



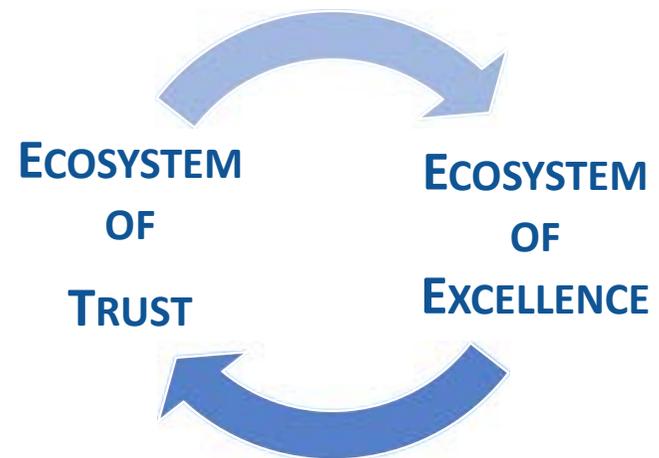
TOWARDS A EUROPEAN ECOSYSTEM OF EXCELLENCE IN AI: EU FUNDING PROGRAMMES

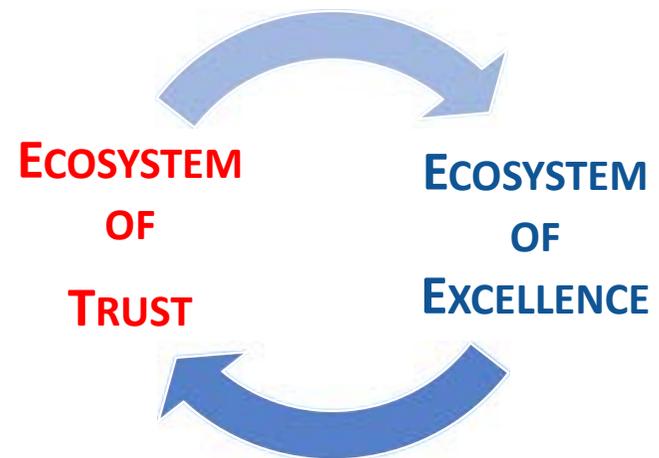
A photograph of a blue European Union flag with twelve gold stars, being held up by two hands. The flag is waving in the wind against a background of green trees. The image is partially obscured by a blue horizontal bar at the top and a blue vertical bar on the left side of the slide.

*Cécile Huet, PhD
Head of Unit
Robotics & AI Excellence and Innovation
DG Connect - European Commission*

