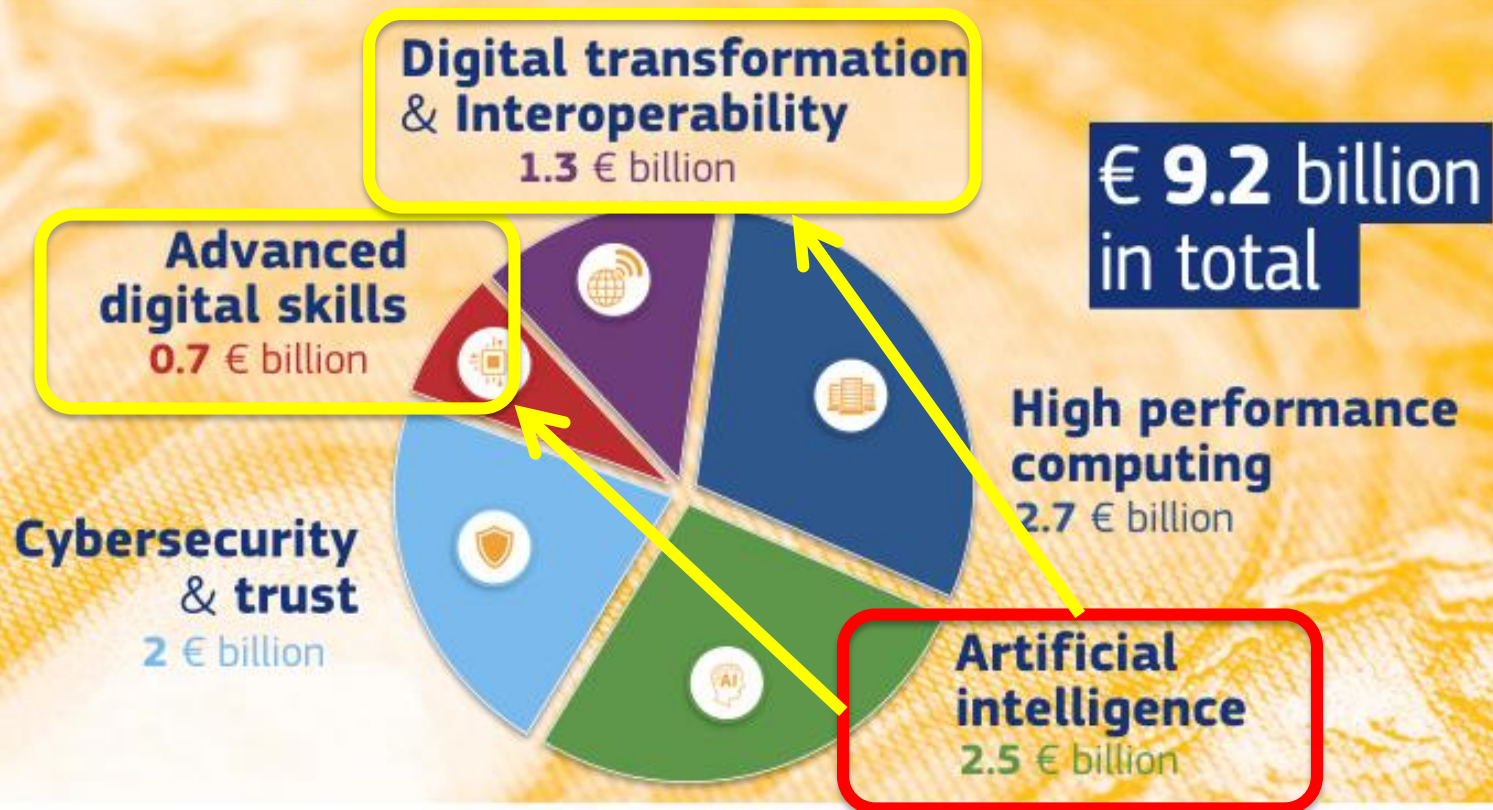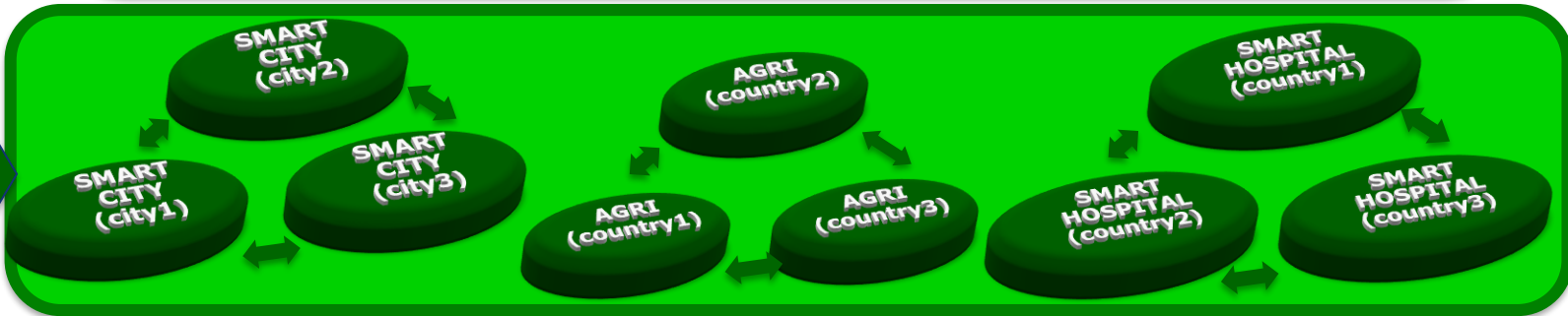## MEDIA under Creative Europe within Cohesionand Values

