

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

09:30 - 09:45am

**Welcome and Presentation AI, Data and Robotics Association  
(Adra)**

Morten Irgens - *Vice President of Adra*

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

09:45-11:15am

### Presentation of topics by the European Commission and Q&A

*Cécile Huet - Deputy Head of Unit. Robotics & Artificial Intelligence, DG CONNECT*

*Stefano Bertolo - Scientific Programme Manager Data Policy and Innovation, DG CONNECT*

*Kimmo Rossi - Head of Sector Research and Innovation Execution in the Data Value Chain, DG CONNECT*



# HORIZON EUROPE



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## THE EU RESEARCH & INNOVATION PROGRAMME

2021 – 2027

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**CÉCILE HUET**

Acting Head of Unit

Robotics & AI Innovation and Excellence  
European Commission DG CONNECT



# OUTLINE

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

### Innovation in AI, Data and Robotics

DIGITAL-EMERGING-01-09: AI, Data and Robotics for the Green Deal (IA)

DIGITAL-EMERGING-01-10: AI, Data and Robotics at work (IA)

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

DIGITAL-EMERGING-01-11: Pushing the limit of robotics cognition (RIA)

DIGITAL-EMERGING-01-12: European Network of Excellence Centres in Robotics (RIA)

## DESTINATION 6 A HUMAN-CENTRED AND ETHICAL DEVELOPMENT OF DIGITAL AND INDUSTRIAL TECHNOLOGIES

### Leadership in AI based on trust

HUMAN-01-01: Verifiable robustness, energy efficiency and transparency for Trustworthy AI: Scientific excellence boosting industrial competitiveness (RIA)

HUMAN-01-02: European coordination, awareness, standardisation & adoption of trustworthy European AI, Data and Robotics (CSA)

HUMAN-01-03: European Network of AI Excellence Centres: Pillars of the European AI lighthouse (RIA)

HUMAN-01-24: Tackling gender, race and other biases in AI (RIA)

HUMAN-01-27: AI to fight disinformation (RIA)



# INNOVATION IN AI, DATA AND ROBOTICS



## HORIZON-CL4-2021-DIGITAL-EMERGING-01-09

- AI, DATA AND ROBOTICS FOR THE GREEN DEAL

## HORIZON-CL4-2021-DIGITAL-EMERGING-01-10

- AI, DATA AND ROBOTICS AT WORK





**HORIZON-CL4-2021-DIGITAL-EMERGING-01-09**  
**HORIZON-CL4-2021-DIGITAL-EMERGING-01-10**



**TYPE: Innovation Action (IA)**



**BUDGET: 3 OR 5M€/project**  
→ May provide FSTP\*



**TRL start: 3-5 → TRL end: 6-7**



\* FSTP: Financial Support to Third Parties



# AI, DATA AND ROBOTICS FOR THE GREEN DEAL

## EXPECTED OUTCOMES:

1. Resource optimisation and minimisation of waste, energy, or greenhouse gas emissions
2. Environmental and waste management in the circular economy
3. Robotics solutions in harsh environments serving the Green Deal

(Awarding will ensure balanced portfolio coverage)



**SPECIFY: FOCUS**  
+  
**ROBOTICS (Y/N)**





# AI, DATA AND ROBOTICS **AT WORK**

## EXPECTED OUTCOMES:

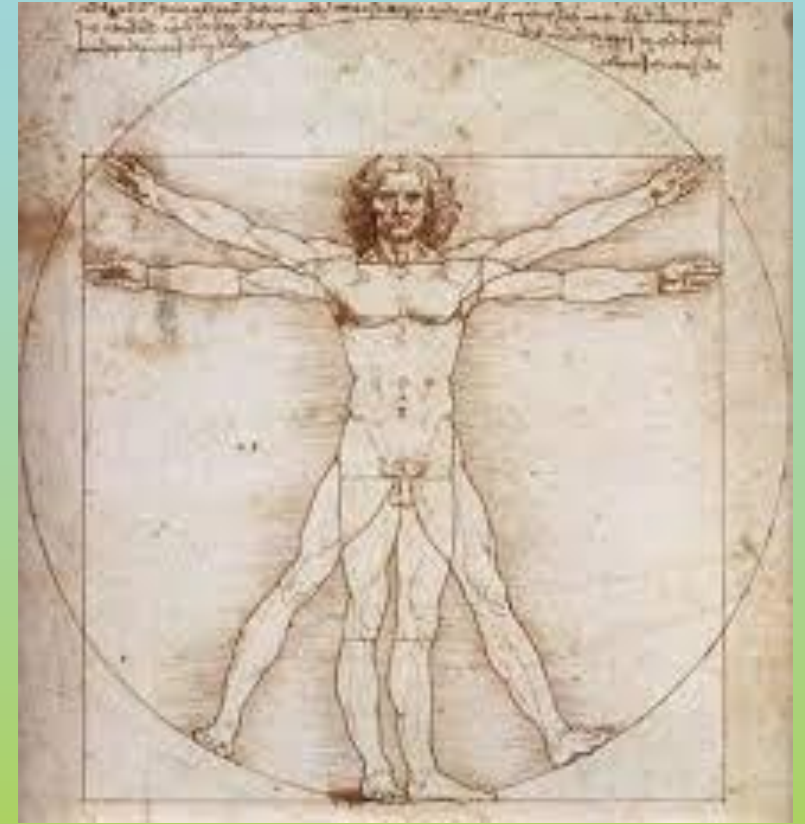


**1. Collaborative embodied (physical) AI:**  
New human-centred paradigm to keep people away from unsafe and unhealthy jobs via

**2. Human-centric AI supporting professionals in trustworthy hybrid decision-making, and optimizing their tasks**



**SPECIFY: FOCUS**



(Awarding will ensure balanced portfolio coverage)

# SCOPE: INTEGRATE AND OPTIMISE AI, DATA AND ROBOTICS SOLUTIONS TO DEMONSTRATE HOW THEY CAN CONTRIBUTE TO THE APPLICATION

- Use-cases driven
- Demonstrate:
  - technology performance
  - added value to the application field
- Deep involvement of stakeholders



# TWO TYPES OF PROPOSALS:

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## FOCUSED PROJECTS

~3M€:

- user industry
- technology providers

## LARGER PROJECTS

~5M€

Must include FSTP:

- >40% of the budget
- up to 200K€/TP
- TP = SMEs (70% funding) and start-ups (100% funding)

# OTHER REQUIREMENTS:

Build on existing results

Connect with stakeholders, DIH  
**+ PPP**

User industries:  
- requirements  
- validation

Support to SMEs and Start-ups



## 1. What are you looking for?

- Integrate and optimise AI, data and robotics solutions to demonstrate how they can contribute to the Application
- Right mix of expertise
- BOTH Small (focused) and Large (FSTP) projects → encourage GOOD FSTP as well

## 2. What do you NOT want?

- Major Research component → BUT build on latest developments
- Tech push / Invented problems
- Anything artificial → BUT everything optimized towards the project objectives

# TOMORROW'S DEPLOYABLE ROBOTS:



EFFICIENT, ROBUST, SAFE, ADAPTIVE AND TRUSTED

HORIZON-CL4-2021-DIGITAL-EMERGING-01-11

- PUSHING THE LIMIT OF ROBOTICS COGNITION

HORIZON-CL4-2021-DIGITAL-EMERGING-01-12

- EUROPEAN NETWORK OF EXCELLENCE CENTRES IN ROBOTICS





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

HORIZON-CL4-2021-DIGITAL-EMERGING-01-11

- PUSHING THE LIMIT OF ROBOTICS COGNITION

HORIZON-CL4-2021-DIGITAL-EMERGING-01-12

- EUROPEAN NETWORK OF EXCELLENCE CENTRES IN ROBOTICS





## HORIZON-CL4-2021-DIGITAL-EMERGING-01-11 PUSHING THE LIMIT OF ROBOTICS COGNITION



TYPE: Research and Innovation Action (RIA)



BUDGET: ~5 M€/project



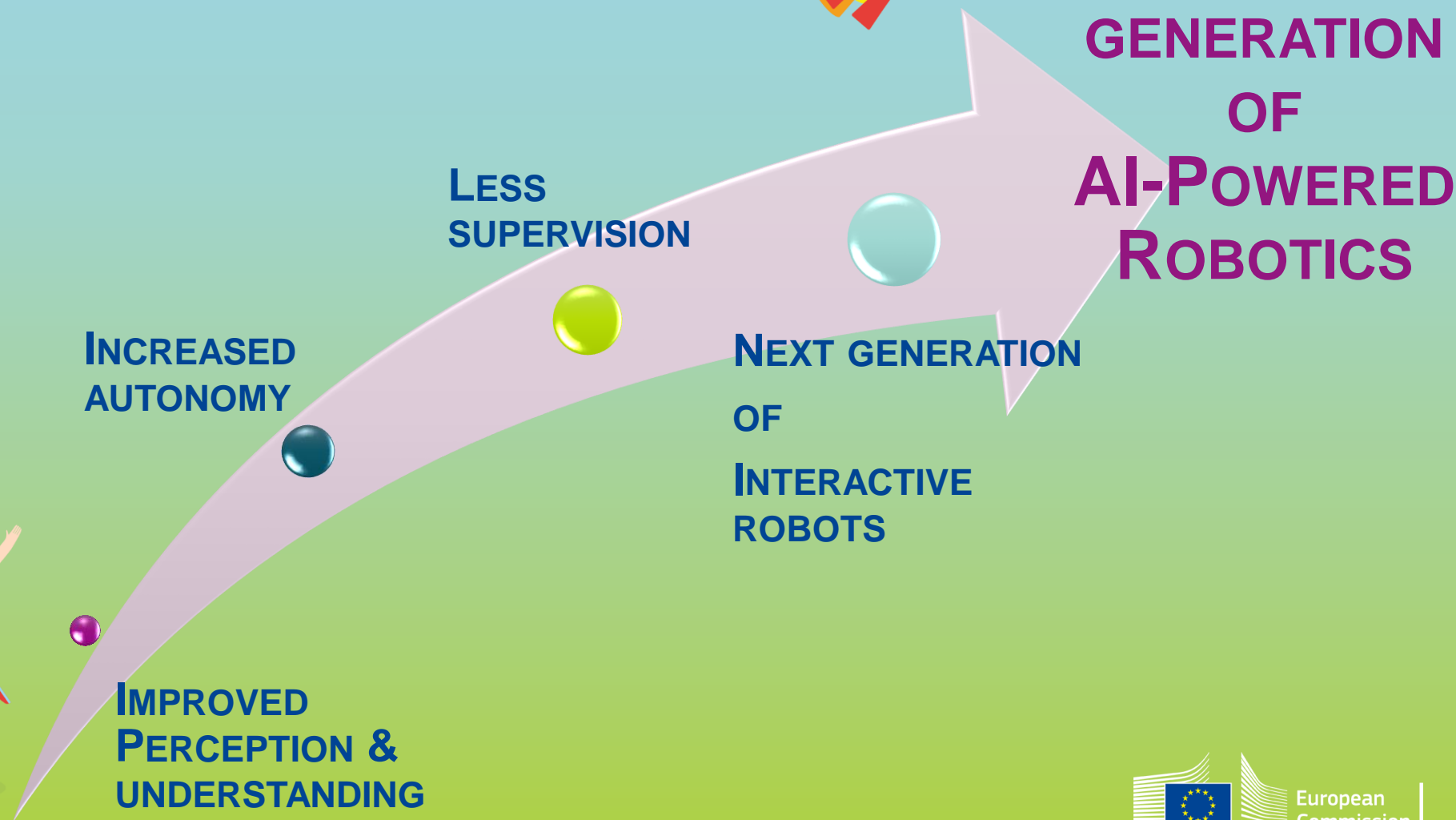
TRL start: 2-3 → TRL end: 4-5





# PUSHING THE LIMIT OF ROBOTICS COGNITION

## EXPECTED OUTCOME



**INCREASED  
AUTONOMY**

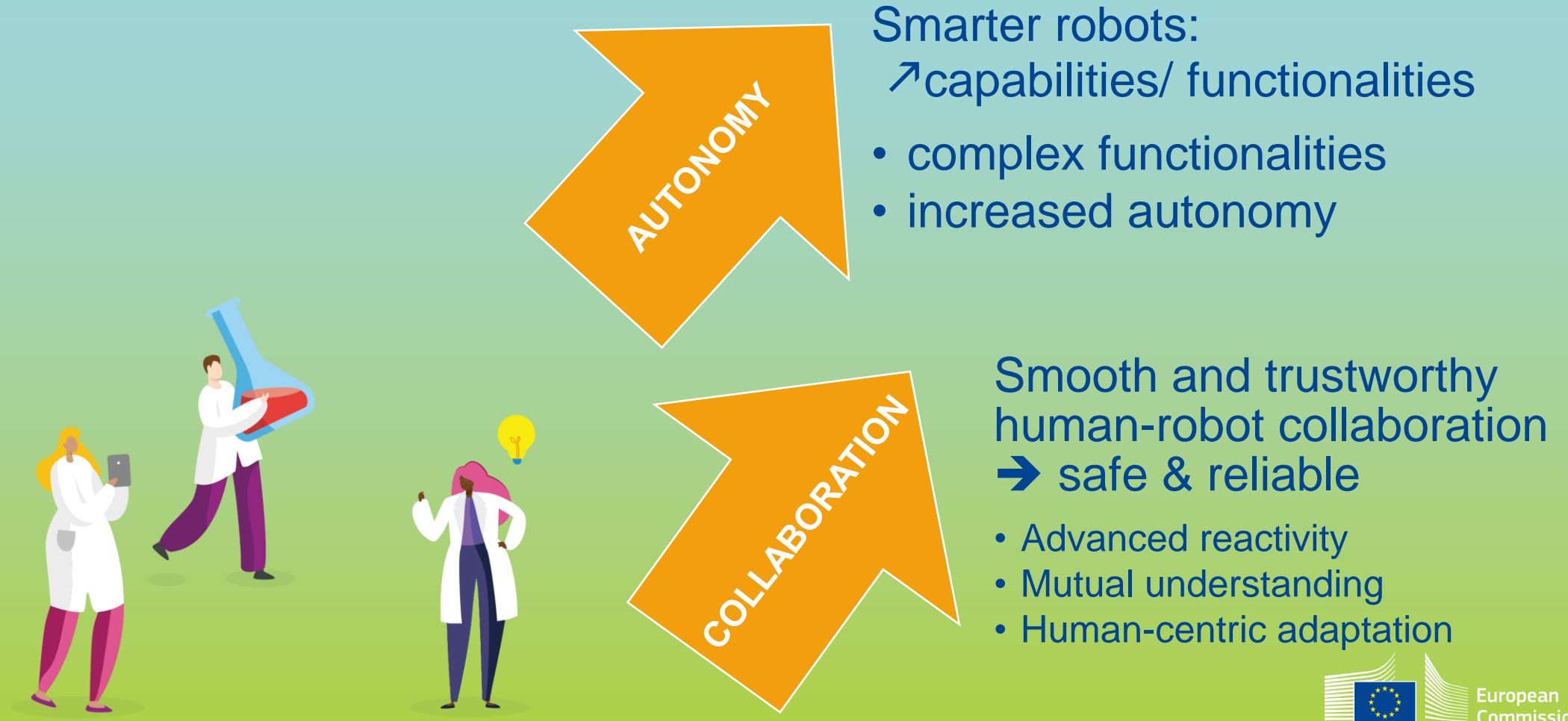
**LESS  
SUPERVISION**

**NEXT GENERATION  
OF  
INTERACTIVE  
ROBOTS**

**IMPROVED  
PERCEPTION &  
UNDERSTANDING**

**NEW  
GENERATION  
OF  
AI-POWERED  
ROBOTICS**

# ADDITIONAL EXPECTED OUTCOME DEPENDING ON THE FOCUS OF THE PROPOSAL



# ALL PROPOSALS EXPECTED TO

DEMONSTRATE  
IMPROVEMENTS

improvement in  
robotics cognition in 3  
real-world scenarios

measurements of  
functional  
performance





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

HORIZON-CL4-2021-DIGITAL-EMERGING-01-11

- PUSHING THE LIMIT OF ROBOTICS COGNITION

HORIZON-CL4-2021-DIGITAL-EMERGING-01-12

- EUROPEAN NETWORK OF EXCELLENCE CENTRES IN ROBOTICS





HORIZON-CL4-2021-DIGITAL-EMERGING-01-11

## EUROPEAN NETWORK OF EXCELLENCE CENTRES IN ROBOTICS



TYPE: Research and Innovation Action (RIA)



BUDGET: ~11.5M€/project  
→ May provide FSTP\* (up to 20% /60k€ per TP)



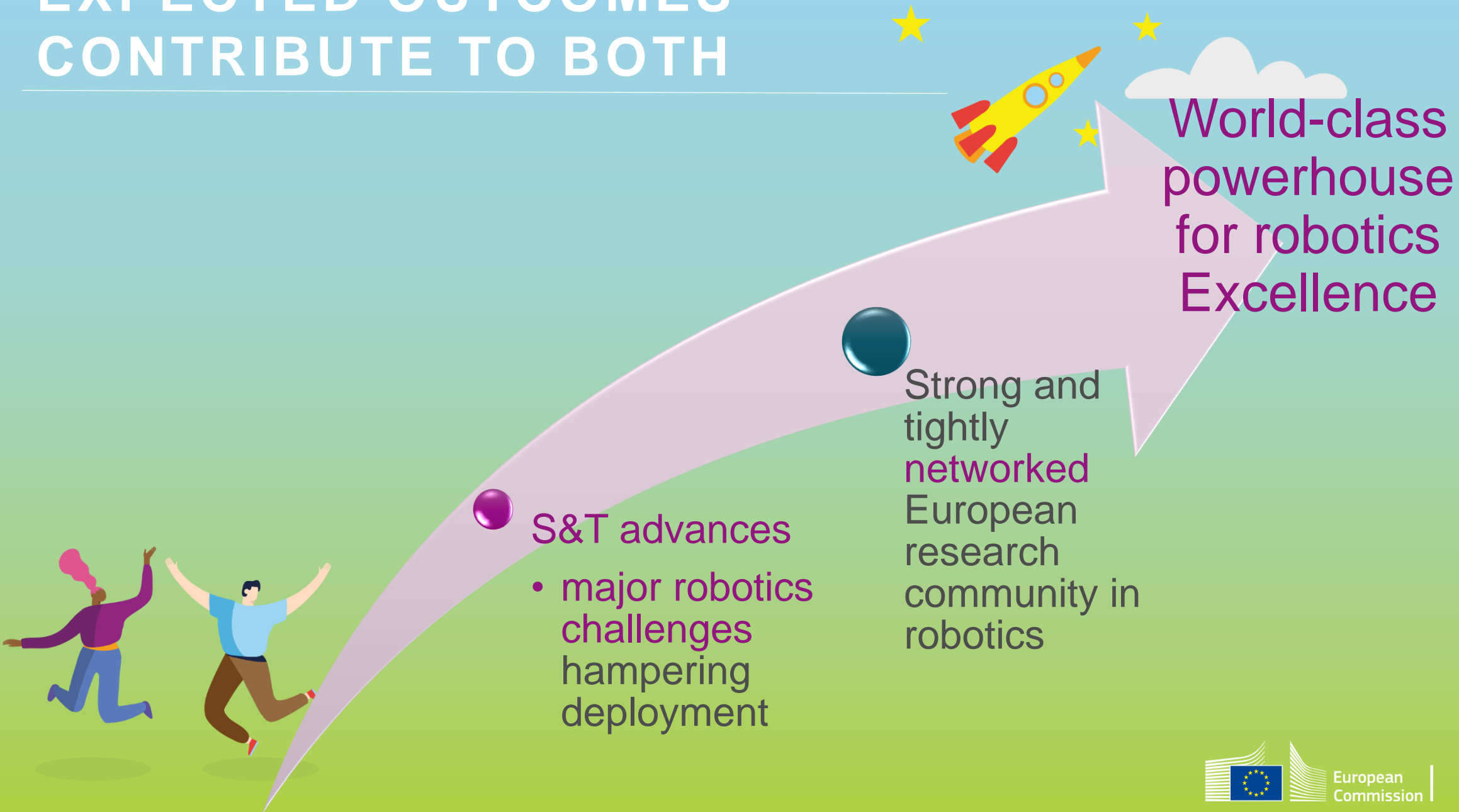
TRL start: 2-3 → TRL end: 4-5



\* FSTP: Financial Support to Third Parties



# EXPECTED OUTCOMES CONTRIBUTE TO BOTH



World-class  
powerhouse  
for robotics  
Excellence

S&T advances

- major robotics challenges hampering deployment

Strong and tightly  
**networked**  
European  
research  
community in  
robotics



## SCOPE



Best scientists from academia and industry  
join forces

Major challenges hampering robotics deployment

Reinforce excellence throughout Europe

Network of collaboration

Research excellence

Future industrial needs.