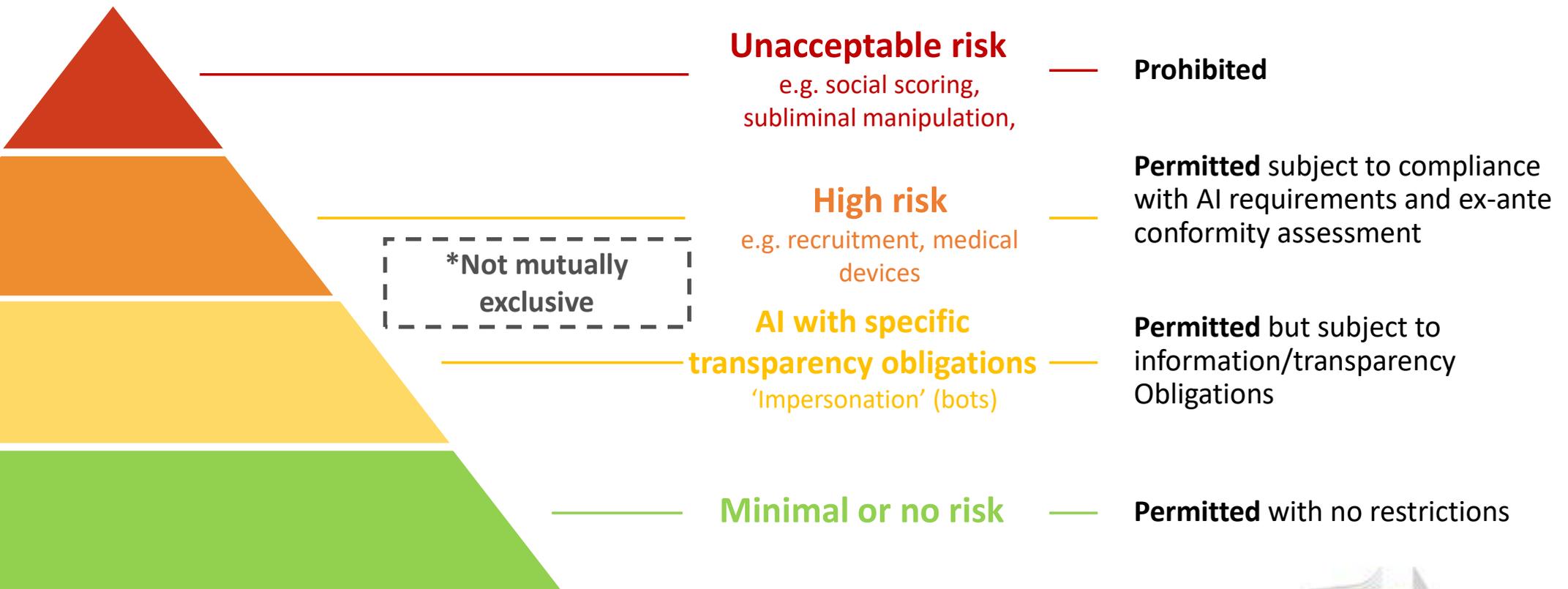


AI for Good and for ALL





A risk-based approach to regulation



Requirements for high-risk AI

Establish and implement **risk management** processes
&
In light of the **intended purpose** of the AI system

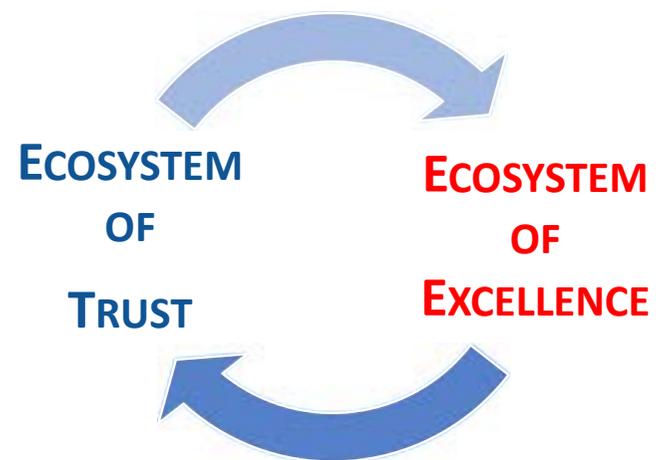
Use high-quality training, validation and testing **data** (relevant, representative etc.)

Establish **documentation** and design logging features (traceability & auditability)

Ensure appropriate certain degree of **transparency** and provide users with information (on how to use the system)

Ensure **human oversight** (measures built into the system and/or to be implemented by users)

Ensure **robustness, accuracy and cybersecurity**



COORDINATED PLAN ON ARTIFICIAL INTELLIGENCE: FOUR KEY POLICY OBJECTIVES

SET ENABLING CONDITIONS FOR AI DEVELOPMENT AND UPTAKE IN THE EU

- Acquire, pool and share policy insights
- Tap into the potential of data
- Foster critical computing capacity

MAKE THE EU THE RIGHT PLACE; EXCELLENCE FROM LAB TO THE MARKET

- Collaboration with stakeholders, Public-private Partnership on AI, data and robotics
- Research capacities
- Testing and experimentation (TEFs), uptake by SMEs (EDIHs)
- Funding and scaling innovative ideas and solutions

ENSURE AI TECHNOLOGIES WORK FOR PEOPLE

- Talent and skills
- A policy framework to ensure trust in AI systems
- Promoting the EU vision on sustainable and trustworthy AI in the world

BUILD STRATEGIC LEADERSHIP IN THE SECTORS

- Climate and environment
- Health
- Strategy for Robotics in the world of AI
- Public sector
- Law enforcement, immigration and asylum
- Mobility
- Agriculture

Investments: Horizon Europe, Digital Europe, Recovery and Resilience Facility

MAKE THE EU THE RIGHT PLACE for AI: EXCELLENCE FROM LAB TO THE MARKET
AI, DATA AND ROBOTICS IN THE FUNDING PROGRAMMES



AI IN HORIZON EUROPE



AI IN DIGITAL EUROPE PROGRAMME



R&D&I

CAPACITY & DEPLOYMENT



- RESEARCH, TECHNOLOGICAL DEVELOPMENT, DEMONSTRATION, PILOTING, PROOF-OF-CONCEPT
- → ALSO TECHNOLOGY TO SUPPORT THE REGULATORY FRAMEWORK (BIAS – TRANSPARENCY – ROBUST & SECURE, ETC.)
- → ALSO STRONG FOCUS ON ROBOTICS