- Distribution of works
- Creation

€1.1 Bn

AI & Digital Europe Programme (DEP): Capacity building & Deployment

CAPACITY: Technology infrastructure (DATA/ALGO/HW)

INDUST DATA · PSI · PERSO DATA · HEALTH DATA

MACHINE LEARNING · DATA ANALYTICS · EXPLAINABLE AI · IOT · NEUROMORPHIC · AI - EDGE · CPS · NLP · HMI · COMPUTER VISION · PERCEPTION · ROBOTICS (lab1) · ROBOTICS (lab2) · ROBOTICS (lab3)

LARGE SCALE AI REF. TESTING* FACILITIES

SMART CITY (city1) · SMART CITY (city2) · SMART CITY (city3) · AGRI (country1) · AGRI (country2) · AGRI (country3) · SMART HOSPITAL (country1) · SMART HOSPITAL (country2) · SMART HOSPITAL (country3)

* Only some examples, others include manufacturing, security, finance, etc

DEPLOY: DISTRIBUTION CHANNEL

DIH · DIH · DIH · DIH · DIH · DIH · DIH · DIH · DIH · DIH

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Definition (Coordinated Plan)

- *A Reference Testing and Experimentation Facility is a technology infrastructure that has specific expertise and experience of **testing mature technology in a given sector**, under **real or close to real conditions** (e.g. smart hospital, smart city, experimental farm, corridor for connected and automated driving, etc.).*

Concepts

World-class Testing and Experimentation Facilities

- **Limited number** *per sector*

- **Common resource** *available to all European stakeholders to* **validate new AI-based solutions** *in real settings.*

- *Validate all the aspects: technical, socio-economic, legal*

- **Results** *available to all* **throughout Europe** *(directly, or via the channel of Digital Innovation Hubs).*

Digital Europe Programme Legal text

- ***Co-investment with Member States in world class reference sites for experimentation and testing in real setting focusing on*** the applications of AI in essential sectors such as **health, mobility, security, manufacturing or finance**. The sites should be open to all actors across Europe and connected to the Network of Digital Innovation Hubs. They should be equipped with large computing and data handling facilities as well **as latest AI technologies** including **emerging** areas such as neuromorphic computing, deep learning and robotics.

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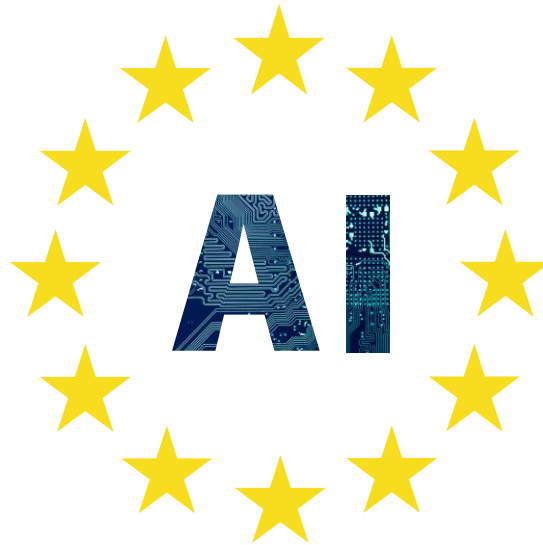- Post-H2020

Ethics Framework

Ethical and legal framework

High level group of experts → Ethics guidelines
&
Policy & Investment recommendations

European Commission

The European AI Alliance

JOIN @
https://ec.europa.eu/digital-single-market/en/european-ai-alliance
And contribute to the debate

Building Trust in Human-Centric AI
(COM(2019)168)