## TECHNOLOGY FOCUS

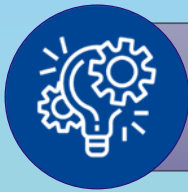
### S&T EXCELLENCE IN KEY ROBOTICS TOPICS

→ Reinforce & network **excellence centres** in AI-powered robotics\*

- 
- Reach critical mass
  - Increase the impact of the funding
  - Progress faster in **joined efforts**

\*AI-powered robotics: robots with certain level of intelligence/autonomy in their behaviour





## ACTIVITIES - RESEARCH

### FOCUS

- Major S&T **CHALLENGES** with **INDUSTRIAL** relevance
- where Europe will **MAKE A DIFFERENCE**

### DEVELOP & IMPLEMENT RESEARCH AGENDAS

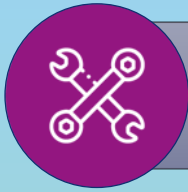
- **VISION + ROADMAP + MONITOR PROGRESS**

**SPECIFIED IN PROPOSAL & FURTHER DEVELOPED DURING THE PROJECT.**

### DEMONSTRATE PROGRESS

- Use-cases

### ACCESS RESOURCES AND INFRASTRUCTURE



## ADDITIONAL TASKS - RESEARCH

**MAJOR SCIENTIFIC AND APPLICATION CHALLENGES** to **MOBILISE** the community to join forces in addressing them.

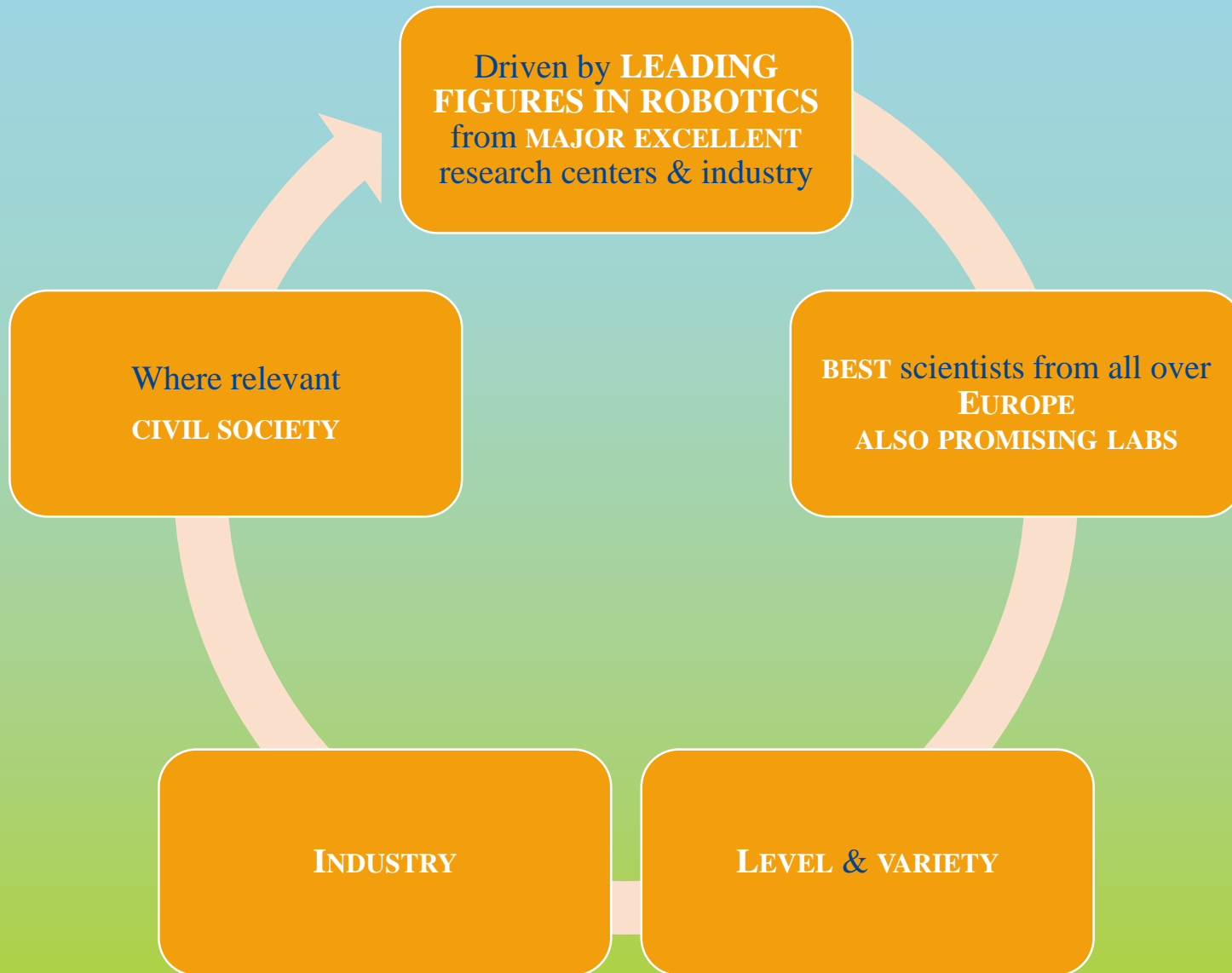
**CONTINUOUS EVALUATION & DEMONSTRATION** of PROGRESS

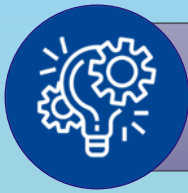
- **MOTIVATE** the entire network
- support publications and scientific **CAREER** developments
- showcase in applications → **ATTRACT USER INDUSTRIES** and **FOSTER ADOPTION**.

**QUALITATIVE AND QUANTITATIVE KPIs**



## COMPOSITION





# ACTIVITIES – DEVELOP STRONG NETWORK

## Build STRONG LINKS

**FOSTER EXCELLENCE**  
→ efficient collaboration

## DISSEMINATE TO ALL academic/industrial Robotics labs in Europe

Collaborative projects /Exchange programmes

Defined initially  
or  
Via financial support to third parties - **OPTIONAL!**

- max. 20% of EU contribution

→ SELECT THE MOST EFFICIENT

## Interactions with INDUSTRY

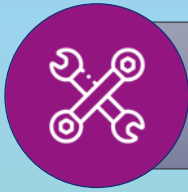
+ Possibly **TRADE UNIONS/CIVIL SOCIETY**

## Foster INNOVATION (e.g. incubators).

## Synergies & cross-fertilization

**DIGITAL INNOVATION HUBS**

**INDUSTRY-CIVIL SOCIETY-ACADEMIA**



## ADDITIONAL TASKS: NETWORKING AND COLLABORATION

COLLABORATION MECHANISMS among the best robotics teams

+ Mechanisms to spread knowledge & BRING ALL European robotics teams to the HIGHEST LEVEL of excellence

Sharing to optimise progress

SHARE resources, knowledge, tools, modules, software, results, expertise

OPENNESS AND INTEROPERABILITY OF COMPONENTS

Make EQUIPMENT/INFRASTRUCTURE AVAILABLE

EXPLOIT & EXPAND: **AI-ON-DEMAND PLATFORM** and DIGITAL INDUSTRIAL PLATFORM FOR ROBOTICS

# Work Programme topic: What are you looking for?

HORIZON-CL4-2021-DIGITAL-EMERGING-01-11

- PUSHING THE LIMIT OF ROBOTICS COGNITION

Substantial improvement in AI-Powered Robotics → Ambitious

HORIZON-CL4-2021-DIGITAL-EMERGING-01-12

- EUROPEAN NETWORK OF EXCELLENCE CENTRES IN ROBOTICS

Bring the Best Scientists & develop strong collaborations

Bring all European labs to the top → scientific advances

## 2. What do you NOT want?

HORIZON-CL4-2021-DIGITAL-EMERGING-01-11

- PUSHING THE LIMIT OF ROBOTICS COGNITION

Incremental progress

HORIZON-CL4-2021-DIGITAL-EMERGING-01-12

- EUROPEAN NETWORK OF EXCELLENCE CENTRES IN ROBOTICS

A “Talk show” without substantial research progress / a standard research project

# OUTLINE

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HUMAN-01-24: Tackling gender, race and other biases in AI (RIA)

HUMAN-01-27: AI to fight disinformation (RIA)





# Leadership in AI based on trust

HORIZON-CL4-2021-HUMAN-01-01

- Verifiable robustness, energy efficiency and transparency for **Trustworthy AI: Scientific** excellence boosting industrial competitiveness (AI, Data and Robotics Partnership) (RIA)

HORIZON-CL4-2021-HUMAN-01-02

- European **coordination**, awareness, standardisation & adoption of trustworthy European AI, Data and Robotics (AI, Data and Robotics Partnership) (**CSA**)

HORIZON-CL4-2021-HUMAN-01-03

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

HORIZON-CL4-2021-HUMAN-01-24 (Watch Infoday June 29)

- Tackling gender, race and other **biases** in AI (RIA)

HORIZON-CL4-2021-HUMAN-01-27 (Watch Infoday June 29)

- AI to fight **disinformation** (RIA)

# Leadership in AI based on trust

HORIZON-CL4-2021-HUMAN-01-01

- VERIFIABLE ROBUSTNESS, ENERGY EFFICIENCY AND TRANSPARENCY FOR TRUSTWORTHY AI: SCIENTIFIC EXCELLENCE BOOSTING INDUSTRIAL COMPETITIVENESS (RIA)

HORIZON-CL4-2021-HUMAN-01-02

- European coordination, awareness, standardisation & adoption of trustworthy European AI, Data and Robotics (AI, Data and Robotics Partnership) (CSA)

HORIZON-CL4-2021-HUMAN-01-03

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

HORIZON-CL4-2021-HUMAN-01-24

- Tackling gender, race and other biases in AI (RIA)

HORIZON-CL4-2021-HUMAN-01-27

- AI to fight disinformation (RIA)

# HORIZON-CL4-2021-HUMAN-01-01: Verifiable robustness, energy efficiency and transparency for Trustworthy AI: Scientific excellence boosting industrial competitiveness (RIA)



TYPE: Research and Innovation Action (RIA)



BUDGET: ~4M€/project



TRL start: 2-3 → TRL end: 4-5

## HORIZON-CL4-2021-HUMAN-01-01: EXPECTED OUTCOME (at least one)

World-class trustworthy AI

Improved AI solutions meeting the industrial requirements

Greener AI

Next level of AI-based solutions, exploiting the intelligence embedded in the edge-to cloud infrastructure

Advances in complex systems & socially aware AI

# HORIZON-CL4-2021-HUMAN-01-01:RESEARCH AREAS

- WORLD CLASS AI
- ADVANCED TRANSPARENCY IN AI
- GREENER AI
- EDGE AI NETWORKS
- ADVANCES IN COMPLEX SYSTEMS & SOCIALLY AWARE AI



## HORIZON-CL4-2021-HUMAN-01-01: EXPECTED OUTCOME

**Build the next  
level of  
“intelligence”  
and autonomy**

**Solid Scientific  
development**

- **SELECT ONE  
OF THE 5  
RESEARCH  
AREAS**

**Demonstrate  
potential  
benefits in  
particular  
applications**

**TRUST-  
WORTHY  
AI**

# ADDITIONAL REQUIREMENTS TO ALL PROPOSALS

## WHAT

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Focus: Scientific foundations for AI systems

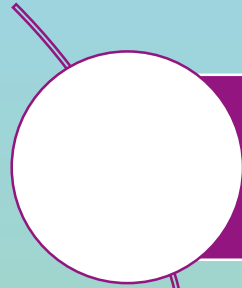
BUT demonstrate relevance to real-world applications

- E.g: use-cases used to demonstrate scientific progress.

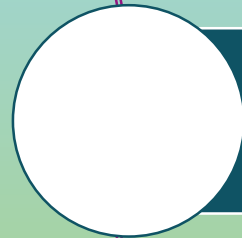
Assess & demonstrate progress (KPIs, demonstrators, benchmarking,...)

# ADDITIONAL REQUIREMENTS TO ALL PROPOSALS

## WHO?



World-class research labs and top scientists



European companies from major industrial sectors for Europe  
→ AI “made in Europe” key for their competitiveness.



Multidisciplinary teams





# Leadership in AI based on trust

HORIZON-CL4-2021-HUMAN-01-01

- Verifiable robustness, energy efficiency and transparency for Trustworthy AI: Scientific excellence boosting industrial competitiveness (AI, Data and Robotics Partnership) (RIA)

HORIZON-CL4-2021-HUMAN-01-02

- EUROPEAN COORDINATION, AWARENESS, STANDARDISATION & ADOPTION OF TRUSTWORTHY EUROPEAN AI, DATA AND ROBOTICS (CSA)

HORIZON-CL4-2021-HUMAN-01-03

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

HORIZON-CL4-2021-HUMAN-01-24

- Tackling gender, race and other biases in AI (RIA)

HORIZON-CL4-2021-HUMAN-01-27

- AI to fight disinformation (RIA)

# EUROPEAN COORDINATION, AWARENESS, STANDARDISATION & ADOPTION OF TRUSTWORTHY EUROPEAN AI, DATA AND ROBOTICS (CSA)



TYPE: Coordination and Support Action (CSA)



BUDGET:

~4M€/project: Outcome/Focus 1  
~9M€/project: Outcome/Focus 2

# EUROPEAN COORDINATION, AWARENESS, STANDARDISATION & ADOPTION OF TRUSTWORTHY EUROPEAN AI, DATA AND ROBOTICS (CSA)



## OUTCOME 1

- PPP
  - COORDINATION / NETWORKING
  - ADOPTION OF AI IN ALL MEMBER STATES AND ASSOCIATED COUNTRIES
  - WIDESPREAD EDUCATION AND OUTREACH
  - PROCUREMENT FOR AI ADOPTION
  - STANDARDISATION TO BOOST INDUSTRY

## OUTCOME 2

- AI-ON-DEMAND-PLATFORM serving the research community



# EUROPEAN COORDINATION, AWARENESS, STANDARDISATION & ADOPTION OF TRUSTWORTHY EUROPEAN AI, DATA AND ROBOTICS (CSA)

SERVE THE RESEARCH COMMUNITY  
PROMOTE EXCELLENCE

SHARE TO  
CONTINUOUSLY STRENGTHEN S&T EXCELLENCE  
+  
DEMONSTRATE PROGRESS & COMPARE  
SOLUTIONS

## AI-ON-DEMAND PLATFORM

WHAT:  
- MODULES, CODE, TOOLS, KNOWLEDGE  
- ACCESS TO RESOURCES  
(DATA/COMP./CLOUD)  
➔ COMPLETE DEVELOPMENT ENVIRONMENT

HOW:  
DEVELOPMENTS & SERVICES  
+ MAINTENANCE

# Leadership in AI based on trust

## HORIZON-CL4-2021-HUMAN-01-01

- Verifiable robustness, energy efficiency and transparency for Trustworthy AI: Scientific excellence boosting industrial competitiveness (AI, Data and Robotics Partnership) (RIA)

## HORIZON-CL4-2021-HUMAN-01-02

- European coordination, awareness, standardisation & adoption of trustworthy European AI, Data and Robotics (AI, Data and Robotics Partnership) (CSA)

## HORIZON-CL4-2021-HUMAN-01-03

- EUROPEAN NETWORK OF AI EXCELLENCE CENTRES: PILLARS OF THE EUROPEAN AI LIGHTHOUSE (RIA)

## HORIZON-CL4-2021-HUMAN-01-24

- Tackling gender, race and other biases in AI (RIA)

## HORIZON-CL4-2021-HUMAN-01-27

- AI to fight disinformation (RIA)

# EUROPEAN NETWORK OF AI EXCELLENCE CENTRES: PILLARS OF THE EUROPEAN AI\* LIGHTHOUSE (RIA)



TYPE: Research and Innovation Action (RIA)