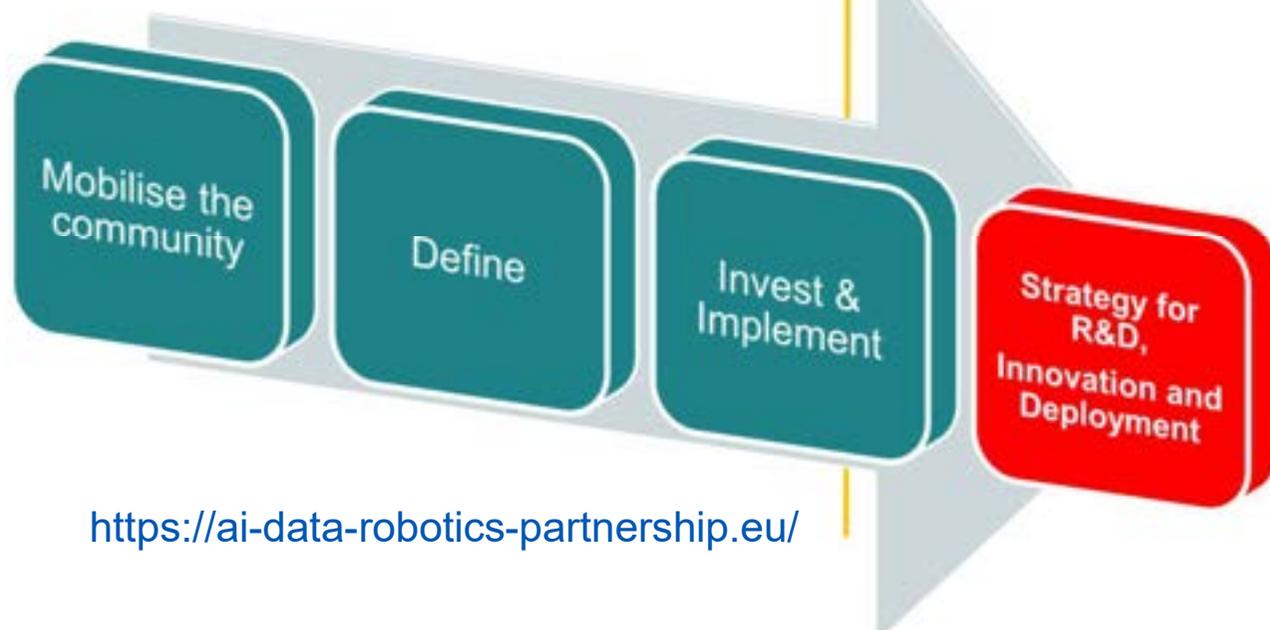
MAKE THE EU
THE RIGHT PLACE; EXCELLENCE FROM LAB
TO THE MARKET

AI, DATA AND ROBOTICS IN THE FUNDING PROGRAMMES



AI IN HORIZON EUROPE

PPP ON AI, DATA AND
ROBOTICS: → BE PART OF IT



<https://ai-data-robotics-partnership.eu/>

MAKE THE EU
THE RIGHT PLACE; EXCELLENCE FROM LAB
TO THE MARKET

AI, DATA AND ROBOTICS IN THE FUNDING PROGRAMMES



AI IN HORIZON EUROPE



Basic & Applied research

- Healthcare, Green Deal, Manufacturing, etc.

Networks of Excellence centers

Coordination & Support

- Ecosystem / Dissemination / Standardisation
- AI-on-Demand platform for the Scientific Community

MAKE THE EU
THE RIGHT PLACE; EXCELLENCE FROM LAB
TO THE MARKET
AI, DATA AND ROBOTICS IN THE FUNDING PROGRAMMES



AI IN DIGITAL EUROPE PROGRAMME



CAPACITY & DEPLOYMENT

- **CAPACITY AND INFRASTRUCTURE**
 - DATA & CLOUD
 - **TESTING AND EXPERIMENTATION FACILITIES FOR AI**
 - **AI-ON-DEMAND PLATFORM**
- **SKILLS**
- **BOOSTING DEPLOYMENT:**
 - **SMEs / PUBLIC SECTOR**
 - **WITH HELP OF EDIHS (EUROPEAN DIGITAL INNOVATION HUBS)**

