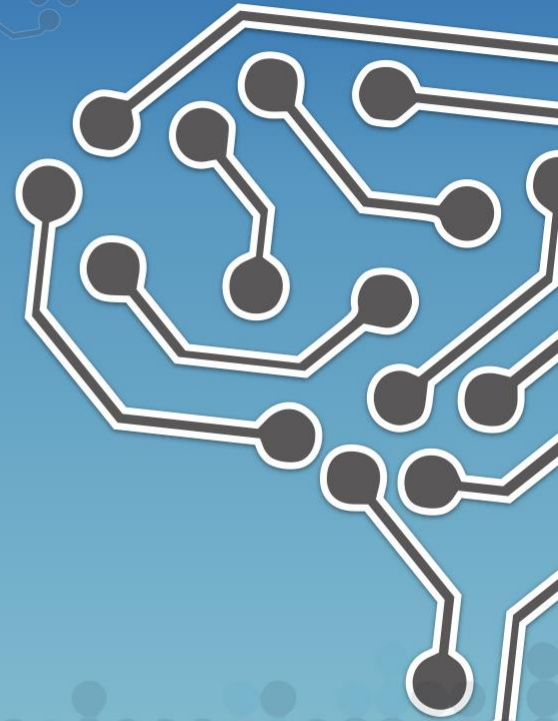




# Artificial Intelligence: European Strategy

Cécile Huet, PhD  
Deputy Head of Unit  
**Robotics & Artificial Intelligence**  
DG CNECT  
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

# OUTLINE

## AI strategy for Europe

### AI funding in H2020 & beyond:

- AI-on-Demand-Platform
- Digital Innovation Hubs
- Additional calls
- Post-H2020

### Ethics Framework

# Maximising benefits from AI



**Economic impact**



**Contribution to societal challenges**



Healthcare



Energy efficiency



Road safety



Cybersecurity



European  
Commission

# 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

# 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



## 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**

# 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**

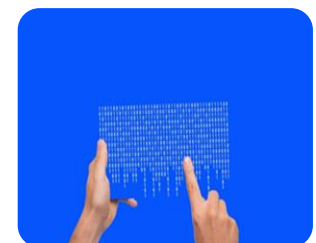
**AI FOR GOOD AND FOR ALL**



# BOOSTING THE EU'S TECHNOLOGICAL AND INDUSTRIAL CAPACITY: WP 2018 - 2020



€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



Network of AI-focused Digital Innovation Hubs (DIHs)

Strengthening AI excellence centres

Setting up an industrial data platform

# OUTLINE

## AI strategy for Europe

### **AI funding in H2020 & beyond:**

- AI-on-Demand-Platform
- Digital Innovation Hubs
- Additional calls
- Post-H2020