BUDGET: ~9M€/project

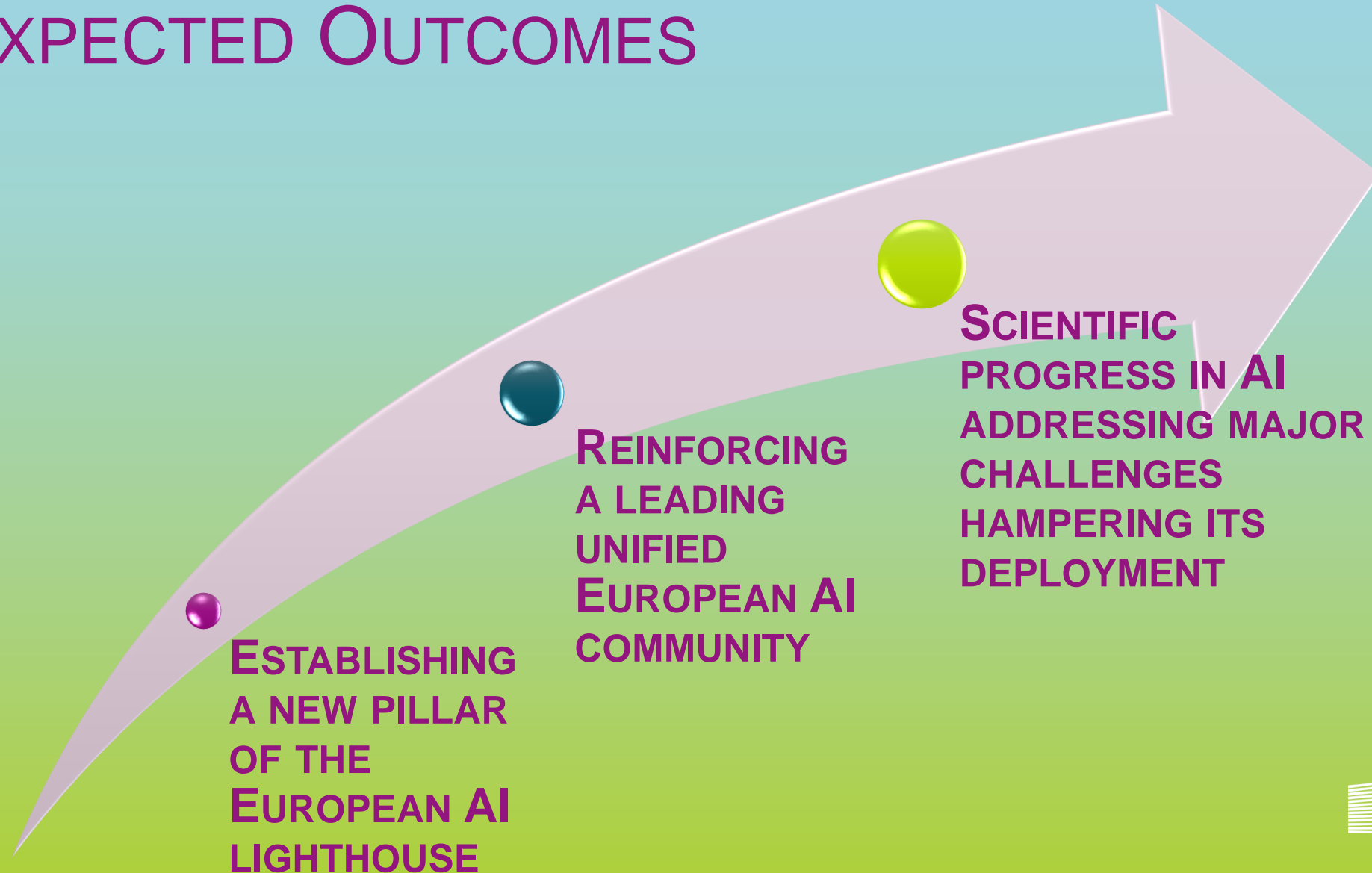


TRL start: 2-3 → TRL end: 4-5

\*In this section AI is taken in the broad sense and covers AI, Data and Robotics

# EUROPEAN NETWORK OF AI EXCELLENCE CENTRES: PILLARS OF THE EUROPEAN AI\* LIGHTHOUSE (RIA)

## EXPECTED OUTCOMES



# EUROPEAN NETWORK OF AI EXCELLENCE CENTRES: PILLARS OF THE EUROPEAN AI\* LIGHTHOUSE (RIA)

## AI LIGHTHOUSE

CRITICAL MASS & OVERCOME  
FRAGMENTATION

BUILD ON KEY PILLARS → NETWORKS OF  
EXCELLENCE CENTRES SPECIALISING IN A GIVEN  
TOPIC WHERE EUROPE HAS THE POTENTIAL TO  
BECOME A GLOBAL CHAMPION.

MOBILISE THE AI COMMUNITY  
TO COLLABORATE ON KEY AI  
RESEARCH CHALLENGES

BRING TOGETHER  
STAKEHOLDERS FROM  
RESEARCH, INNOVATION AND  
DEPLOYMENT, TO BECOME A  
WORLD REFERENCE IN AI  
THAT CAN ATTRACT  
INVESTMENTS AND THE BEST  
TALENTS IN THE FIELD

BUILD ON H2020-ICT-48  
PROJECTS + FUTURE  
HORIZON EUROPE CALLS.





## 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

**RESEARCH**

**GOOD PRACTICES,  
STANDARDS AND  
CERTIFICATION**

**COLLABORATION:  
AI + SAFETY  
ENGINEERING,  
SECURITY,  
CYBERSECURITY,...**

**SAFE AND  
SECURE AI  
SAFETY &  
SECURITY BY  
DESIGN**

**ADDRESS MAJOR  
TECHNICAL+  
SECTOR/SOCIETAL-  
DRIVEN  
CHALLENGES**



# RESEARCH TOPICS TO BE COVERED

TECHNICAL ROBUSTNESS AND SAFETY

→ EVALUATING THE RESILIENCE, QUANTIFYING ROBUSTNESS

PRIVACY PRESERVING TECHNIQUES AND INFRASTRUCTURES

HUMAN AGENCY AND OVERSIGHT

→ EXPLAINABILITY TO DETECT/PREVENT/MITIGATE/RECOVER FROM HARM & THREATS,...

...

## What do you NOT want?

### HUMAN-01-01 - Trustworthy AI: Scientific excellence boosting industrial

- Scientific progress disconnected from industry needs / incremental – lack of ambition

### HUMAN-01-02: CSA + AI-on-Demand Platform

- CSA - Silos (school of thought / AI approaches, technologies, or between actions from the CSA)
- AI-on-demand platform not driven by Scientific needs

### HUMAN-01-03: Network of AI Excellence Centres

- Second-Class experts in AI
- Focusing on Security applications → this is security for AI (safe & secure AI), not AI for security

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FOR ALL TOPICS PRESENTED



***PROJECT REQUESTED TO***

- DEDICATE A TASK TO CONNECT TO THE CSA – PPP ON AI, DATA AND ROBOTICS***
- PUT THEIR COMMUNICABLE RESULTS ON THE AI-ON-DEMAND PLATFORM***





# Thank You!

Watch the full presentations on:

<https://www.horizon-europe-infodays2021.eu/event/cluster-4-digital-industry-space>

OFFICIAL WORKPROGRAMME TEXT (THE ONLY LEGAL REFERENCE):

[https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-7-digital-industry-and-space\\_horizon-2021-2022\\_en.pdf](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-7-digital-industry-and-space_horizon-2021-2022_en.pdf)

PARTICIPANTS PORTAL

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/horizon>

## # HorizonEU

<http://ec.europa.eu/horizon-europe>





# Horizon Europe

Call HORIZON-CL4-2021-DATA-01

Topic presentation HORIZON-CL4-2021-DATA-01-01

*Stefano BERTOLO, CNECT.G.1*

# Disclaimer

The only authentic and authoritative source of information is the Horizon Europe work programme and call documentation in the Funding & Tenders portal.

In case of discrepancies between this presentation and the information published in the Funding & Tenders portal, the latter will prevail.



# Basic characteristics of topic

HORIZON-CL4-2021-DATA-01-01: Technologies and solutions for compliance, privacy preservation, green and responsible data operations

<b>Specific conditions</b>	none
<b>Expected EU contribution per project</b>	8-11 MEUR (indicative)
<b>Indicative topic budget</b>	52 MEUR
<b>Type of Action</b>	Research and Innovation Actions (RIA)
<b>Technology Readiness Level</b>	Start at TRL 2-3, achieve TRL 4-5 by the end of the project – see General Annex B.

This topic implements the European Partnership on AI, data and robotics.

# HORIZON-CL4-2021-DATA-01-01: overall context

## **Destination 3 – World leading data and computing technologies**

Under heading “Data sharing in the common European data space”

Contributes to technologic readiness for the deployment of Common European Data Spaces in key sectors of economy and society

Addresses **compliance/societal/regulatory technologies for data spaces**

Provides basis for creating **trust for data sharing** (privacy preserving, responsible, compliant, environmentally sustainable)

Builds on and expands H2020 achievements (Data platforms ICT-13-2018-19)

# HORIZON-CL4-2021-DATA-01-01: Expected Outcome

Project results are expected to contribute to the following expected outcomes:

Improve the efficiency and the use of **trustworthy digital technologies** to address the requirements of citizens, companies and administrations/public organisations on **privacy and commercial and administrative confidentiality** as well as **responsible, fair and environmentally friendly** (e.g. in terms of energy/carbon/material footprint) **data operations in data spaces**, across the data life cycle.

# HORIZON-CL4-2021-DATA-01-01: Scope (1)

Digital technologies, methods, architectures and processes for user-friendly, safe, trustworthy, compliant, fair, transparent, accountable and environmentally sustainable collection, storage, processing, querying, analytics and delivery of data

facilitate sharing and manipulation of data in compliance with prevailing and emerging legislation

safe and secure data handling, sharing and re-use in the context of common European data spaces

## HORIZON-CL4-2021-DATA-01-01: Scope (2)

Combination of technological and social innovation, technologies and solutions that enable **environmentally sustainable data operations** (e.g. by optimising/minimising/de-centralising processing, transfer and storage of data and avoiding unnecessary data manipulations, using energy-harvesting sensors/devices etc.)

Technologies and solutions for ensuring **human, fair and ethically sound collection, processing and manipulation of data**, in line with the principles of **responsible/trustworthy AI**

# Links HORIZON-CL4-2021-DATA-01-01

Actions should liaise with/build on, as appropriate:

- relevant cyber-security actions under Cluster 3.
- Horizon 2020 actions on privacy-preserving technologies and data platforms from topic ICT-13-2018-19
- data-centric Horizon 2020 European Research Infrastructures
- Data Spaces Support Centre, to provide methods and solutions for the emerging common European data spaces (Digital Europe programme).
- relevant national, regional and trans-national initiatives such as Gaia-X and EOSC (interoperability, re-use of common reference models, processes and building blocks for a pan-European data infrastructure)

Page limits HORIZON-CL4-2021-DATA-01-01

45 pages

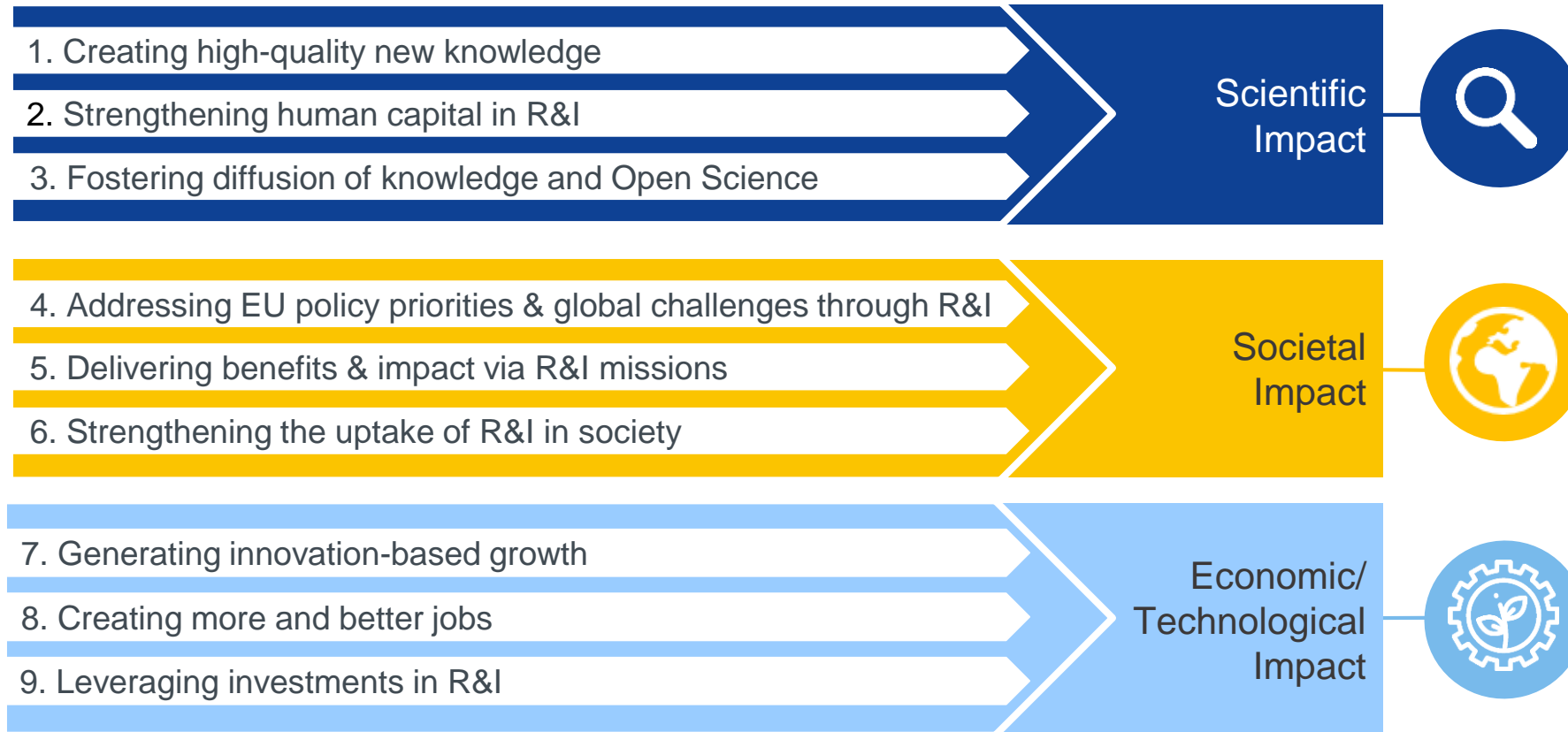
## Expected impact (common to all topics of Destination 3)

Proposals for topics under this Destination should set out a credible pathway to contributing to **world-leading data and computing technologies**, and more specifically to one or several of the following impacts:

- Improved European leadership in the global data economy
- Maximised social and economic benefits from the wider and more effective use of data
- Reinforced Europe's ability to manage urgent societal challenges (e.g. data for crisis management, digital for clean energy).



# HORIZON EUROPE **LEGISLATION** defines three types of impact, tracked with Key Impact Pathways



*Article 50 & Annex V 'Time-bound indicators to report on an annual basis on progress of the Programme towards the achievement of the objectives referred to in Article 3 and set in Annex V along impact pathways'*

## Useful links for guidance, presentations etc.

Two useful webinars on “How to prepare a successful proposal in Horizon Europe” (24/3 and 21/4/2021, recordings and slides available):

<https://ec.europa.eu/research/participants/docs/h2020-funding-guide/other/event210324.htm>

<https://ec.europa.eu/research/participants/docs/h2020-funding-guide/other/event210421.htm>

# Thank you



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# Horizon Europe

Call HORIZON-CL4-2021-DATA-01

Topic presentation HORIZON-CL4-2021-DATA-01-03:  
Technologies for data management.

*Riku LEPPÄNEN, CNECT.G.1*

# Basic characteristics of topic

HORIZON-CL4-2021-DATA-01-03: Technologies for data management

<b>Specific conditions</b>	none
<b>Expected EU contribution per project</b>	5 MEUR (indicative)
<b>Indicative topic budget</b>	30 MEUR
<b>Type of Action</b>	Innovation Actions (IA)
<b>Technology Readiness Level</b>	Start at TRL 5, achieve TRL 8 by the end of the project – see General Annex B.

This topic implements the European Partnership on AI, data and robotics.

# HORIZON-CL4-2021-DATA-01-03: overall context

Destination 3 – World leading data and computing technologies

Under heading “Data sharing in the common European data space”

Provides tools to ensure FAIR (findable, accessible, interoperable, reusable) principles in data operations

Supports data sharing and re-use in general (data economy enabler)

Supports common European data spaces in particular

# HORIZON-CL4-2021-DATA-01-03: Expected Outcome

Project results are expected to contribute to the following expected outcomes:

Provide new secure and energy-efficient **data management tools** improving the **usability** and **discoverability** of data in different contexts, covering data **provenance**, **synthetic data generation**, **data quality management** (such as data cleaning, validation, enrichment, co-creation, identification of bias and correlations), improving **data interoperability**, **metadata management** (automated ways of labelling and describing data, data linkage), and ensuring **data security, privacy and integrity**, especially in the context of data spaces.

# HORIZON-CL4-2021-DATA-01-03: Scope (1)

The actions under this topic are expected to provide:

**Practical, robust and scalable** tools to improve the **interoperability, quality, and integrity of data and metadata**, in the context of other topics of the heading “Data sharing in the common European data space”.

Support a **holistic approach of the data life cycle** and comply with **accountability, fairness and confidentiality** as well as the **FAIR principles** (Findable, Accessible, Interoperable, Reusable) for **data and metadata** management.



# HORIZON-CL4-2021-DATA-01-03: Scope (2)

Enable, support and/or automate

- creation and maintenance of **common ontologies, vocabularies and data models** and/or
- structured, standardised and automated **authoring, co-creation, curation, annotation and labelling** of data,

in view of different later uses (especially AI) made of the data.

# Links HORIZON-CL4-2021-DATA-01-03

Actions are further expected to:

- build on relevant past and current data management initiatives
- create links with relevant initiatives collecting/using heterogeneous/linguistic data, including AI initiatives (such as AI4EU, European Language Grid, or the projects from the H2020 topic ICT-48), where appropriate
- liaise with standardization bodies, where appropriate.
- Demonstrate the tools by diverse use cases

# Thank you



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# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

# Questions?

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

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11:15-11:30am

### Presentation Ideal-ist and Brokerage tool

Edina Nemeth - *Ideal-ist, the network of National Contact Points for Digital*

# Ideal-ist

Horizon Europe Information & Brokerage

AI, Data, Robotics Partnership

21 July 2021



**IDEAL-IST**

[www.ideal-ist.eu](http://www.ideal-ist.eu)

Your Worldwide ICT Support Network

Edina Nemeth  
NCP Hungary



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 831620

# Who we are?

# Who?



Ideal ist Promotional Video

<https://www.youtube.com/watch?v=zldtz1yLKrE>





# Who?

**Made up individuals with lots of experience to help you!**

Ideal-ist has been active since 1996!