MAKE THE EU
THE RIGHT PLACE; EXCELLENCE FROM LAB
TO THE MARKET
AI, DATA AND ROBOTICS IN THE FUNDING PROGRAMMES



AI IN DIGITAL EUROPE PROGRAMME



Testing and Experimentation Facilities

- Healthcare, Agri-food Manufacturing, Smart cities & Communities, Edge AI

AI-on-Demand Platform

- One Stop shop for AI
- For industry & Public Services

SKILLS

- AI & Robotics

EDIH

- At least one AI EDIH per country

MAKE THE EU
THE RIGHT PLACE; EXCELLENCE FROM LAB
TO THE MARKET

AI, DATA AND ROBOTICS IN THE FUNDING PROGRAMMES



AI IN HORIZON EUROPE



Upcoming
Call

OUTLINE

DESTINATION 4 DIGITAL AND EMERGING TECHNOLOGIES FOR COMPETITIVENESS AND FIT FOR THE GREEN DEAL

CALL:
Opening June 22
Closing November 22

Innovation in AI, Data and Robotics

DIGITAL-EMERGING-01-06:

AI, Data and Robotics for Industry optimisation (Production & Services) **(IA)**

Tomorrow's deployable Robots: efficient, robust, safe, adaptive and trusted

DIGITAL-EMERGING-01-06:

Pushing the limit of physical intelligence and performance **(RIA)**

DIGITAL-EMERGING-01-07:

Increased robotics capabilities demonstrated in key sectors **(IA)**

INNOVATION IN AI, DATA AND ROBOTICS



HORIZON-CL4-2022-DIGITAL-EMERGING-01-05

- AI, DATA AND ROBOTICS FOR INDUSTRY OPTIMISATION (INCLUDING PRODUCTION AND SERVICES) (IA)



AI, DATA AND ROBOTICS FOR FOR INDUSTRY OPTIMIZATION (PRODUCTION AND SERVICES)

EXPECTED OUTCOMES (AT LEAST ONE):



1. ADVANCING **AI, DATA AND ROBOTICS**, AND AUTOMATION FOR THE **OPTIMISATION OF PRODUCTION AND SERVICES VALUE-CHAINS**

- PRODUCTS, SERVICES, PROCESSES
- COMPETITIVENESS, WORKING CONDITIONS, AND ENVIR. SUSTAINABILITY

2. **AI FOR ADAPTING PRODUCTION OR SERVICES WORKFLOWS** TO

- CHANGING ENVIRONMENTS,
- DYNAMIC AND UNPREDICTABLE RESOURCE CONSTRAINT
- CAPABILITIES AND RESTRICTIONS OF HUMANS
- TRANSFERRING RESULTS FROM ONE DOMAIN TO ANOTHER.

SPECIFY FOCUS : Production or Services !!



TOMORROW'S DEPLOYABLE ROBOTS: EFFICIENT, ROBUST, SAFE, ADAPTIVE AND TRUSTED

DIGITAL-EMERGING-01-06

- PUSHING THE LIMIT OF PHYSICAL INTELLIGENCE AND PERFORMANCE (**RIA**)

DIGITAL-EMERGING-01-07

- INCREASED ROBOTICS CAPABILITIES DEMONSTRATED IN KEY SECTORS (**IA**)





TOMORROW'S DEPLOYABLE ROBOTS: EFFICIENT, ROBUST, SAFE, ADAPTIVE AND TRUSTED

DIGITAL-EMERGING-01-06

- PUSHING THE LIMIT OF PHYSICAL INTELLIGENCE AND PERFORMANCE
(**RIA**)

DIGITAL-EMERGING-01-07

- INCREASED ROBOTICS CAPABILITIES DEMONSTRATED IN KEY
SECTORS (**IA**)



PUSHING THE LIMIT OF PHYSICAL INTELLIGENCE AND PERFORMANCE

EXPECTED OUTCOMES (AT LEAST ONE)

SAFE/EFFICIENT PHYSICAL INTERACTION (SPEED)



**+ROBUST → ADAPT TO CHANGE
LONG-TERM AUTONOMY &
TRUSTWORTHY/DEPENDABLE**

**ADVANCED PHYSICAL FUNCTIONALITY
/CAPA / EFFICENCY / BEYOND
HUMAN**

SCOPE: **SIGNIFICANTLY** EXTEND PHYSICAL CAPABILITY

PHYSICAL
PERFORMANCE

ROBUSTNESS & RESILIENCE,
ENERGY EFFICIENCY + SAFETY &
AUTONOMY, SPEED, EXTREME
PHYSICAL CONDITIONS

PROMISING/
INNOVATIVE
CONCEPTS

COLLABORATIVE, MODULAR AND
DISTRIBUTED, HYPER REDUNDANT,
HIGHLY RECONFIGURABLE, SOFT
OR MINIATURISED ROBOTICS
➔ ADAPTATION (INDUSTRY AND
SOCIETY)
➔ NOVEL CONFIGURATIONS AND
CONCEPTS