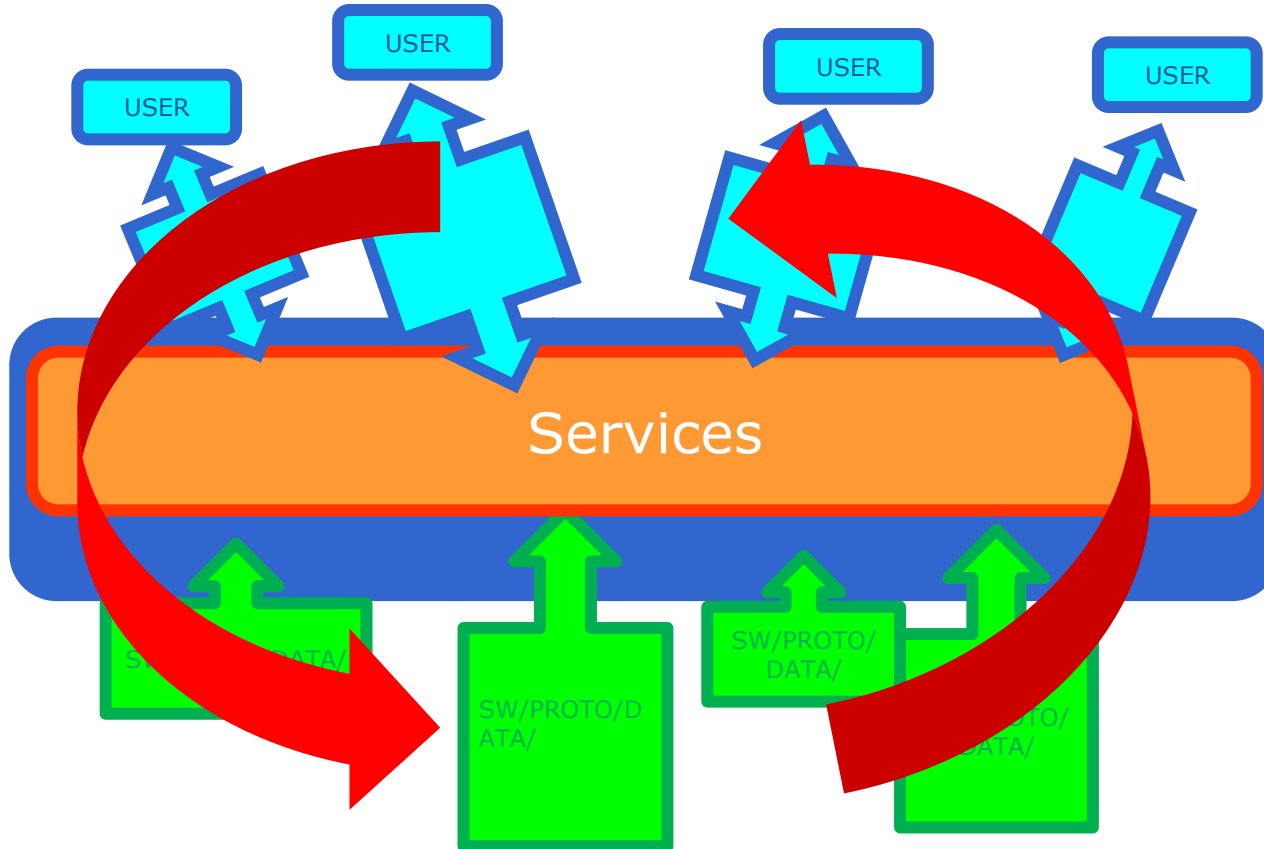
## Ethics Framework



## 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/>



# THE PLATFORM = CENTRAL POINT



- 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:*

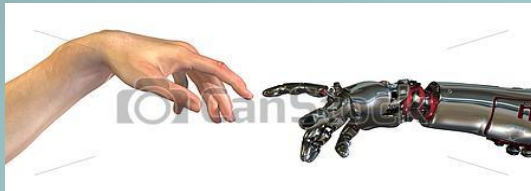
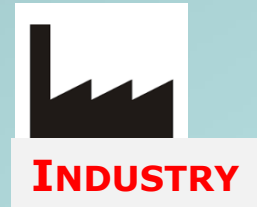
*"My objective is to have at least one world class **digital innovation hub** in every region in Europe."*

## **Objective:**

***Access to digital technologies and expertise within "working distance" for any industry in Europe, especially SMEs, mid-caps, non-tech***

