

# HORIZON-CL4-2023-DIGITAL-EMERGING-01-01

## **Novel paradigms and approaches, towards AI-driven autonomous robots (AI, data and robotics partnership) (RIA)**

We are looking for:

- Achieve substantial “next step autonomy” in robots, undertaking non-repetitive tasks in realistic settings, including Human-Robot interactions, as well as robots acting in isolation, demonstrated in key high impact sectors where robotics has the potential to deliver significant economic and/or societal benefits.
- Deliver a step change in autonomy essential for the diffusion of robots in various industries, sectors and services.
- Accelerate enabling conditions essential for the diffusion of robots in various industries, sectors and services.
- TRL: start at 2-3 and achieve 4-5 at the end of the project
- Indicative project size ~8M€ (Indicative budget: 30M€)

# HORIZON-CL4-2023-DIGITAL-EMERGING-01-01

## Novel paradigms and approaches, towards AI-driven autonomous robots (AI, data and robotics partnership) (RIA)

We do NOT want:

- Proposals with **limited ambition** on robot autonomy delivering only incremental progress over the scientific state of the art.
- **Non-realistic settings** disconnected from actual needs of key industries, sectors and services (end-user involvement is key)
- Focus on **low impact sectors** with little potential to deliver economic or societal benefits.
- ***DO NOT DEVIATE FROM ADMIN/FORMAL requirements: e.g. transfer of essential information to annexes to overcome page limits, font size and formatting imposed by the templates...***



# HORIZON-CL4-2023-DIGITAL-EMERGING-01-01

## Key actors

Types of stakeholders that are addressed:

- Academy and research organizations
- Robot system manufacturers and integrators
- End users
- Pay attention to requirements on multidisciplinary + SSH (if human interaction)

# HORIZON-CL4-2023-DIGITAL-EMERGING-01-01

## Topic evolution

*The main focus of this topic is new, but it has close relationship with some topics of the work-programme 2021-2022:*

- HORIZON-CL4-2021-DIGITAL-EMERGING-01-11  
*Pushing de limit of robotic cognition (RIA)*
- HORIZON-CL4-2021-DIGITAL-EMERGING-01-12  
*European Network of Excellence Centres in Robotics (RIA)*
- HORIZON-CL4-2022-DIGITAL-EMERGING-02-06  
*Pushing de limits of physical intelligence and performance (RIA)*

*This topic is complemented by the topic:*

- HORIZON-CL4-2023-DIGITAL-EMERGING-01-02  
*Industrial leadership in AI, Data and Robotics – advanced human robot interaction (IA)*

# HORIZON-CL4-2023-DIGITAL-EMERGING-01-01

## Topic evolution

### Current project portfolio of RIAs in robotics (Horizon Europe)

#### 2021-DIGITAL-EMERGING-01-11 *Pushing de limit of robotic cognition:*

101070066 *REGO*

101070292 *HARIA*

101070254 *CoreSense*

101070165 *AGIMUS*

101070381 *PILLAR-Robots*

101070227 *CONVINCE*

101069536 *MOZART*

101070136 *IntelliMan*

101070310 *SESTOSENSO*

#### 2021-DIGITAL-EMERGING-01-12 *European Network of Excellence Centres in Robotics*

101070596 *euROBIN*

# HORIZON-CL4-2023-DIGITAL-EMERGING-01-02

## Industrial leadership in AI, Data and Robotics – **advanced human robot interaction** (AI Data and Robotics Partnership) (IA)

We are looking for:

- Proposals must target one of these two scopes (**to be identified in the proposal**):
  1. Development of **innovative solutions** to address major **application-driven challenges** (min 50% FSTP),
  2. **Large scale pilots** bringing major industries from key application sectors in Europe (FSTP optional)
- To reach the point where human robot interaction adds value and improves the quality of outcome for complex tasks.
- To address challenges in key industries and develop solutions that address human robot interaction at all levels from physical interaction to social interaction in a variety of working environments.
- Boost the innovation potential for wide uptake of AI, Data and Robotics.
- Proposals should include a **clear business case and exploitation strategy**.
- TRL: start at 3-5 and achieve 6-7 at the end of the project
- Indicative project size ~10M€   (Indicative budget: 30M€)

# HORIZON-CL4-2023-DIGITAL-EMERGING-01-02

## Industrial leadership in AI, Data and Robotics – advanced human robot interaction (AI Data and Robotics Partnership) (IA)

We do NOT want:

- Academic exercises with **limited potential for commercial exploitation** of the results after the end of the project.
- **Non-realistic settings** disconnected from actual needs of key industries, sectors and services.
- Focus on **low impact sectors** with little potential to deliver economic or societal benefits.
- ***DO NOT DEVIATE FROM ADMIN/FORMAL requirements: e.g. transfer of essential information to annexes to overcome page limits, font size and formatting imposed by the templates...***



# HORIZON-CL4-2023-DIGITAL-EMERGING-01-02

## Key actors

Types of stakeholders that are addressed:

- Robot system manufacturers and integrators
  - Tech-transfer institutions (e.g. DIHs, competence centers...)
  - Academy and research organizations
  - End users
- Pay attention to requirements on multidisciplinary + SSH (if human interaction)



# HORIZON-CL4-2023-DIGITAL-EMERGING-01-02

## Topic evolution

*The main focus of this topic is new, but it has close relationship with some topics from the work-programme 2021-2022:*

- HORIZON-CL4-2021-DIGITAL-EMERGING-01-11  
*AI, data and Robotics for the Green Deal (IA)*
- HORIZON-CL4-2021-DIGITAL-EMERGING-01-12  
*AI, Data and Robotics at work (IA)*
- HORIZON-CL4-2022-DIGITAL-EMERGING-02-05  
*AI, data and robotics for industry optimisation (including production and services) (IA)*
- HORIZON-CL4-2022-DIGITAL-EMERGING-02-07  
*Increased robotics capabilities demonstrated in key sectors (IA)*

*This topic is complemented by the topic:*

- HORIZON-CL4-2023-DIGITAL-EMERGING-01-01  
*Novel paradigms and approaches, towards AI-driven autonomous robots (AI, data and robotics partnership) (RIA)*

# HORIZON-CL4-2023-DIGITAL-EMERGING-01-02

## Topic evolution

Current project portfolio of IA (Horizon Europe):

<i>101070080</i>	<i>DARROW</i>	<i>101070588</i>	<i>HACID</i>
<i>101070076</i>	<i>CLARUS</i>	<i>101069994</i>	<i>EARASHI</i>
<i>101070046</i>	<i>ALCHIMIA</i>	<i>101070600</i>	<i>SOFTENABLE</i>
<i>101070115</i>	<i>TUBERS</i>	<i>101069499</i>	<i>FAIRWork</i>
<i>101070496</i>	<i>Smart Droplets</i>	<i>101070443</i>	<i>GEYEDANCE</i>
<i>101070405</i>	<i>DIGIFOREST</i>	<i>101070440</i>	<i>FEROX</i>
<i>101070320</i>	<i>ROMAIN</i>	<i>101070604</i>	<i>SIMAR</i>
<i>101070321</i>	<i>GRINNER</i>		
<i>101070524</i>	<i>RECLAIM</i>		