**from 48+ countries!**

Albania Argentina Armenia Austria Azerbaijan Belarus Belgium -Brussels Belgium -Federal Belgium -Flanders Belgium -Wallonia Bolivia Bulgaria  
Canada Croatia Cyprus Czech Republic Denmark Dominican Republic Estonia Faroe Islands Finland France Georgia Greece Guatemala Hungary  
Iceland Ireland Israel Italy Latvia Lithuania Luxembourg Macedonia Malta Mexico Moldova Netherlands Norway Poland Portugal  
Romania Serbia Slovakia Slovenia Spain Sweden Switzerland Tunisia Turkey Uganda Ukraine United Kingdom

# Ideal-ist Services

# Fantastic services!



Partner match/search



Trainings, Seminars & Webinars



Brokerage events



Toolbox for  
proposers



Pre-proposal check  
&  
Full proposal review



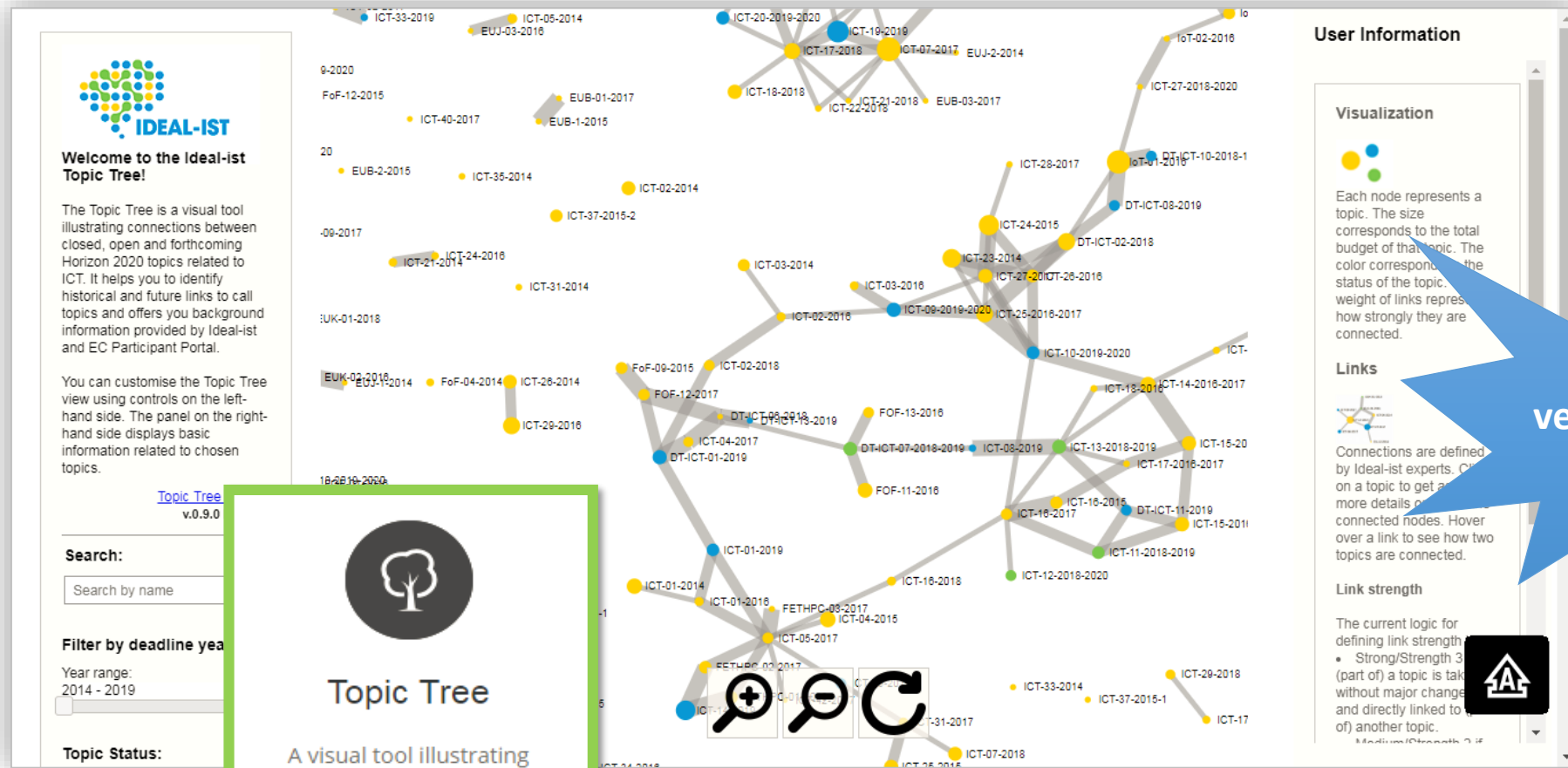
Personalised weekly  
notification




Topic Tree



# Ideal-ist Topic Tree



  
**Topic Tree**  
A visual tool illustrating connections between closed, open and forthcoming Horizon 2020 topics related to ICT

<http://www.ideal-ist.eu/topic-tree>

# BROKERAGE



# VIRTUAL AGORA



Register



Create a profile



Share cooperation offers

- Project ideas
- Expertise
- Requests



Find & contact partners



A service offered by:  
the network of ICT  
National Contact Points



LONG TERM  
NETWORKING

[digital2021.ideal-ist.eu](https://digital2021.ideal-ist.eu)

Horizon Europe Digital - Face2Face Brokerage  
June 24 - June 25, 2021

Home Participants Marketplace Agenda Login

24 June 2021 - 25 June 2021  
Horizon Europe Digital - Face2Face Brokerage

Event organized by:  
IDEAL-IST #HorizonEU

HORIZON EUROPE INFO DAYS 2021  
BROKERAGE CLUSTER 4 | DIGITAL

THE EU RESEARCH & INNOVATION PROGRAMME 2021 - 2027  
EUROPEAN UNION

Home How it works Information Day Past events Project Idea Consultation Contacts Last minute practical information  
Long term networking

Did you miss the online brokerage days? Don't worry!  
The brokerage system remains open to book scheduled & ad hoc meetings until the first call deadlines (21 Oct 2021)  
Register and find your partners any time!

Register now  
Open until 21 October 2021

ORGANISED BY  
IDEAL-IST  
enterprise europe network  
Business Support on Your Doorstep

MEETINGS  
Participants 1247  
Meetings 989

PARTICIPANTS

Ideal-ist, the network of National Contact Points for ICT research, in cooperation with the Enterprise Europe Network invites you to participate in a **brokerage event** with **pre-arranged online Face2Face meetings** complementing the first Horizon Europe event the Information Day on Cluster 4 - Digital, Industry & Space.  
This brokerage event is a unique networking opportunity for actors in the DIGITAL field!

... information from the European Commission  
... quality partnerships for participating in ICT across Horizon Europe  
... the setup of project consortia for Horizon Europe calls  
... to develop new project ideas on ICT at international level

# Ideal-ist Full Proposal Check

Coming  
again soon ...



Find us



# Find us @

<https://www.ideal-ist.eu>

[https://twitter.com/ICT\\_IDEALIST](https://twitter.com/ICT_IDEALIST)

<https://www.linkedin.com/in/idealisticproject>

We're also on [Youtube!](#)

The best place to benefit from H2020's  
know-how,  
know-what, know-who  
and knowledge!



**Edina Nemeth**  
NCP Hungary  
edina.nemeth@ist.hu



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 831620

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

11:30am - 01:00pm  
**Pitches**

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## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

*Odd.Bot Successor of Chemical &  
Manual weeding*

**Farming Flow**

*Martijn Lukaart*



T: +31 616 080709

E: [martijn@odd.bot](mailto:martijn@odd.bot)



## PROJECT IDEA

**Topic:** HORIZON-CL4-DATA-2021-01-03 - Technologies for data management

**Type of project:** Innovation actions (**IA**), and Coordination and support actions (**CSA**)

**Project objectives:**

*Data management in a collaborative way; organize data cooperatives in such a way that;*

- 1 . Farmers will keep the ownership of their data*
- 2. Third parties can have access to data e.g. to train detection algorithms*
- 3. The outcome to be a shared ownership model.*



## WANTED

### Competences & Skills wanted

Technical design: architecture and infrastructure support

Coordination & Writing: project management & collaboration in the consortium

### Types of partners sought

Ideally we can partner with industry leaders to align to their standard

We are open to partner with SMEs, RTD center & Universities

We can offer our own User-group of organic farmers

### Work to be performed

We like to develop a working prototyping and get your help on programming, System Integration. (We can offer dissemination channels and Engineering support)

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

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### EXPERTISE OFFER

Our expertise is that of';

The end-users / customers are organic farmers in the heart of The Netherlands, growing high-value high-density crops.

The weeding robot that can detect and distinguish weeds from crops and remove the weed mechanically.

We like to work with you to assess the option for a collaboration

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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## Bonseyes (BCA)

Building The Intelligent Edge

*JM. Bonnefous/T. Llewellynn*



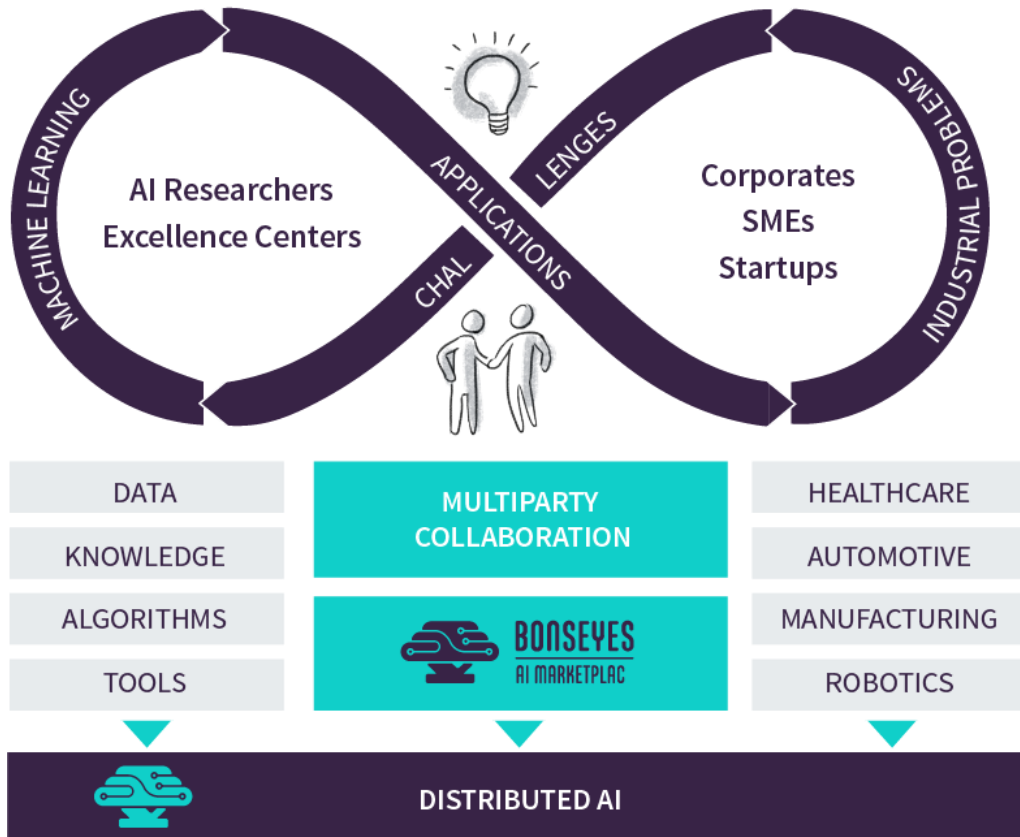
T: +44 7786547232

E: [jean-marc@bonseyes.com](mailto:jean-marc@bonseyes.com)





### Bonseyes: AI-as-a-Service for the Deep Edge



### A Marketplace With A Service Layer for the Deep Edge

Originating from EU H2020 project (2018-2020), Bonseyes is a secure, distributed marketplace that offers a range of **vendor-agnostic, modular AlaaS (BonsAAPs)**:

- ✓ **Experimentation**
- ✓ **Model compression and optimization**
- ✓ **Benchmarking**
- ✓ **Deployment on hardware**
- ✓ **Security & licensing**

Bonseyes AI Marketplace increases AI usage by enterprises and SMEs which lacks internal innovation capabilities by providing tools to build **end-to-end, containerized, ready-to-integrate and re-usable solutions**

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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### PROJECT IDEA

#### Topics:

HORIZON-CL4-2021-DIGITAL-EMERGING-01-10 AI, data and Robotics at work

HORIZON-CL4-2021-DIGITAL-EMERGING-01-09 AI, Data and Robotics for the Green Deal (AI, Data and Robotics Partnership) (IA)

HORIZON-CL4-2021-DIGITAL-EMERGING-01-01 Ultra-low-power, secure processors for edge computing (RIA)

#### Projects common objectives:

*Capitalize on Bonseyes Marketplace and two existing ICT-49 projects to further the delivery of AlaaS Solutions at the Edge in a secure, distributed and energy-efficient way*

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## WANTED

### Competences & Skills wanted

All: Technical, Design, Users, Coordination, Writing, etc..

Special focus on edge AI activities and Industry-focused product design.

### Types of partners sought

All: Industry, SME, RTD center, University, User-groups, etc..

### Work to be performed

All: Prototyping, Programming, System Integration, Dissemination, Engineering, etc..



21 July 2021, 9:30am to 1pm CEST

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## EXPERTISE OFFER

- Proven expertise in coordinating and partnering in H2020 projects
- Extensive network of contacts in EU research and industry ecosystem
- Successfully delivered H2020 [Bonseyes](#) Marketplace
- Presently partner in two ICT-49 projects: [BonsAPPs](#) (AI as a Service) and [StairwAI](#) (Facilitating user engagement in the AI4EU platform)
- Specialisation in EdgeAI projects and deployment of AI on low power embedded systems
- Operating the Bonseyes AI marketplace infrastructure with commercial reach and ambition
- [Looking to build on existing and prior efforts towards the EU AI-on-Demand platform](#)

# Expertise Offer

presented by:

Carmen Mac Williams

Director of Grassroots Arts and Research  
SME from Cologne, Germany

Please contact:

Email: [carmen@grassroots-arts.eu](mailto:carmen@grassroots-arts.eu)



Organisation	Grassroots Arts and Research (Cologne, Germany)
Main facts about the organisation	<ul style="list-style-type: none"> <li>- Strategic consulting and media research company</li> <li>- led by the Directors Carmen Mac Williams and Tilman Veltjens.</li> <li>- Research and consulting experience is grown for 20 years in academic and industry driven R&amp;D projects</li> <li>- Pool of creative talents</li> </ul>
Main persons involved	Carmen Mac Williams
Strategic interest in	<ul style="list-style-type: none"> <li>- Building an European AI community and an open innovation ecosystem across borders by curating virtual Café sessions and real world meetups to match users with technology and innovative minds with talents</li> <li>- Spreading AI expertise to European start ups, SMEs, students and talents.</li> <li>- AI use cases co-development and evaluation.</li> </ul>
Strength	Creative concepts, strategic consulting, project management, user centric design and community building.
Research areas	Community building and user centric design methodology
Related activities	<ul style="list-style-type: none"> <li>- Organisator and Moderator of AI4EU Café for European AI-on-Demand Platform</li> <li>- Project Manager of EIC Pathfinder Project CAROUSEL for AI and Social Interaction and Partner in AI4Media (ICT 48) and Helios (NGI- Social Media )Projects</li> </ul>

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### IICT - BAS

*Embodiment of a spike timing model of  
visual perception and decision making*

Petia Koprinkova-Hristova

T: +35929796622

E: [pkoprinkova@yahoo.com](mailto:pkoprinkova@yahoo.com)



# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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### PROJECT IDEA

Topic: [Technologies for data management \(AI, Data and Robotics Partnership\) \(IA\)](#)

HORIZON-CL4-2021-DATA-01-03

Type of project: HORIZON Innovation Actions

Project objectives:

*To create robots with embedded “brains” able to take autonomous decisions and actions*



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AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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## WANTED

### Competences & Skills wanted

Technical, Design, Coordination, Writing

### Types of partners sought

Industry, RTD center, University

### Work to be performed

Prototyping, Programming



## EXPERTISE OFFER

IICT-BAS carries out fundamental and applied research in the area of computer sciences, information and communication technologies (ICT). The institute supports a grid infrastructure that includes 8 institutes from BAS and 5 universities. There is also a heavy-duty cluster with more than 500 logical kernels and more than 120 TB disk space and supercomputer Avitohol.

**Our group has already developed a brain-inspired spike timing neural network model of visual information perception and decision making in NEST simulator. The model is in process of implementation on the supercomputer Avitohol. We aim to extend and “embed” it using Neurobotic platform of HBP. This will allow creation of intelligent robots able to perform autonomous decisions and actions.**

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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### MET Communications Trusted Applied AI Norbert Jastroch



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## PROJECT IDEA (1)

**Topic:** HORIZON-CL4-2021-HUMAN-01-01 – Verifiable robustness, energy efficiency and transparency for Trustworthy AI

**Type of project:** RIA work package

**Project objectives:**

Investigate means to balance data quality and privacy in applied AI



## PROJECT IDEA (2)

**Topic:** HORIZON-CL4-2021-HUMAN-01-02 – European coordination, awareness, standardization & adoption of trustworthy European AI, Data and Robotics

**Type of project:** CSA work package

**Project objectives:**

Develop and evaluate a Risk Management Framework for high-risk AI systems

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## WANTED

### Competences & Skills wanted

Coordination, Technical, Scientific base, Use cases

### Types of partners sought

University, RTD center, Industry, SME

### Work to be performed

System design & architecture, Prototyping, Engineering, Dissemination



## EXPERTISE OFFER

- Data quality and privacy

Jastroch, N.: **Trusted Artificial Intelligence: On the Use of Private Data.**

Proceedings of PLM2020, Rapperswil/Switzerland, July 2020. Springer Nature IFIP AICT 594, Cham

- Risk management framework

Jastroch, N.: **Applied Artificial Intelligence: Risk Mitigation Matters.**

Proceedings of PLM2021, Curitiba/Brasil, 14 July 2021

- European AI Alliance platform since 2018 (ethics, data privacy, trusted AI)
- BDVA/DAIRO associate member (trustworthy AI, regulation, standardization)

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

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**UNIMORE**  
UNIVERSITÀ DEGLI STUDI DI  
MODENA E REGGIO EMILIA

## University of Modena and Reggio Emilia *AI & BIG DATA*

*Laura Po – Francesco Guaraldi*

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E: [laura.po@unimore.it](mailto:laura.po@unimore.it)

T: +39 3401507907

E: [francesco.guaraldi@unimore.it](mailto:francesco.guaraldi@unimore.it)