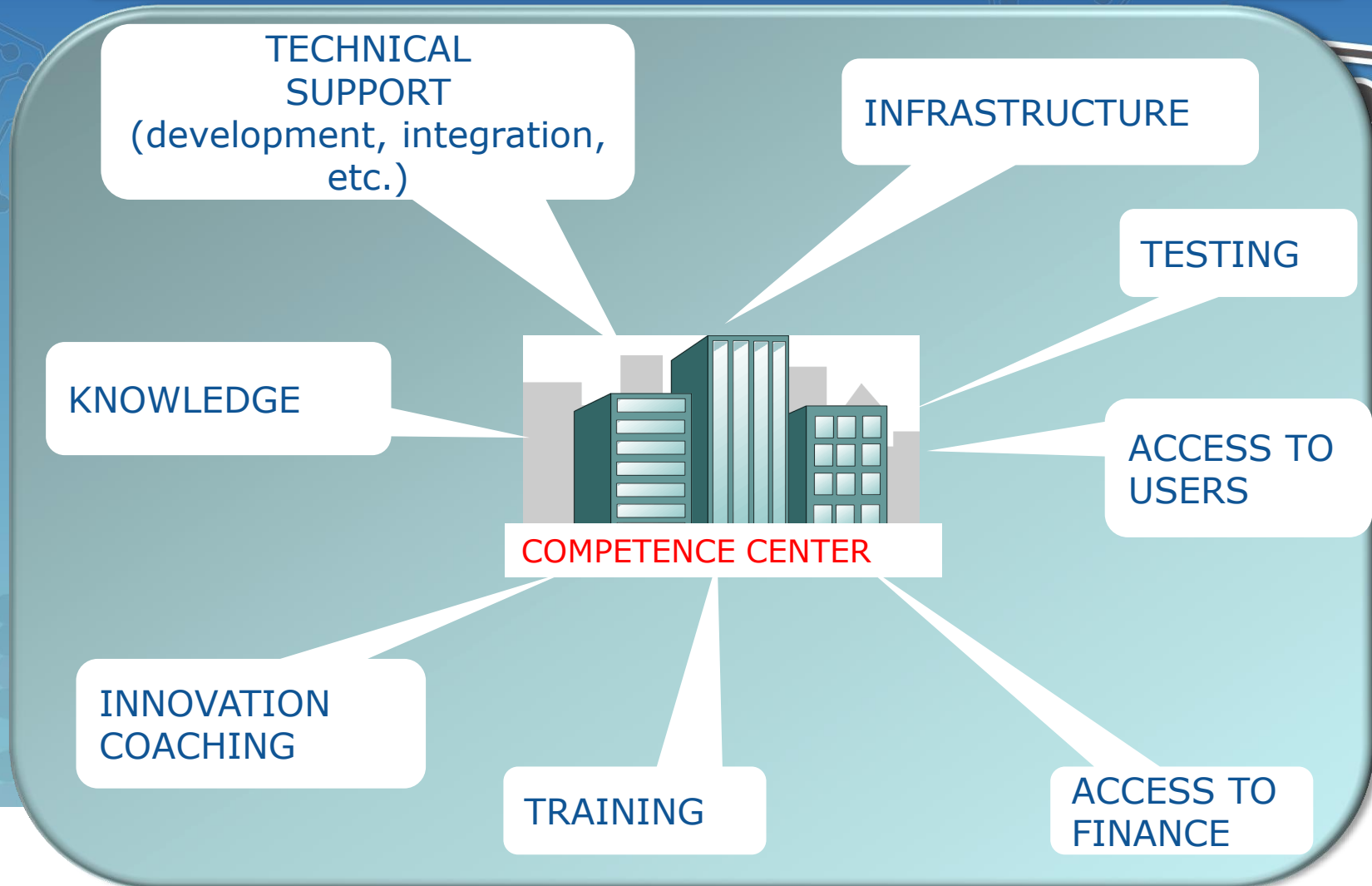
- Regions and local authorities have a key role to play***
- EU funding: at least 500 million € in H2020***