4 ETHICAL PRINCIPLES

- Respect for human autonomy
- Prevention of harm
- Fairness
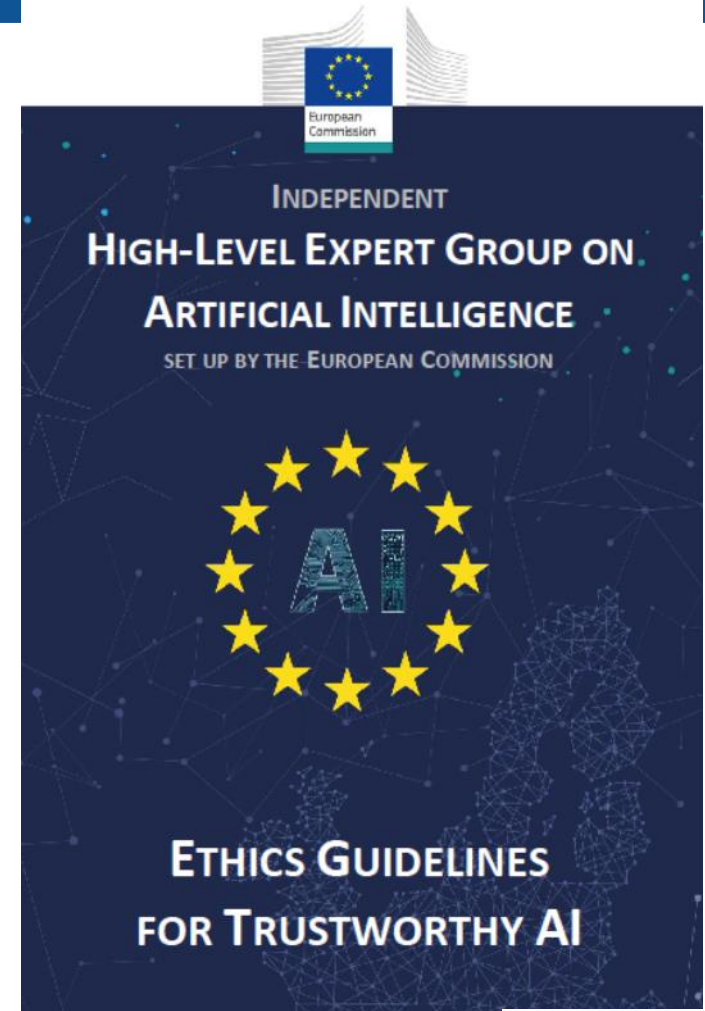- Explicability

7 REQUIREMENTS

- Human agency and oversight
- Technical robustness and safety
- Privacy and data governance
- Transparency
- Diversity, non-discrimination and fairness
- Societal and environmental wellbeing
- Accountability

ASSESSMENT LIST

- **Operationalise the requirements**

INDEPENDENT

HIGH-LEVEL EXPERT GROUP ON ARTIFICIAL INTELLIGENCE
SET UP BY THE EUROPEAN COMMISSION

ETHICS GUIDELINES FOR TRUSTWORTHY AI

BE PART OF IT!
➔ REGISTER TO THE PILOTING PROCESS

via the European AI Alliance

Ethics Guidelines for AI – Piloting Process

❑ How to participate? Register today*

  ▪ Test out the assessment list

  ▪ Provide us with feedback through an online survey

❑ In parallel: in-depth feedback process with selected stakeholders

* https://ec.europa.eu/futurium/en/register-piloting-process

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Next steps

- ✓ 26 June: Presentation Recommendations & Kick-off Piloting

- ❑ Feedback gathering on assessment list from July till December 2019

- ❑ Revised version assessment list & sectorial recommendations in 2020

- ❑ Commission will then decide on Next Steps

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Policy and Investment recommendations

High level group of experts ➡ Policy & Investment recommendations

Policy and Investment recommendations
Key Take-Aways

1. Empower and protect **humans and society**
2. Take up a **tailored approach** to the AI landscape
3. Secure a **Single European Market for Trustworthy AI**
4. Enable **AI ecosystems** through Sectoral Multi-Stakeholder Alliances
5. Foster the European **data economy**
6. Exploit the multi-faceted role of the **public sector**
7. Strengthen and unite Europe's **research** capabilities
8. Nurture **education** to the Fourth Power
9. Adopt a **risk-based governance** approach to AI and an ensure an appropriate regulatory framework
10. Stimulate an open and lucrative **investment environment**
11. Embrace a **holistic way of working**, combing a 10-year vision with a rolling action plan

European Commission

EU actions and funding relating to AI:

Adobe Acrobat
Document

Thank you

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