# DBGROUP

<http://dbgroup.unimore.it>

Experts in the use of Artificial Intelligence in Data Mining and Big Data

## Data integration



## Intelligent Chatbot



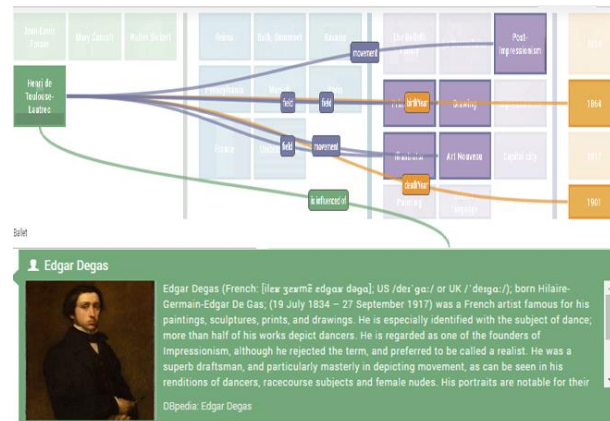
## Smart Cities



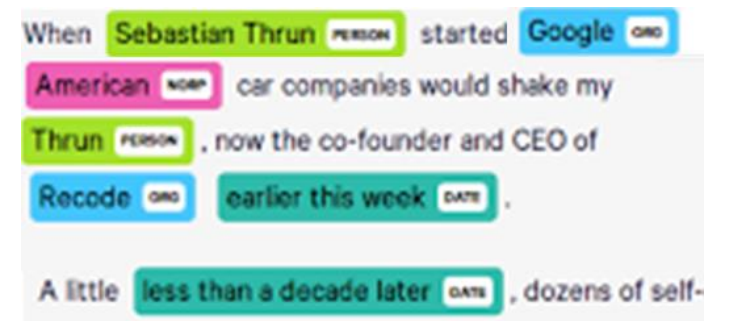
## Big Data



## Linked & Open Data



## NLP & AI



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E: laura.po@unimore.it



# DBGROUP

Digital Twin to Smart Cities and Personalize Medicine

Management of IoT Sensors

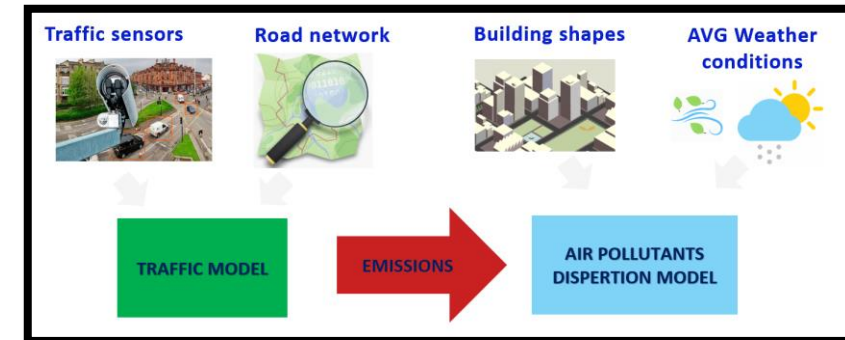
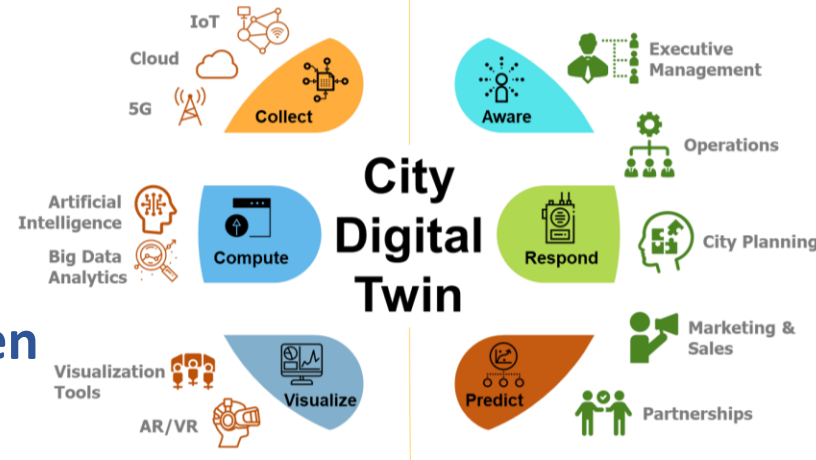
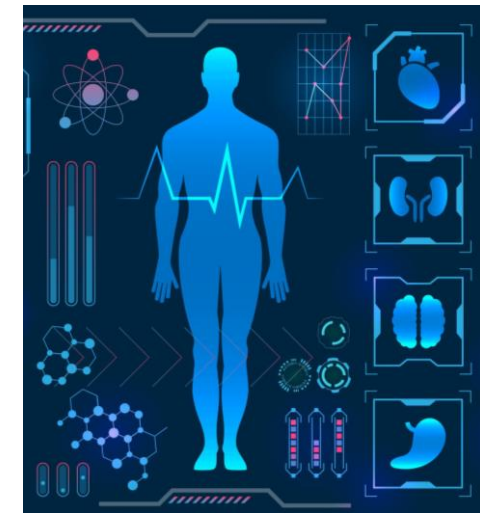
Simulations – Prediction – Complex Models

Sustainable Mobility & Citizen Involvement

Environmental impact and wellbeing

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# AIMAGELAB

- **A research Lab** of the Dipartimento di Ingegneria “Enzo Ferrari”, about 35 people (professors, researchers and PhD Students) and tens Master Students per year.
- **An applied research lab**, part of AIRI (Director R. Vezzani) the inter-dip center of AI research and Innovation, of the High Technology Network of Emilia Romagna
- **A node of the CINI Lab AIIS**
- **A UNIT of ELLIS** ( European Labs of Learning and Intelligent Systems) ELLIS@Modena with UNIFI and CINECA
- An **AI Academy** with more than 60 Industries
- A co-working lab with NVIDIA with **NVIDIA AI Technology Center**
- The main Research/ teaching resource of the **AI Engineering Curriculum** of Master Degree in Computer Eng.



T: +39 3401507907

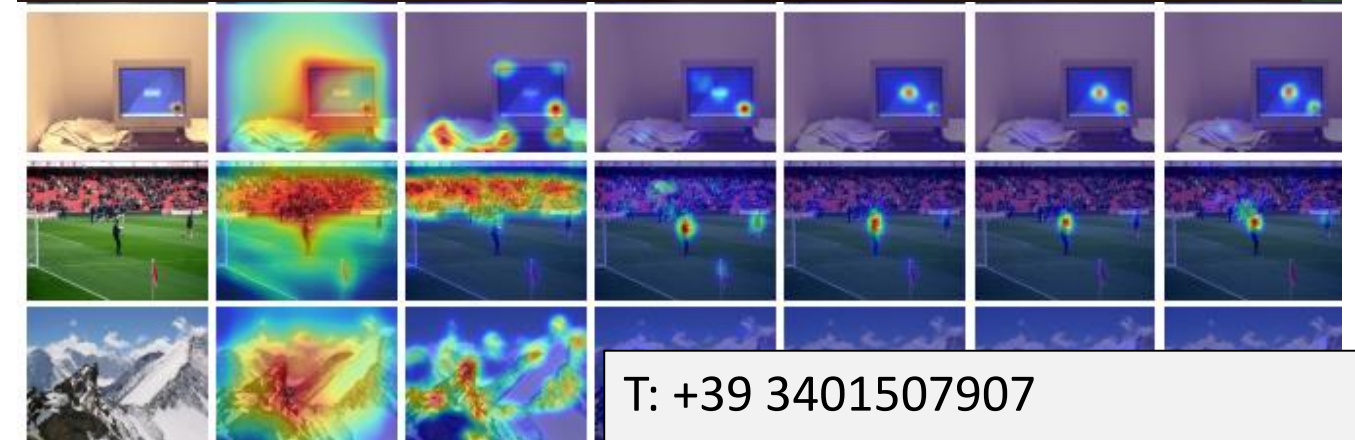
E: [francesco.guaraldi@unimore.it](mailto:francesco.guaraldi@unimore.it)



# AI- Foundational Research at AlmageLab



- **Computer Vision**
- Video segmentation
- Human Pose Estimation and behavior analysis
- Machine Learning/Deep Learning
- Medical Imaging
- Bioinformatics
- People Tracking
- Natural Language Processing, Text Generation
- Face Recognition
- Multimedia Processing
- Robotics, Human Robot Natural Interaction
- Continual Learning
- Sustainable and Explainable AI
- Generative Neural Networks
- Anomaly detection and Time-series analysis
- 3D Computer Vision
- Saliency and Attentive Networks
- High Performance Computing and Edge AI



T: +39 3401507907

E: [francesco.guaraldi@unimore.it](mailto:francesco.guaraldi@unimore.it)

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

University of Naples  
L'Orientale/UNIOR

*Gender Biases in AI*

Johanna Monti

T: +39 349 5252389

E: [jmonti@unior.it](mailto:jmonti@unior.it)



Università degli studi di Napoli  
"L'Orientale"



## PROJECT IDEA

**Topic:** HORIZON-CL4-2021-HUMAN-01-24: Tackling gender, race and other biases in AI

**Type of project:** RIA

**Project objectives:**

1. Increased availability and deployment of unbiased and bias-preventing AI solutions across a wide range of industrial and digital sectors
2. AI-based solutions for enhancing digital equality and social inclusion for women and girls, and other groups at risk of discrimination, such as ethnic minorities and the LGBTIQ community



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## WANTED

### Competences & Skills wanted:

- R&D skills in unbiased AI systems (other than Machine Translation)
- Coordination

### Types of partners sought

- RTD center, & Universities (not from Italy or The Netherlands)
- Industries active in AI - recommender and personalisation systems (case study)
- User-groups

**Work to be performed:** Prototyping, System Integration, Dissemination



## EXPERTISE OFFER

**UNIOR**: expertise in development of data for Machine Translation (MT) & NLP, evaluation of MT, gender bias in MT and ethical aspects in MT

**FBK-MT**: Gender bias in Speech and Machine Translation

**University of Tilburg**: gender bias in Neural MT

Proposed activities: Develop technologies and algorithms to evaluate and address bias in AI-based system



# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

# Universitat Politècnica de València (UPV) *IUMPA and VRAIN Expertise*



UNIVERSITAT  
POLITÈCNICA  
DE VALÈNCIA

IUMPA: Minerva Baguena

T: +34 639962285

E: [mbaguena@upvnet.upv.es](mailto:mbaguena@upvnet.upv.es)

VRAIN: Ana Ciudad

T: +34 696878555

E: [acidad@vrain.upv.es](mailto:acidad@vrain.upv.es)



IUMPA  
Institut Universitari de Matemàtica  
Pura i Aplicada



Valencian Research Institute  
for Artificial Intelligence

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### EXPERTISE OFFER

**DYNOP Group** at IUMPA Institute in UPV has expertise in:

- User-friendly technologies for public administrations.
- Advanced data analytics and mathematical optimization.



**MADPhy Group** at IUMPA Institute in UPV has expertise in:

- Open data quality analysis, open research data and the application of FAIR principles to datasets.
- Developing projects on re-use of public administration data in the context of the SDGs (Sustainable Development Goals).
- Also interested in agricultural data, within a global project.

**HORIZON-CL4-2021-DATA-01 (-01 and -03)**

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### EXPERTISE OFFER

Focus on  
Responsible AI

- **AI techniques for Smart Manufacturing Systems and Industry 4.0**
- **Digital Twins & Federated Digital Twins**
- **AI techniques for Sustainable Manufacturing Systems**
- Activity **recognition**
- Natural **Language** Processing
- Automated **Planning**
- **Recommender** systems
- **Secure-by-design** Software



# VRain

Valencian Research Institute  
for Artificial Intelligence

[www.vrain.upv.es](http://www.vrain.upv.es)

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### EXPERTISE OFFER

Focus on  
Responsible AI

- Model-driven development (MDD) and automatic **code generation**
- **Organizational** Modeling and **Requirements** Engineering
- **Autonomous** Systems, **Self-Adaptation** and **Human-in-the-Loop**
- **Internet of Things** and **Ambient Intelligence** Systems
- Genome Data Science and **Genomic Information Systems**
- Software **Testing** and Quality
- **Validation** and Debugging of Concurrent & **Distributed Applications**
- Demonstration, validation and empirical studies



Valencian Research Institute  
for Artificial Intelligence

[www.vrain.upv.es](http://www.vrain.upv.es)

**HORIZON-CL4-2021-DATA-01-01 / -03; HORIZON-CL4-2021-DIGITAL-EMERGING-01-09/-10/-11/-13  
HORIZON-CL4-2021-HUMAN-01-X (Destination 6)**

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### ESIGELEC / IRSEEM

# Perception for mobile robots and AV

Romain Rossi



T: +33 2 32 91 54 21

E: [romain.rossi@esigelec.fr](mailto:romain.rossi@esigelec.fr)



## EXPERTISE OFFER

### Workforce

Research team (6 researchers)

Engineering team (5 engineers)

### Previous projects

Autonomous inspection robots for Oil&Gas,  
Defense and Agriculture

Precise Localization for Autonomous Vehicles :  
Passenger car, shuttles

Smart Electrical Wheelchair for disabled people assistance

Vision and LIDAR-based measurements





21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## EXPERTISE OFFER

### Research topics

### Perception for autonomous systems

Camera-based

Lidar Based (Multi-layer, Flash-LIDAR)

Non-conventional Vision systems (Catadioptric, Fish-Eye)

### Area of expertise

### Embedded systems prototyping

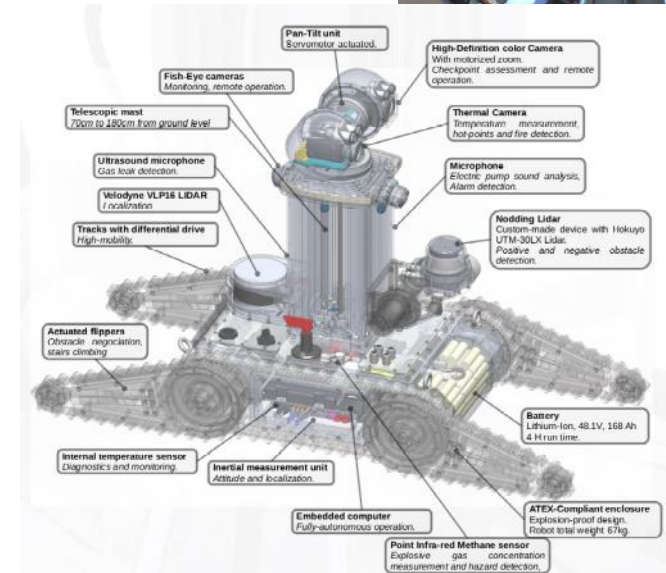
Hardware (Design, Prototyping, EMC Testing)

Software (Low-Level, Linux, Windows, RT-Maps, ROS)

### Strong focus on high TRL

From Research projects to working prototypes

Industrialization constraints





## EQUIPMENTS

### Autonomous Navigation Lab

Motion capture system

Vicon, 24 Cams, 200Hz, mm acc.

High Def 3D Scanner for static scenes

Leica C10

Reference localization system

RTK GNSS+IMU, 2cm accuracy

### Engineering

CNC Mill, 3D Printers, Laser cutter ...

PCB Design and prototypes manufacturing

Workshop (cars, light-trucks, heavy robots)



Eclairage contrôlé  
(tests en luminosité  
dégradée)



Système de capture 3D  
du mouvement VICON



Zone « pluie » ;  
test en conditions  
d'environnement  
dégradé

Zone d'expérimentation



Flotte de robots indoor







OW2

# Open Source Software for Information Systems

Cedric Thomas



T: +33 611 430 431

E: [cedric.thomas@ow2.org](mailto:cedric.thomas@ow2.org)



## Non-Profit Open Source Organization European and Global



### Community



### Governance





2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022



## Solid Experience from 14 Collaborative Projects

Cloud Computing  
Edge Computing  
IoT

Software Engineering  
Quality  
Security

“A driving force right from the launch of the OCEAN project, OW2 really is the **reference open source, community in Europe for collaborative projects.**”

Yuri Glikman, OCEAN Project Coordinator

“Right from the very first month OW2 provided us with **all the tools a large distributed development team of 50 people required to function.**”

Wei Monin, OpenCloudware Project Coordinator



## Dissemination and Exploitation Partner for Open Source Projects



### Collaboration

- Workspace, Wiki
- Hosting, CI/CD
- Collaborative editing
- Chat, Mailing Lists

### Communication

- Website development
- Social media
- Webinars, workshops
- Industry events

### Exploitation

- MVP, Beta-testing
- Community building
- Market analysis
- Business plan

### Open Source

- Best practices
- Licensing support
- Monetization plans
- Project governance

[WWW.OW2.ORG](http://WWW.OW2.ORG)

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

Uni. of Sheffield/*Sheffield Robotics*  
Tony Prescott (Prof)



E: [t.j.prescott@sheffield.ac.uk](mailto:t.j.prescott@sheffield.ac.uk)

Twitter: @tonyjprescott



The  
University  
Of  
Sheffield.

## EXPERTISE OFFER

## SHEFFIELD ROBOTICS (USFD)

<https://www.sheffield.ac.uk/sheffieldrobotics>

Multidisciplinary robotics centres with over 200 active researchers, and well-equipped laboratories for indoor and outdoor robots. QS Rank 83.

*Application Areas:*

Advanced Manufacturing—connections with leading companies through the AMRC Catapult  
Medical, Healthcare and Social Care—working with Sheffield Teaching Hospitals and the UK  
Emergence network

*Expertise:*

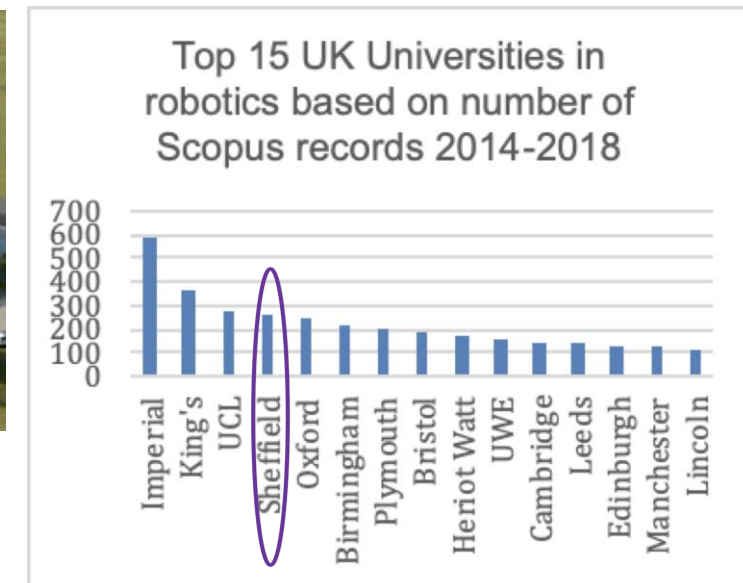
Human-robot interaction  
Autonomy, safety and verification  
Evaluation and impacts (with psychologists and social scientists)  
Biomimetics (incl. brain-based design)  
Sensing and actuation  
Skills and education

.....open to discussing a wide range of project ideas

Contact: t.j.prescott or j.law@sheffield.ac.uk



AMRC Factory of the Future  
Partner with Boeing, Rolls  
Royce, Airbus, BAE Systems  
<https://www.amrc.co.uk/>



## EXPERTISE OFFER

## Spin-out: CONSEQUENTIAL ROBOTICS (CQR)

<http://consequentialrobotics.com/>

**SME** founded in 2015, developers of the award-winning MiRo-e animal-like robot (>400 sold) and used around the world in research and education, esp. human-robot interaction studies.

*Application Areas:*

Assistive, companion and therapeutic robots—particularly in child health settings (good connections with hospitals)

Education—use of cloud-based robot simulator for learning about robotics

Biomimetics—pioneers in the commercial use of brain-based robots

*Expertise:*

Industrial design and robot manufacturing

Social and scene awareness through layered architectures

Evaluation studies

**.....open to discussing a wide range of project ideas that could utilize our platform or skills**

Contact: [tprescott@consequentialrobotics.com](mailto:tprescott@consequentialrobotics.com)



Robust expressive robot with stereo vision and hearing, wifi, bluetooth, Raspberry-pi, android/ios app, dev kit  
<http://miro-e.com>

**Consequential**  
ROBOTICS

## EXPERTISE OFFER

## Spin-out: CYBERSELVES Ltd (CYB)

<https://www.cyberselves.com/>

SME founded in 2020, developers of ANIMUS robot-agnostic middleware, and beyond state-of-the-art multimodal teleoperation system TELEPORT. Ana Avatar XPrize semi-finalist. UK/Malta based.

### *Application Areas:*

Hazardous environments—particularly using tele-operation or variable autonomy  
Social robotics—particular applications using telepresence

### *Expertise:*

Enabling the re-use of control software across multiple robot platforms  
Cloud robotics  
Robust low latency, high bandwidth telepresence and teleoperation

**.....open to a wide range of project ideas particularly around tele-operation**

Contact: Tony or Daniel @cyberselves.com (Daniel Camilleri, CEO)





# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### SZTAKI

## CoE for indoor agriculture

### Dr. Imre Paniti



T: +36 1 279 6207

E: [imre.paniti@sztaki.hu](mailto:imre.paniti@sztaki.hu)

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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## PROJECT IDEA

Topic: *HORIZON-CL4-DIGITAL-EMERGING-2021-01-12*

Type of project: *RIA*

### Project objectives:

Ensure autonomy for Europe in AI, data and robotics in developing world-class technologies serving the needs of European industries in indoor agriculture.