# DIGITAL INNOVATION HUB: ACTORS

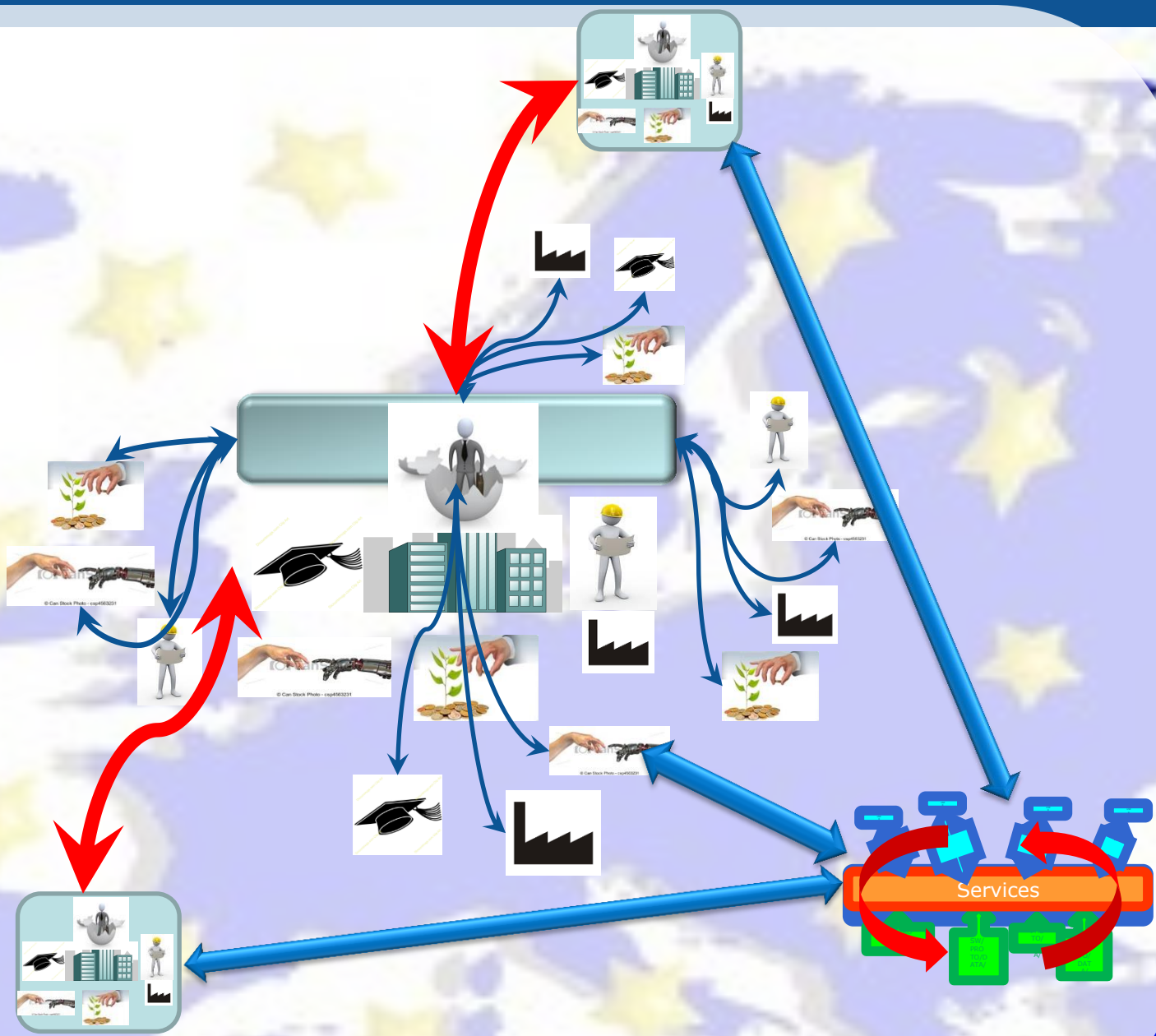




## DIGITAL INNOVATION HUB: INGREDIENTS







**AI-ON-DEMAND PLATFORM:**

**Toolbox & Services**

**+**

**NETWORK OF DIGITAL INNOVATION HUBS IN AI**

**Distribution Channel for AI to empower**

**ALL local companies/Users**



# OTHER RELEVANT UPCOMING CALLS

(CHECK [PRE-PUBLICATION](#))