TOMORROW'S DEPLOYABLE ROBOTS: EFFICIENT, ROBUST, SAFE, ADAPTIVE AND TRUSTED



DIGITAL-EMERGING-01-06

- PUSHING THE LIMIT OF PHYSICAL INTELLIGENCE AND PERFORMANCE (**RIA**)

DIGITAL-EMERGING-01-07

- INCREASED ROBOTICS CAPABILITIES DEMONSTRATED IN KEY SECTORS (**IA**)



EXPECTED OUTCOMES CONTRIBUTE (AT LEAST ONE)

DEMONSTRATORS/SYSTEMS ABLE TO SHOW

ADDED VALUE OF ROBOTICS + THEIR PERFORMANCES

- MAJOR APPLICATION SECTORS
- OR DDD + STRENUOUS
- OR EXTREME ENVIRONMENTS

BEYOND HUMAN PERFORMANCE IN COMPLEX TASKS

- HIGH IMPACT IN
KEY SECTORS
- ++ADAPTATION
& FLEXIBILITY

HIGH LEVELS OF REACTIVITY & RESPONSIVENESS & INTELLIGIBILITY

- INTERACTION
(HUMAN-ROBOT/ROBOT-
ROBOT)
- MAJOR
APPLICATION
SECTORS



Leadership in AI based on trust

CALL:
Opening June 22
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HORIZON-CL4-2022-HUMAN-01-01

- AI for human empowerment (AI, Data and Robotics Partnership) (RIA)

HORIZON-CL4-2022-HUMAN-01-02

- European Network of AI Excellence Centres: Expanding the European AI lighthouse (RIA)

Leadership in AI based on trust

HORIZON-CL4-2022-
HUMAN-01-01

- AI for human empowerment (AI, Data and Robotics Partnership) (RIA)



Work Programme topic – HUMAN-01-01 AI for human empowerment

1. What are we looking for? (1/2)

Next level of **perception, visualisation, interaction** and **collaboration** between humans and AI systems working together to achieve common goals, sharing mutual understanding and learning of each other's abilities and respective roles.

Innovative and promising approaches incl. **human-in the loop** approaches for truly mixed human-AI initiatives combining the best of human and machine knowledge and capabilities, tacit knowledge extraction





Work Programme topic – HUMAN-01-01 AI for human empowerment

1. What are we looking for? (2/2)

Focus on one of the two following research objectives:

A. Reach truly mixed human-AI initiatives for human empowerment.

B. Trustworthy hybrid decision-support



Leadership in AI based on trust

HORIZON-CL4-2022- HUMAN-01-02

- European Network of AI Excellence Centres: Expanding the European AI lighthouse (RIA)



Work Programme topic – HUMAN-01-02 European Network of AI Excellence Centres

1. What are you looking for?

- Scientific progress in AI, addressing major challenges hampering its deployment, including systems engineering.
- Build-up the European AI lighthouse, initiated by earlier Networks of excellence centers
- Unify and reinforce the world-class European AI community
→ Create strong visibility & identity for the vibrant AI community in Europe





SCOPE



Reinforce and network excellence centres in AI
Best scientists from academia and industry
join forces

Major AI challenges hampering deployment

**Reinforce excellence through
collaboration in AI throughout Europe**





TECHNOLOGY FOCUS

NEXT GENERATION AI –

SCIENTIFIC RESEARCH AND TECHNOLOGIES PRIORITISED IN THE LATEST SRIDA (AI, DATA, ROBOTICS PARTNERSHIP)

FOUNDATIONAL RESEARCH AND EMERGING AND NOVEL APPROACHES, WITH A VIEW OF IMPROVING THE TECHNICAL PERFORMANCES OF AI-BASED SYSTEMS

NEW PARADIGMS, ALGORITHMS, ARCHITECTURES AND NOVEL OPTIMIZATION AND REGULARIZATION METHODS, HYBRID AI, HYBRID MACHINE LEARNING, DATA/SAMPLE –EFFICIENCY

SCIENTIFIC RESEARCH AND TECHNOLOGIES PRIORITISED IN THE LATEST SRIDA (AI, DATA AND ROBOTICS PPP), AND COMPLEMENTING THE PREVIOUSLY SELECTED NETWORKS OF EXCELLENCE CENTRES (H2020-ICT48, HORIZON-CL4-2021-HUMAN-01-03)

Upcoming events / information days

Stay tuned:

SPECIFIC INFODAYS IN DUE COURSE → Call OPENS in JUNE 2022

Check **AI-Data-Robotics PPP** - <https://ai-data-robotics-partnership.eu/>



CALL:
Opening June 22
Closing November 22

Thank you

Cecile.Huet@ec.europa.eu

<https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence>