Provide top-performing solutions that industries will trust and adopt to maintain their competitiveness and maximise their contribution to environmental and resources sustainability.

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## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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## WANTED

Competences & Skills wanted

Coordination

Types of partners sought

Industry, SME, User-groups

Work to be performed

System Integration

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AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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### EXPERTISE OFFER

**Centre of Excellence in Production Informatics and Control (EPIC CoE)**

<https://www.centre-epic.eu/>

Infrastructre: [http://files.elearning.sztaki.hu/Escape3D/SZE\\_Ipar40Labor/index\\_2D\\_en.html](http://files.elearning.sztaki.hu/Escape3D/SZE_Ipar40Labor/index_2D_en.html)

Proposed activities: Follow-up project of <https://greendropsfarm.com/en/hydrocobotics/>

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AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## BUCHAREST ROBOTS

*Ana-Maria Stancu*

T: +40721 678 764

E: [ana-maria@bucharestrobots.com](mailto:ana-maria@bucharestrobots.com)



**BUCHAREST**  
**PROMOROBOTS**



## EXPERTISE OFFER

### HARDWARE RELATED SKILLS

- **Humanoid robots**
- **Service robots**
- **Prototyping**
- **Sensors and IoT**

### SOFTWARE RELATED SKILLS

- **Awareness about #robotics and #AI**
- **Precision agriculture**
- **Trainings on automation and robotics**
- **Robotics and programmatic classes**

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AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## UPMEM/Processing In Memory

*Next generation computing*

Gilles HAMOU

T: +33 611336600

E: [contact@upmem.com](mailto:contact@upmem.com)

The logo for UPMEM, consisting of the letters 'up' stacked above 'mem' in a bold, lowercase, sans-serif font. The logo is set against a solid yellow rectangular background.

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### PROJECT IDEA

**Topic:** HORIZON-CL4-2021-DATA-01-01: Technologies and solutions for compliance, privacy preservation, green and responsible data operations (AI, Data and Robotics Partnership)

**Type of project:** *RIA*

**Project objectives:**

*Build the most efficient fastest compute platform for safe, trustworthy, compliant, fair, fast and environmentally sustainable data processing, with real data-centric approach.*

*Build large scale compute system with one order of magnitude improvement on compute speed, energy efficiency, cost and hardware footprint.*





# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### WANTED

#### Competences & Skills wanted

Design (SOC, memory controller and bridge), Technical (compute systems), Coordination, Infrastructure as a Service

#### Types of partners sought

Industry (HPC, processor, systems, cloud services), SME (Semiconductor design, systems), University (Compute architecture, software & programming tools), User-groups (large analytics and database players)

#### Work to be performed

Prototyping, Programming, System Integration, Dissemination, Engineering



# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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### EXPERTISE OFFER

Processing In Memory (PIM on DRAM) global leader

Semiconductor design & fabless production,  
architecture, compute architecture

Software programming tools, system software  
(servers, Linux, LLVM)

Jedec (microelectronics SSO) active member for PIM

Data analytics and IA applications (genomics,  
database, analytics, IA...)



# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### CEA

## DeepGreen4AIS:

*End to End Frugal and Trustworthy design  
of AI Systems*

François TERRIER

T: +33 (0)6 08 35 99 97

E: francois.terrier@cea.fr





## PROJECT IDEA

**Topic:** HORIZON-CL4-2021-HUMAN-01-01 - Verifiable robustness, energy efficiency and transparency for Trustworthy AI: Scientific excellence boosting industrial competitiveness (AI, Data and Robotics Partnership)

**Sub-Topic :** 3. Greener AI

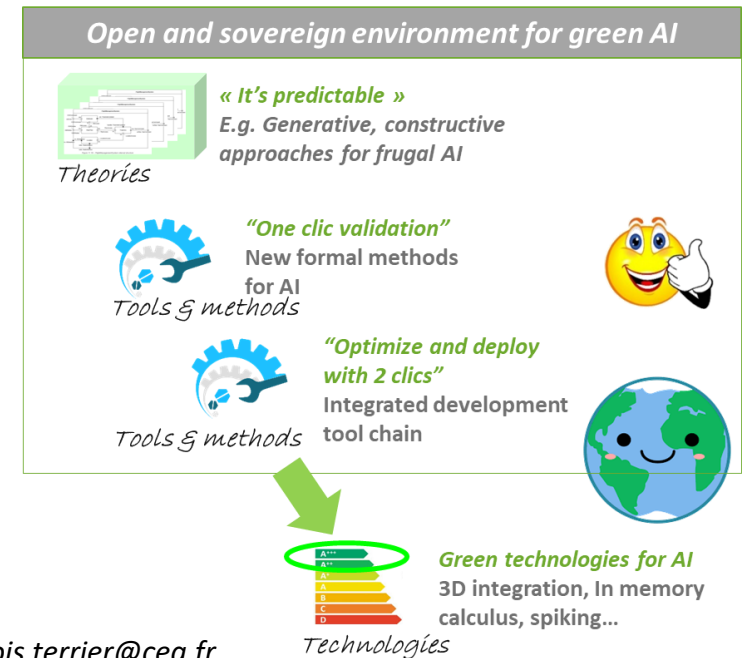
**Type of project:** RIA – TRL 5

**Project objectives:**

Methods, theories, algorithms, tools to design, analyse, optimize and validate AI based systems

*Targeted outcome: open platform for end to end development of frugal and trustworthy AI*

*Project use cases: industrial deployment of AI (Manufacturing, robotics, mobility, energy, health...)*





21 July 2021, 9:30am to 1pm CEST



In collaboration with the European Commission and Ideal-ist

## WANTED

Competences & Skills wanted: ***AI trust & frugality, safety and security, industrial application***  
(open to discussion for all motivated skills on research, implementation and dissemination)

Types of partners sought: ***Partners with expertise on the AI, Data & Robotics, balanced consortium among Research, Industry and Usergroups***

Work to be performed:

- ***Advanced Tool/Algorithm Prototyping & Integration***
- ***Open source dissemination, industrial evaluation***

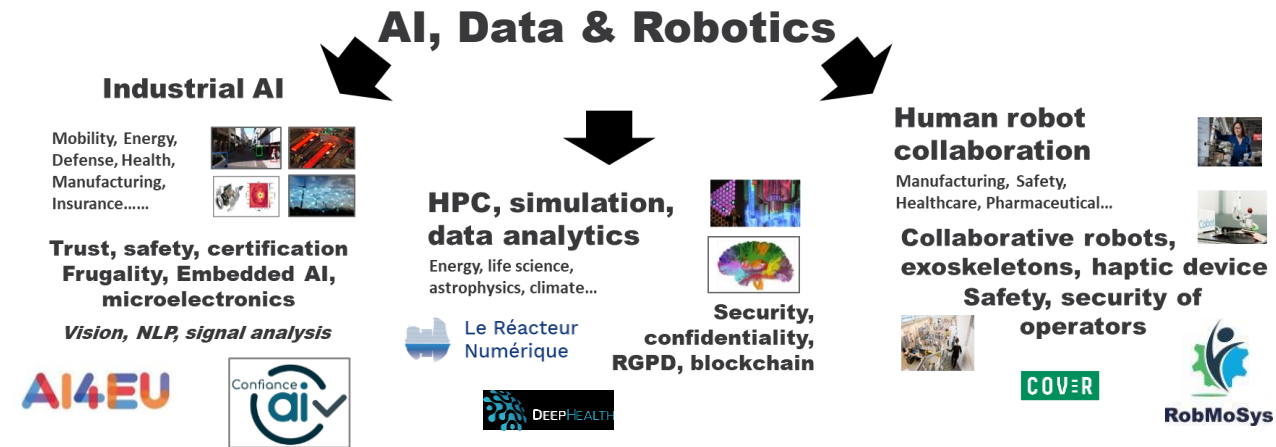


In collaboration with the European Commission and Ideal-ist

### EXPERTISE OFFER

*Existing skills and tools in the consortium*

- Highly experienced and recognized European consortium member
- Research & solution implementation on **AI, Data and Robotics**
- Research platform management  
Computation infrastructure for simulation and AI
- Tool platform development for system engineering  
(e.g.: key contributor to several strategic platforms **AI4EU, Confiance.ai, RobMoSys, COVR**)
- **Proposed activities: setting up and management of an Open Source and interoperable environment**  
integrating results from existing projects and platforms on formal methods, deep learning optimization and embedded deployment, robotics control engineering, trustworthy AI...



# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### PocketConfidant AI

*AI for human competence development*

Olivier Malafronte



T: +33660057940

E: [oli@pocketconfidant.com](mailto:oli@pocketconfidant.com)



21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## PROJECT IDEA

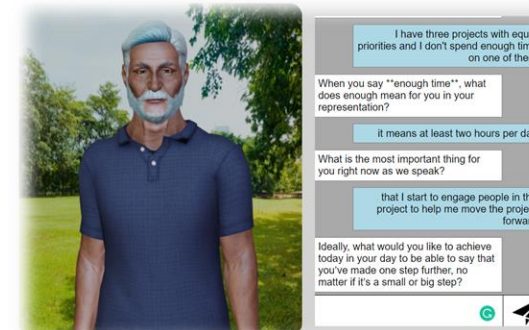
**Topic: HORIZON-CL4-HUMAN-2021-01-013: eXtended Reality Modelling**

**Sub-Topic HORIZON-CL4-HUMAN-2021-01-01:** Verifiable robustness, energy efficiency and transparency for Trustworthy AI: Scientific excellence boosting industrial competitiveness (AI, Data and Robotics Partnership)

Type of project: *RIA TRL2 > 5/6*

Project objectives:

- Pre-trained large-scale models
- Tools, methods and processes.
- Adaptation and generalization
- Integration in various use-cases



## Partners



 **MINISTÈRE DE L'ENSEIGNEMENT SUPÉRIEUR, DE LA RECHERCHE ET DE L'INNOVATION**  
*Liberté  
Égalité  
Fraternité*





# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

### WANTED

#### Competences & Skills wanted

Data engineering, Machine Learning, Deep Learning, UX for training, Project Management, Psychology applied to Learning/Training.

#### Types of partners sought

Industry/Corporates, SME, University, **User-groups**, RTD center

#### Work to be performed

Integrations: via APIs

Engineering: coaching/training/learning programs, linguistics engineering

API dissemination

[oli@pocketconfidant.com](mailto:oli@pocketconfidant.com)

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



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21 July 2021, 9:30am to 1pm CEST

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### EXPERTISE OFFER

**Skills & competences:** modelling coaching techniques for algorithms, infrastructure design, chatbot infrastructure, API development, AI Ethics, GDPR framework and operations, UX for end-users, international team and R&D management.

**Expertise:** Coaching/Psychology/Learning, NLP/ML, Architecture design, R&D Operations Management

Infrastructure: Azure

**Proposed activities:** merging technologies with partners to address human development issues + conversational AI for question generation + AI optimization

[oli@pocketconfidant.com](mailto:oli@pocketconfidant.com)



- **HORIZON-CL4-2021-DATA-01-01:** Technologies and solutions for compliance, privacy preservation, green and responsible data operations
- **HORIZON-CL4-2021-HUMAN-01-24:** Tackling gender, race and other biases in AI
- **HORIZON-CL4-2021-HUMAN-01-27:** AI to fight disinformation

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Noémi Thomazo  
R&D funding projects manager  
[noemi.thomazo@ariadnext.com](mailto:noemi.thomazo@ariadnext.com)



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# ARIADNEXT

## Our activities

- French SME, among the European leaders in [remote identity verification](#) (identity document analysis, face match, liveness)
- Major actor in the implementation of [digital identity](#)
- Compliance with [regulations](#) (GDPR, eIDAS)
- Interested in the following topics: fight against identity fraud, self-sovereign identity, secured and trusted authentication, deepfakes detection, tackling biases in AI



---

# ARIADNEXT

## Our expertise for European projects

- **Technical skills:** artificial intelligence, deep-learning, document/image/video analysis, optical character recognition, biometry, cryptography
- **Experience in collaborative projects:** coordination of ANR and FUI projects, coordinator of the H2020 project SOTERIA (development of a secured personal data management platform for citizens)
- Market-driven research, oriented towards **exploitation**

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## SUCCUBUS INTERACTIVE/Succubus

*Our Competences & leading ideas*

Angelo Marco LUCCINI



T: +33 6 73 34 10 05

E: [marco.luccini@succubus.fr](mailto:marco.luccini@succubus.fr)

W: <https://www.succubus.fr/#/>



## PROJECTS IDEAS

### Topics:

- 1) HORIZON-CL4-2021-HUMAN-01-02: European coordination, awareness, standardisation & adoption of trustworthy European AI, Data and Robotics (AI, Data and Robotics Partnership) (CSA) – outcome 1
- 2) HORIZON-CL4-2021-HUMAN-01-03: European Network of AI Excellence Centres: Pillars of the European AI lighthouse (RIA)
- 3) HORIZON-CL4-2021-HUMAN-01-24: Tackling gender, race and other biases in AI (RIA)
- 4) HORIZON-CL4-2021-HUMAN-01-27: AI to fight disinformation (RIA)

### Project objectives:

- 1)- Federating the European AI, Data and Robotics community in an engaging gamified platform fostering collective intelligence elicitation to support its sustainability over time
- 2)- gamified & engaging platform to support the NoE internally and externally + g. framework for 3<sup>rd</sup> parties projects
- 3) & 4)- Scenario-based & gamified playground to support (3) trainings and awareness raising for tackling gender, race and other biases in AI (4) testing & adoption of AI to fight disinformation (media/citizens)

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## WANTED

### Competences & Skills wanted

Technical, Design, Coordination, Writing, etc

### Types of partners sought

Industry, SME, RTD center, University, User-groups, etc

### Work to be performed

Prototyping, Programming, System Integration, Dissemination, Engineering, etc





# Horizon Europe Info Day and Brokerage event

## Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

## EXPERTISE OFFER

### WHAT WE DO

- **Serious Games** (bespoke / off-the-shelf; e.g. Strategy Games, Role-Playing Games); + Social Games, (Virtual) Escape Games, (Online) Board Games;
- **Gamification Design**;
- Innovative Technologies – e.g. *proprietary* Game Engine, *Game Management System*, *Authoring Tools* (for **Scenarios**, **Dialogues**, Graphics); **game tracking & analytics**; next: *adaptive scenario deployment* based on user profile;
- **Multi-player** / -device / -platform delivery (**mobile** / console / desktop - OpenGL / HTML5; **VR / AR**) 2D/3D
- *Interoperability* with LMS / LCMS.

### OUR ADDED VALUE

- **Community engagement and involvement** (incl. *attention retention*), **Raise awareness**;
- **Game design applied**,
- *Design Thinking* approach, *Co-creation*;
- Training, Competence development, **Performance Measurement**;
- **Interactive, dynamic, real-time UX**;
- High Technical skills (graphics; animation; CMS, SW development; online / offline / blended).
- Familiarity with EC-funded related topics (H2020 Beaconing; Erasmus+ CDTMOOC, QUEST)

# Adra

AI, DATA AND ROBOTICS ASSOCIATION



## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

In collaboration with the European Commission and Ideal-ist

# Center for Robotics and Autonomous System, CTU in Prague **Autonomous Multi-robot Systems**

*Tomáš Svoboda*

<http://cmp.felk.cvut.cz/~svoboda>

svobodat@fel.cvut.cz



# CTU

**CZECH TECHNICAL  
UNIVERSITY  
IN PRAGUE**

# Machine learning expertise in multi-robot systems

## autonomous, outdoor, unknown terrain, ...

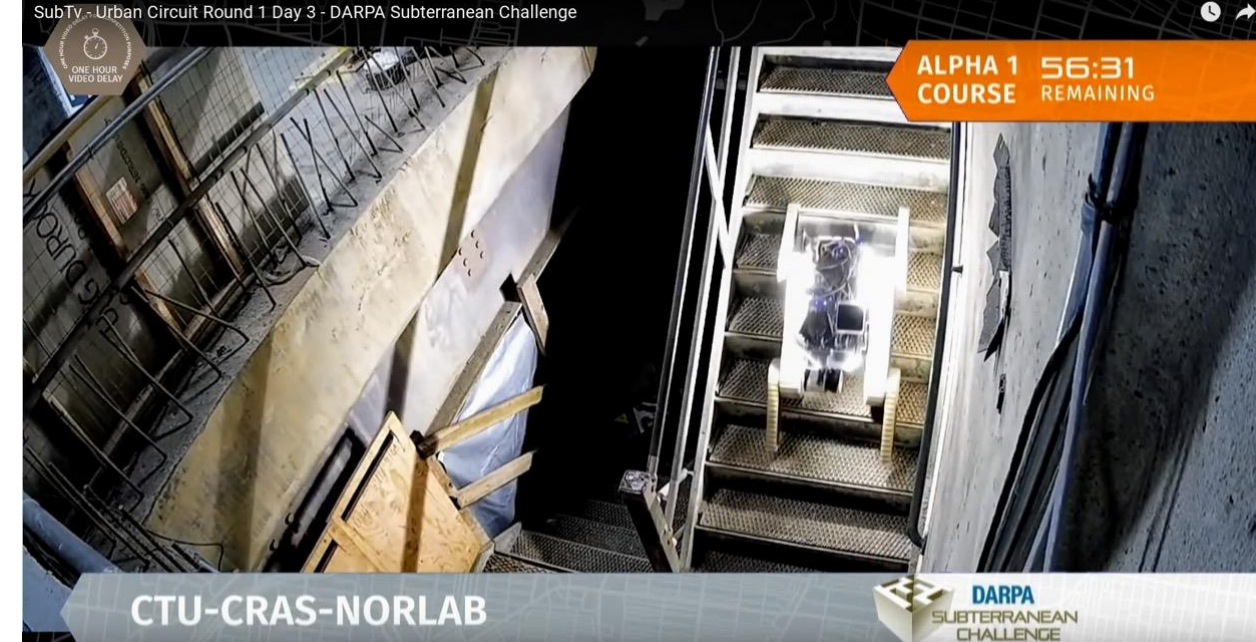
- Research in machine learning for exploration, robot-terrain interactions, ... e.g.
  - V. Salansky, K. Zimmermann, T. Petricek, T. Svoboda. [Pose consistency KKT-loss](#) for weakly supervised learning of robot-terrain interaction model. IEEE Robotics and Automation Letters. 2021
  - Tomáš Petříček, Vojtěch Šalanský, Karel Zimmermann, Tomáš Svoboda. [Simultaneous exploration and segmentation](#) for search and rescue. Journal of Field Robotics. 36(4), June 2019
- human-robot communication
- swift deploying large multi-robot system in the wild (DARPA SubT, Amatrice 2016, ...)
- modeling, simulators (<https://subtchallenge.world/leaderboard> ), e.g.
  - P. Vacek, O. Jasek, K. Zimmermann, T. Svoboda. [Learning to Predict Lidar Intensities](#). IEEE Transactions on Intelligent Transportation Systems. 2021
  - Martin Pecka, Karel Zimmermann, Matěj Petrlík, Tomáš Svoboda. [Data-driven Policy Transfer](#) with Imprecise Perception Simulation. IEEE Robotics and Automation Letters, Vol. 3, Issue 4, Oct 2018