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

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 Cohesion and Values

- Distribution of works
- Creation

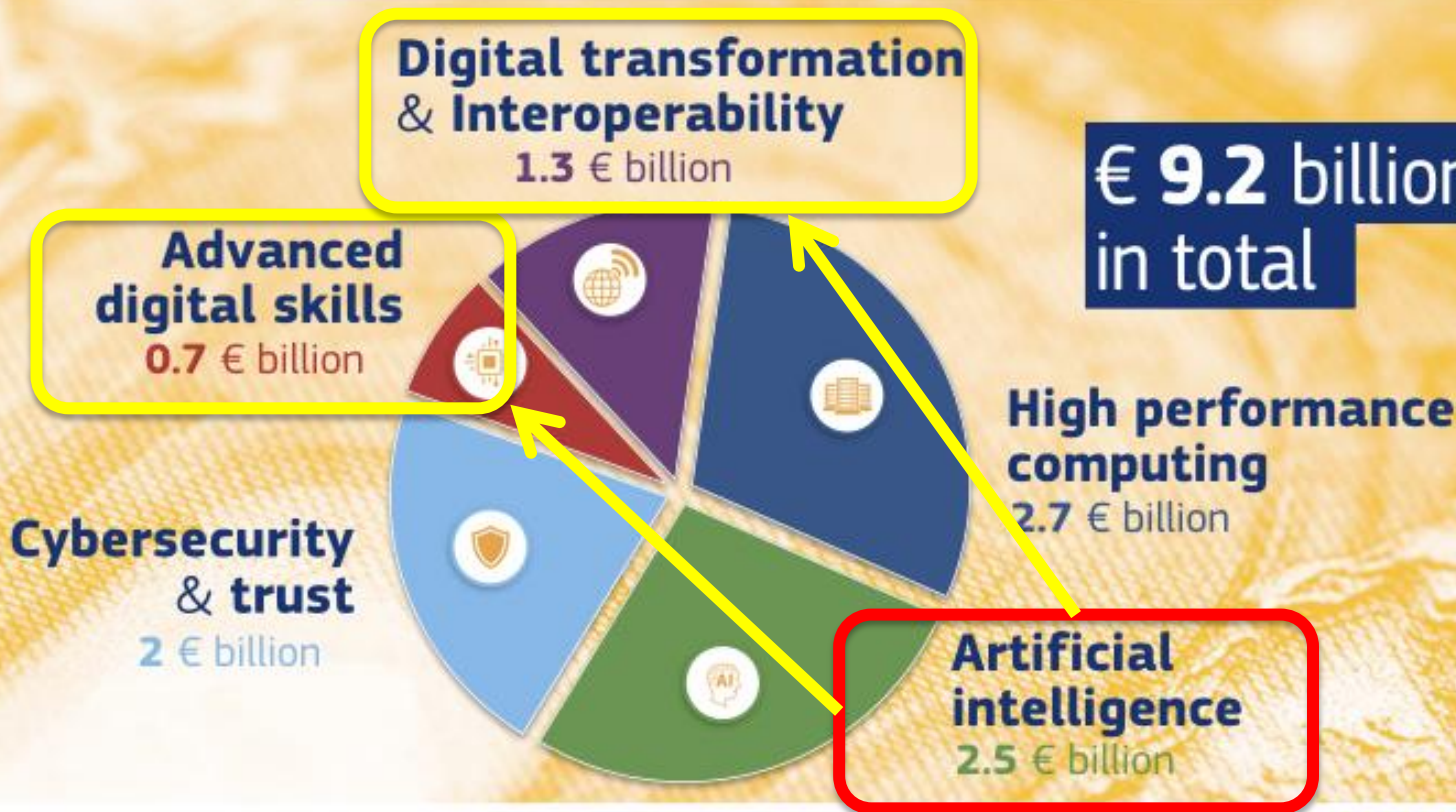
€1.1 Bn



# DIGITAL EUROPE PROGRAMME: CAPACITY BUILDING AND DEPLOYMENT

Investing in the future:  
**Digital Europe** Programme

**€ 9.2 billion**  
in total



# Investing in the future: **Digital Europe** Programme

€2.5 billion for **Artificial intelligence**

Bring the power of the AI to  
**businesses & public  
administrations**

Strengthen **testing  
and experimentation**  
facilities across the EU



Facilitate safe **access**  
and **storage** of data  
and algorithms



# AI & DIGITAL EUROPE PROGRAMME (DEP): CAPACITY BUILDING & DEPLOYMENT

**CAPACITY:**  
Technology  
infrastructure  
(DATA/ALGO/HW)



**LARGE SCALE**  
**AI REF.**  
**TESTING\***  
**FACILITIES**



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

**DEPLOY:**  
**DISTRIBUTION**  
**ON**  
**CHANNEL**





## 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.).*



## ***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).***



- **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.

# OUTLINE

## AI strategy for Europe

### AI funding in H2020 & beyond:

- AI-on-Demand-Platform
- Digital Innovation Hubs
- Additional calls
- Post-H2020

## Ethics Framework

# Ethical and legal framework

---



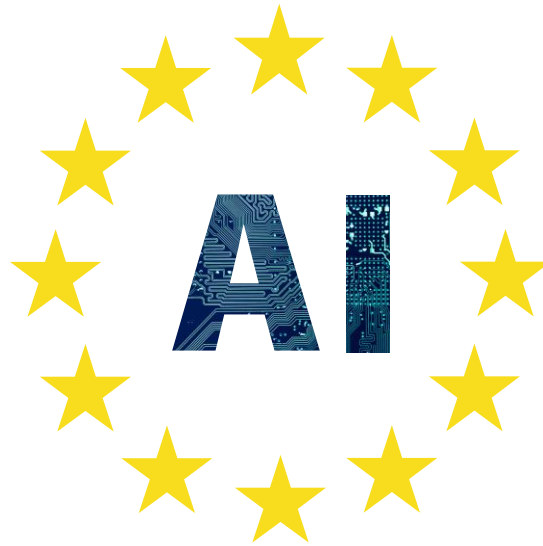
High level group of experts



Ethics guidelines  
&

Policy & Investment recommendations

# The European AI Alliance



JOIN @