Interested in (not only):

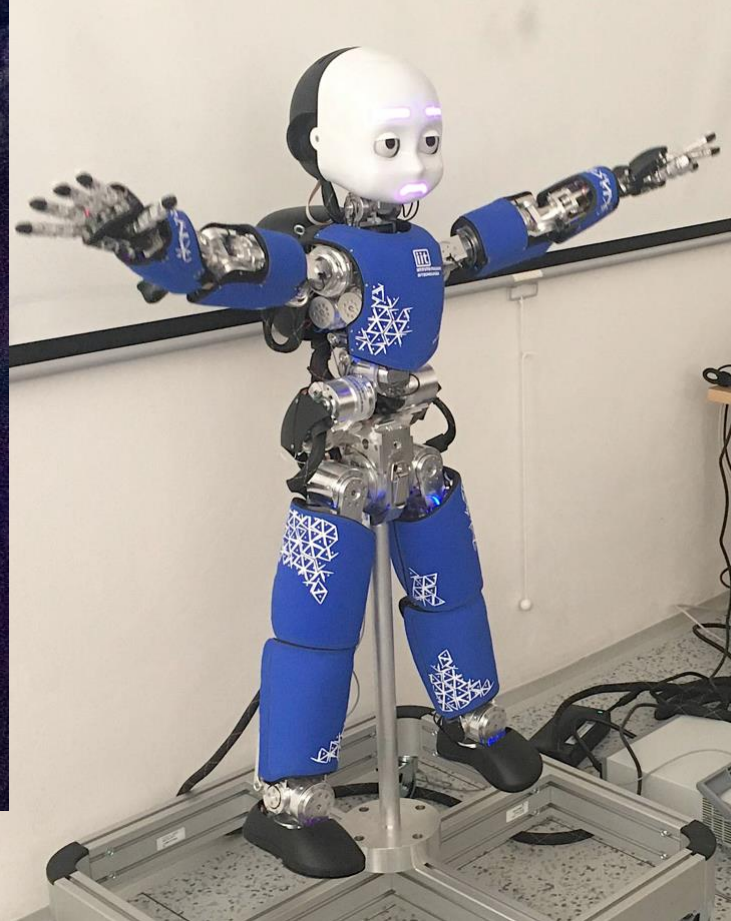
- HORIZON-CL4-2021-DIGITAL-EMERGING-01-11: Pushing the limit of robotics cognition



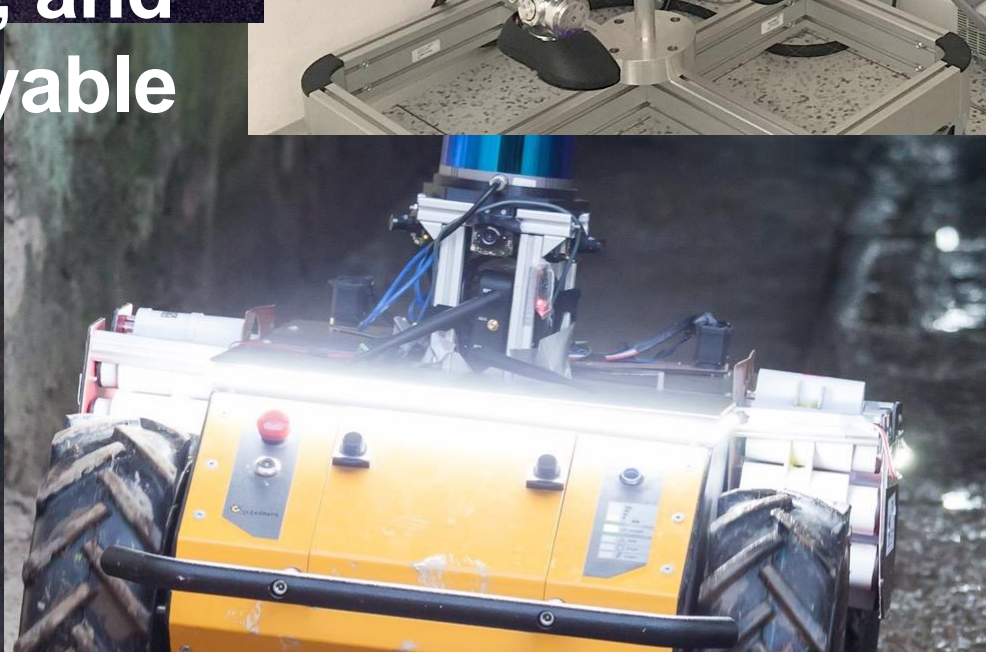
Experienced in collaborating with Firefighters, rescue units.  
Photo from Amatrice 2016  
FP7 projects NIFTi, TRADR



[DARPA SubTerraanean Challenge, 2019-2021](https://www.darpa.mil/Programs/Challenge/2019-2021-SubTerraanean-Challenge)  
[2x 3rd overall](https://www.darpa.mil/Programs/Challenge/2019-2021-SubTerraanean-Challenge), best in self-funded teams  
Qualified to the final event 09/2021  
<http://robotics.fel.cvut.cz/cras/darpa-subt/>



All kinds of robots  
also with arms, and  
sensors deployable



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21 July 2021, 9:30am to 1pm CEST

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### Shadow Robot Company

*Telerobots for Good*

Dr Radhika Gudipati



E: [radhika@shadowrobot.com](mailto:radhika@shadowrobot.com)

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### PROJECT IDEA

*Topic: Cluster 4: Destination: Digital and Emerging Technologies for Competitiveness and fit for the Green deal*

**HORIZON-CL4-2021-DIGITAL-EMERGING-01-11 – Pushing the limit of Robotics Cognition**

Type of project: *RIA*

#### Project objectives:

Smarter robots with improved capabilities, functionalities (including complex functionalities such as manipulation of delicate, irregular, dynamic or deformable objects, navigation in un-controlled and variable or challenging and harsh environments.

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### WANTED

**Competences, Skills Types of partners sought**

Industry – end-users with potential use cases

SMEs – Sensors, vision, Immersive tech, Mobile platforms

RTOs, Universities – AI capabilities, Learning by demonstration, etc.

**Work to be performed**

Building a Remote robotic system that is robust, reliable and allows human operators to carry out engineering and maintenance tasks remotely





## EXPERTISE OFFER

**Experts** in robotic grasping and manipulation since 1997

**Tech offer:**

**Shadow Dexterous hand** – most advanced commercially available robot hand that can match the human manipulation ability very closely

**Telerobot** – World's first haptic telerobot that can enable remote handling, maintenance and repair

**Rich experience in collaborative R&D** – partnered in 12 EU projects (since FP7) with four ongoing H2020 projects

**UK and Spanish entities:** Shadow Robot is an SME with headquarters in London and another office in Madrid.

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## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

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### CNRS-AIST Joint Robotics Lab. / JRL

*Expertise offer on robotics, autonomous  
and interactive with humans*

Guillaume Caron

T: +81-29-861-9323

E: [guillaume.caron@aist.go.jp](mailto:guillaume.caron@aist.go.jp)





## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

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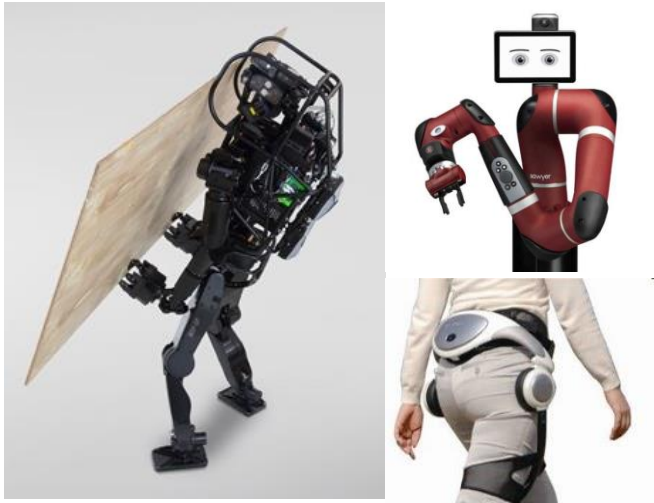
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### Competences

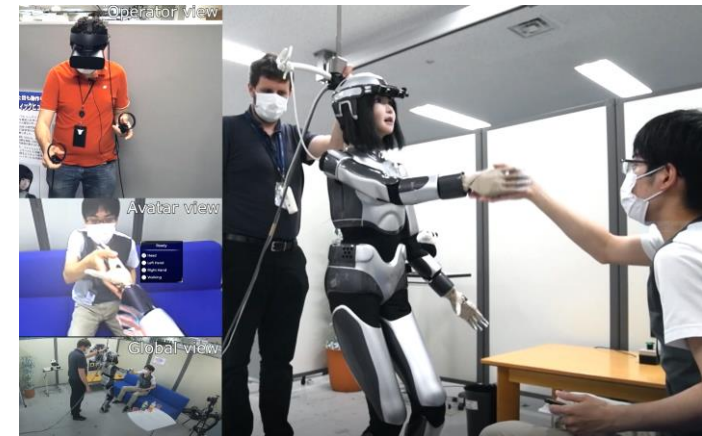
Human skills reproduction and enhancement by robot technology

### Expertise

Robot design, human-robot interaction, motion control, perception



*Human skills reproduction and enhancement*



*Immersive robotics for remote fine interaction*

### Infrastructure

40 members, large experimental spaces, 5 full humanoid robots

### Selected references

International research projects: H2020 Comanoid, <http://comanoid.cnrs.fr>

Industrial partners: Kawasaki Heavy Industries, Airbus

<http://jrl-umi3218.github.io>

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## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

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### Jetpack Cognition Lab

*flatcat*

Dr. Oswald Berthold



T: +49 160 2384515

E: [opt@jetpack.cl](mailto:opt@jetpack.cl)

W: <https://jetpack.cl>



Why flatcat?

We create truly adaptive robots that can survive in people's homes and give them a pet-like experience. *flatcat* is for everyone who wants to have a pet but cannot for various reasons.



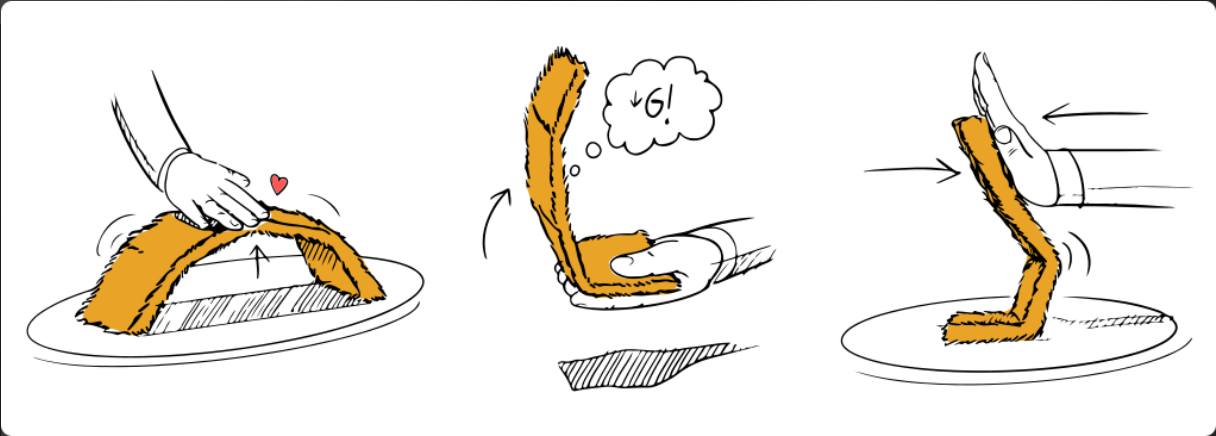
Short demo.



# What is the result?



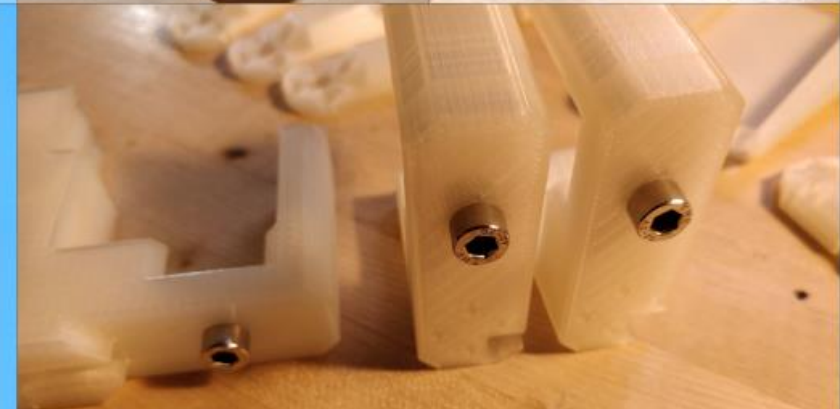
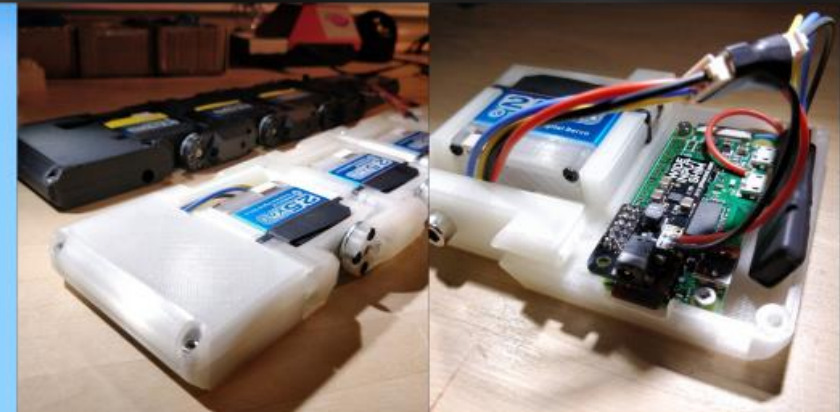
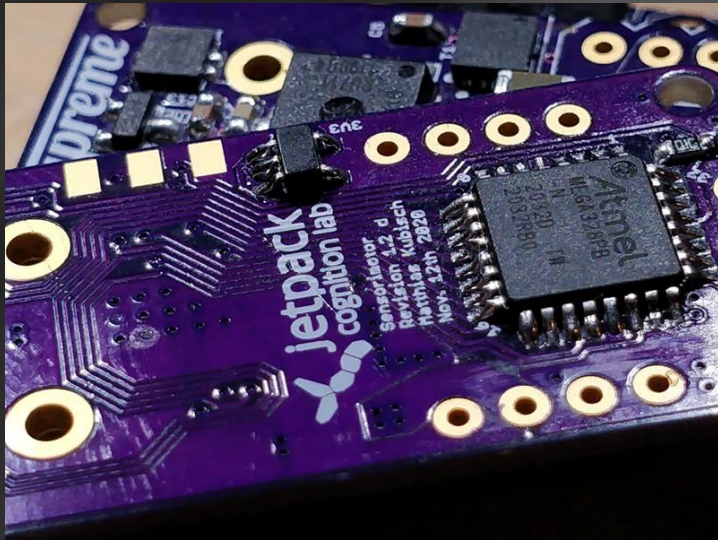
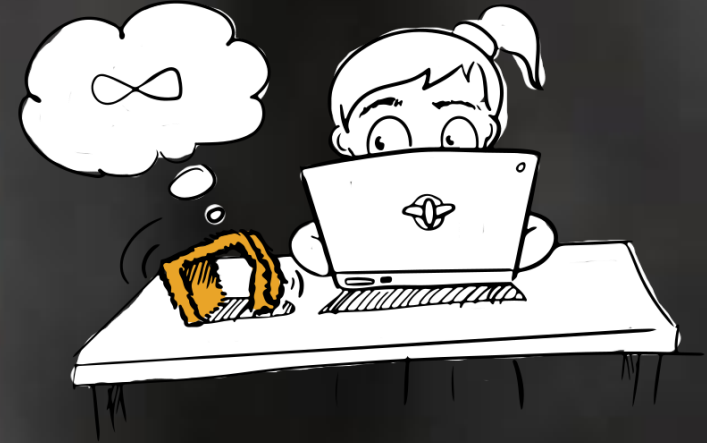
To reach this, the robot needs to be robust, affordable, and approachable. So we made it adaptive, low-cost, low-degrees of freedom, and gave it a soft furry finish.



How do we do it?



We used active force sensing control loops, intrinsic motivation, 3D-printing and custom motor controls.



<https://flatcat.berlin>

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AI, DATA AND ROBOTICS ASSOCIATION



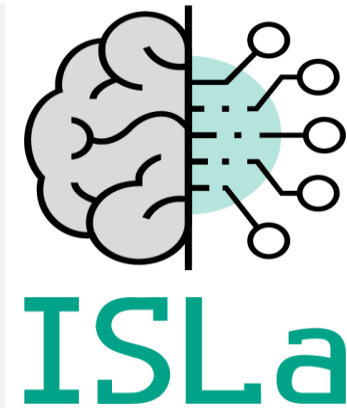
## Horizon Europe Info Day and Brokerage event Cluster 4 AI, Data and Robotics

21 July 2021, 9:30am to 1pm CEST

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# Intelligent Systems Lab (ISLa) Competences and expertise

Head: Prof. Alessandro Farinelli ([alessandro.farinelli@univr.it](mailto:alessandro.farinelli@univr.it))



For more information please contact:

Dr. Alberto Castellini ([alberto.castellini@univr.it](mailto:alberto.castellini@univr.it))



UNIVERSITÀ di VERONA Dipartimento di INFORMATICA

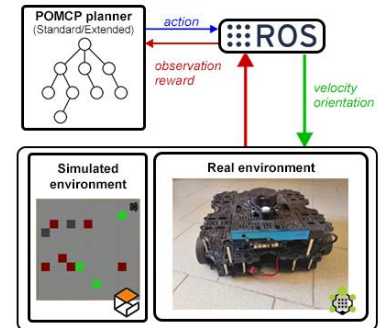




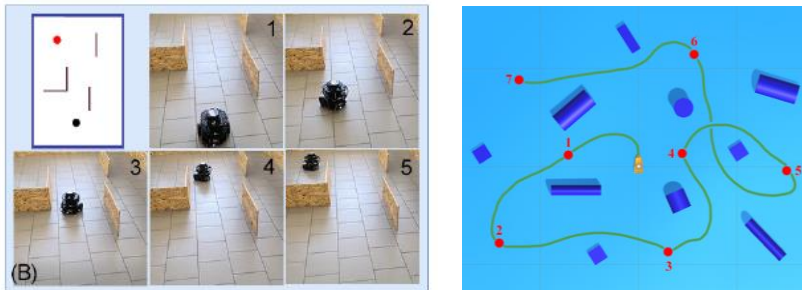
## EXPERTISE: Methodologies

- Reinforcement learning (model-based and model-free) for Intelligent Robotic Systems
- Safety guarantees for deep reinforcement Learning (e.g., formal verification of ANN)
- Probabilistic planning under uncertainty
- Rule-based shielding for probabilistic planning and reinforcement learning
- Behavioral anomaly detection for POMDPs
- Multi-robot coordination
- Explainability and interpretability

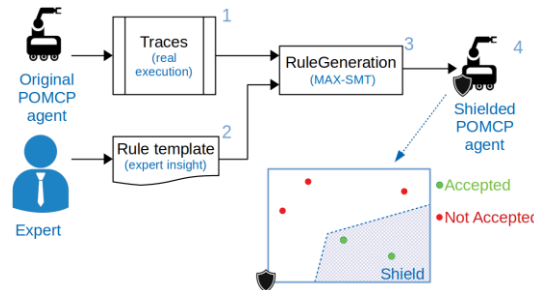
Probabilistic planning and high level control



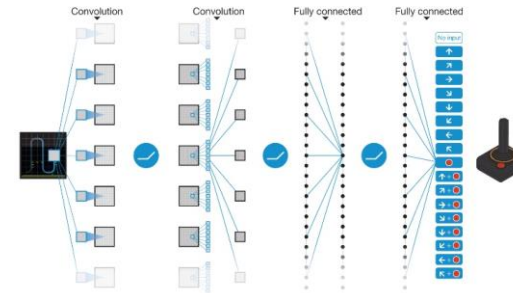
Mapless navigation for turtlebot and INCATCH boats



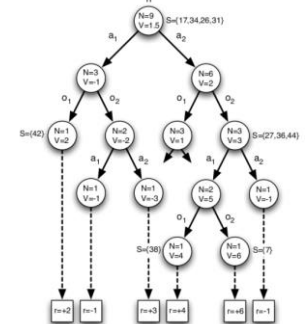
Shielding for planning and RL



Deep reinforcement learning [Mnih et al., 2015]



POMCP-based planning [Silver et al., 2010]





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## EXPERTISE: Applications

### ● Intelligent mobile robots for industry 4.0

- **Trend:** flexible operations, unstructured environments, cooperation with humans
- **Collaborative Mobile Robots:** assist humans in a shared workspace
- **Applications:** logistics, inspection, maintenance
- **AI:** autonomous navigation, **coordination, planning, learning**



2000s mobile robots to move pods



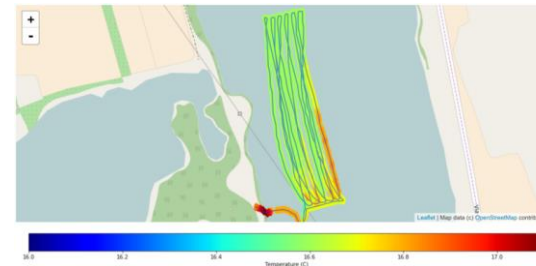
Collaborative Mobile Robots

### ● Environmental monitoring

- Operate **beyond line of sight**
- **Repeatable** measurements
- Ensure **data quality**



Drone



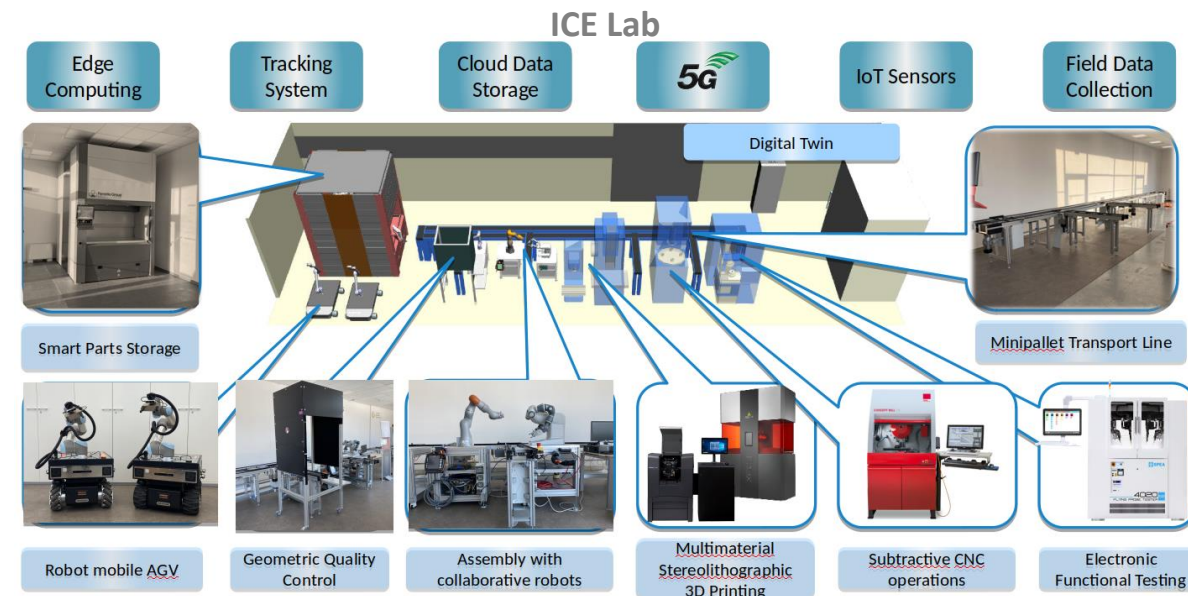


## PEOPLE

- Faculty: Alessandro Farinelli (Head), Alberto Castellini
- Research fellows: Federico Bianchi, Edoardo Zorzi
- PhD students: Davide Corsi, Adrià Fenoy Barcelò, Enrico Marchesini, Giulio Mazzi, Maddalena Zuccotto
- Masters and Bachelors: 10 in total at the moment

## INFRASTRUCTURE

- Industrial Computer Engineering lab (ICE)
- 
- INTCATCH drones



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**Nuromedia GmbH/NURO**  
*SmartAzoresSHM + XRMedium*  
Christian Tismer



T: +49 179 321 66 73

E: [christian.tismer@nuromedia.com](mailto:christian.tismer@nuromedia.com)



### **PROJECT IDEA 1: *XRMedium (Planing/UMONS)***

Topic: HORIZON-CL4-2021-HUMAN-01-13: eXtended Reality Modelling

Type of project: (RIA)

Project objectives:

**Behaviour in extended reality:** AI analytics on training with adoption to trainer/participants

**WANTED**

Types of partners sought

**Use Case for training of critical or risky situation**

(Health, Industry, Civil Protection, Defense,... your setting)



## PROJECT IDEA 2 – *SmartAzoresSHM (Early/NN)*

**Topic:** HORIZON-CL4-2021 or HORIZON-CL3-2021-DRS-01-02: Integrated Disaster Risk Reduction for extreme climate events: from early warning systems to ... (IA)

### Project objectives:

Digital Twin on buildings for SHM with AI based prediction. Tectonics on the Azores... Open to yours interest. Relevantce rised on current desasters in Germany; follow-up proposal.

**WANTED**

### Types of partners sought

Researcher, Construction Experts (LE/SME), Consultant

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### EXPERTISE OFFER



Nuromedia is an independent software developer with 20 years of expertise in R&I

Technical Partner in a a broad range of domains:

- Cities, Security, Industry, Digital Training, eHealth

Skills in Full-Stack Software Development:

- System Architecture, Design and Development
- AI, Digital-Twins, Data-Analytics and Prediction, Middle Ware
- Applications for Desktop, Mobile, Web and Smart Glasses/Devices
- UI/UX & Human Machine Interfaces (HMI)

<https://www.nuromedia.com/research-innovation>

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# Teknopar Industrial Automation/TEKNOPAR

*Expertise Offer*

Özlem ALBAYRAK, PhD.

T: +90 533 342 85 79

+90 532 415 57 83

E: [punal@teknopar.com.tr](mailto:punal@teknopar.com.tr)

[albayrak@teknopar.com.tr](mailto:albayrak@teknopar.com.tr)

**teknopar**  
Industrial Automation





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## Automation and Control Systems

- PLC: TIA Portal, STEP 7 SIMATIC Manager, Rockwell Automation PlantPAx SCADA/ HMI: WinCC, Visual Studio .NET Industrial
- Communication System design and software: PROFINET, PROFIBUS, AS-i, DeviceNet
- Servo Controlled Motion Systems: PLC open motion control, SIMOTION, SINAMICS, CODESYS
- Embedded software development: IAR Embedded Workbench, ARM KEIL
- NDT and test systems
- Condition monitoring

## IoT and Sensor Networks

- M2M/ Internet of Things IIoT
- Narrow Band IoT (NB-IoT /LoraWAN/ SigFox/..)
- OPC UA,
- B2MML,
- PLCopen
- OPC UA
- Asset Administration Shell
- IDS Data Connector

## Edge/Cloud Computation and Digital Platforms

- SoA/Middleware Convolutional Networks and Deep Learning Data Mining & Analytics
- Cloud computing
- Distributed system architecture experience and relevant frameworks such as Hadoop, Mahout, Spark, Pig, Kafka, Zookeeper, NodeRed, Apache StreamPipes



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### Data mining/ analytics

- Examine large data sets to discover patterns and uncover new information
- Privacy preserving data mining
- Pattern recognition
- Information retrieval
- Data stream mining
- Governed data discovery



### AI/ML/ DL

- Exploring algorithms that can learn from data
- Neural networks and deep learning
- Artificial intelligence
- Explainable Artificial intelligence

### Cognitive Digital Twin

- Digital Twin
- Hybrid Twin
- Cognitive Digital Twin

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## Ubiwhere

*Suiting the future of Technology*

Ricardo Vitorino

ubiwhere

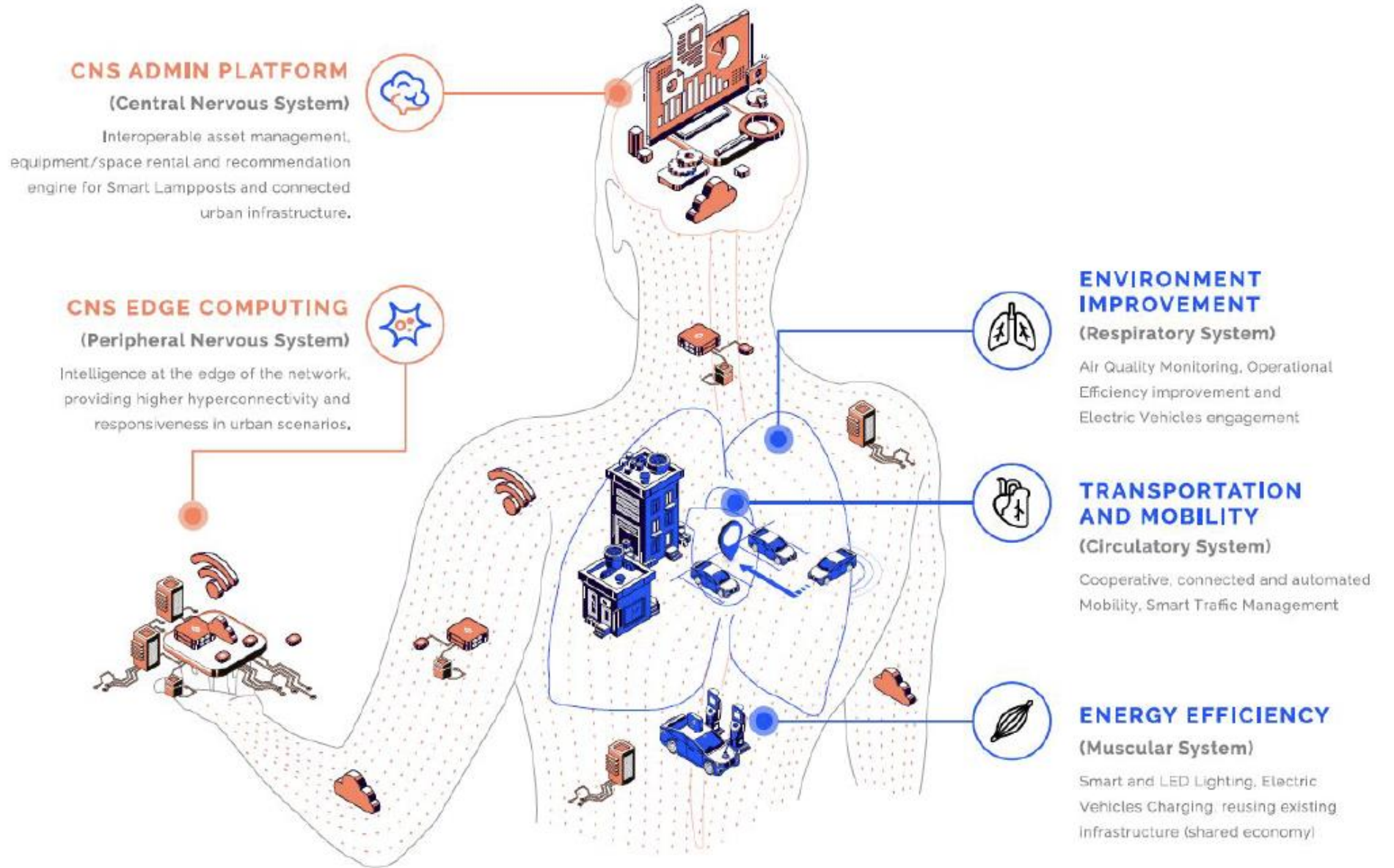
T: (+351) 913 850 631

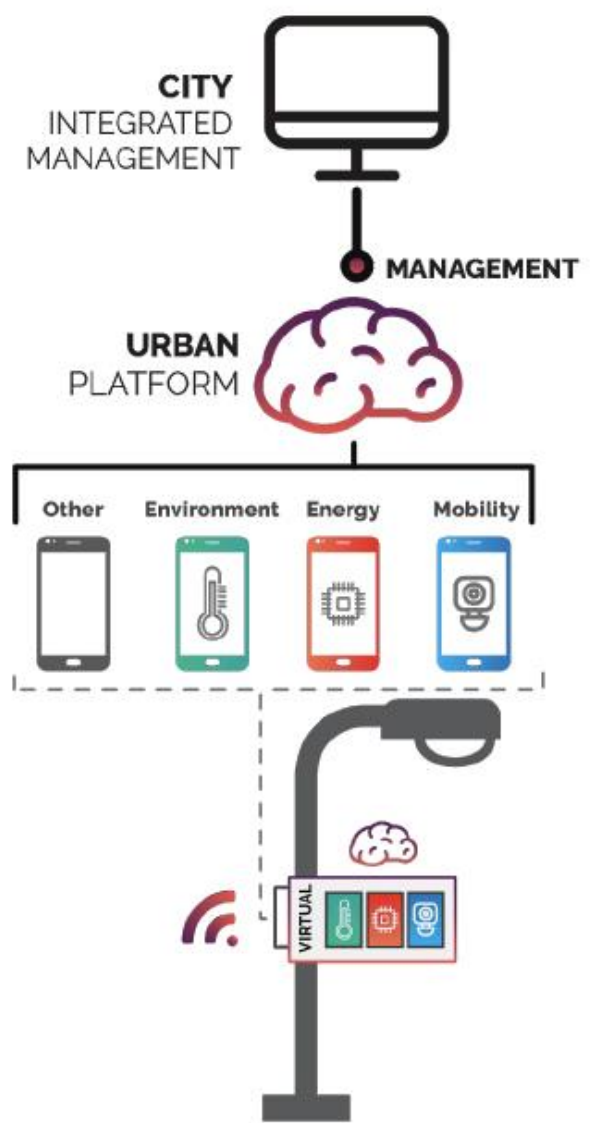
E: [innovation@ubiwhere.com](mailto:innovation@ubiwhere.com)

# CITY NERVOUS SYSTEM

An organic approach to City Management

Transmitting signals to every part of the body to efficiently coordinate its actions.





# ubiwhere

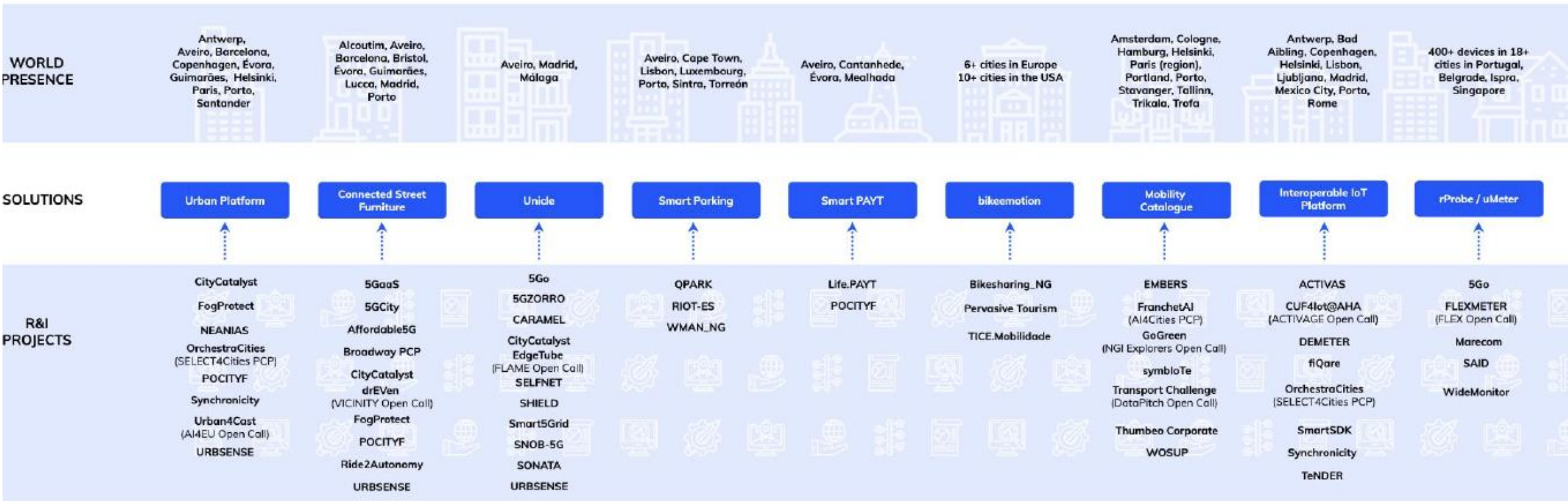
Powered by the  
**Smartlamppost.**

A modular approach  
for shared smart  
infrastructure:

- Smart lighting
- EV Charging
- Neutral Hosting
- Edge Computing



# Enabled by R&I.



# Cluster 4

DIGITAL, INDUSTRY AND  
SPACE CLUSTER

## HORIZON-CL4-2021-RESILIENCE-01-01

Ensuring circularity of composite materials

- Receive as You Throw, Rewarding app for sustainability

## HORIZON-CL4-2021-DATA-01-01

Technologies and solutions for compliance, privacy preservation, green and responsible data operations

- Peripheral Nervous System - Cloud Continuum and privacy-preserving technology (follow-up FogProtect)

## HORIZON-CL4-2021-DATA-01-03

Technologies for data management

- Central Nervous System - Open Standards and FIWARE technology to support AI use cases

## HORIZON-CL4-2021-DATA-01-05

Future European platforms for the Edge: Meta Operating Systems

- Peripheral Nervous System - Testbed in Aveiro and CCAM use cases

## HORIZON-CL4-2022-DATA-01-05

Extreme data mining, aggregation and analytics technologies and solutions

- Central Nervous System - AI use cases on mobility





# Let's go for it?

**Ricardo Vitorino**

Head of Innovation (Smart Cities)

[innovation@ubiwhere.com](mailto:innovation@ubiwhere.com)

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# THANK YOU !