<https://ec.europa.eu/digital-single-market/en/european-ai-alliance>

And contribute to the debate

# THE EUROPEAN AI ALLIANCE

Joint reflection on  
the future of AI in  
Europe

Full mobilisation  
of all stakeholders  
needed: industry,  
academia, civil  
society

Supported by  
high-level expert  
group on AI and  
an online platform

Goal: Making it the world-wide reference  
platform for thinking and reflecting on AI

# 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**



**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>



## 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

# Policy and Investment recommendations



High level group of experts



Policy & Investment recommendations

# Policy and Investment recommendations



## CHAPTER I: **USING** TRUSTWORTHY AI TO BUILD A POSITIVE IMPACT IN EUROPE

- **Empowering and Protecting Humans and Society**
- **Transforming Europe's Private Sector**
- **Europe's Public Sector as a Catalyst of Sustainable Growth and Innovation**
- **Ensuring World-Class Research Capabilities**

## CHAPTER II. LEVERAGING EUROPE'S **ENABLERS** FOR TRUSTWORTHY AI

- **Building Data and Infrastructure for AI**
- **Generating appropriate Skills and Education for AI**
- **Establishing an appropriate governance and regulatory framework**
- **Raising Funding and Investment**

EU actions and funding relating to AI:



Adobe Acrobat  
Document

**Thank you**

**[Cecile.Huet@ec.europa.eu](mailto:Cecile.Huet@ec.europa.eu)**

Icons made by Freepik from [www.flaticon.com](http://www.flaticon.com)