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€)
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...
Key actors

Types of stakeholders that are addressed:

- Academy and research organizations
- Robot system manufacturers and integrators
- End users

- Pay attention to requirements on multidisciplinarity + SSH (if human interaction)
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 the 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 the 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€)
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...
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 multidisciplinarity + SSH (if human interaction)
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):

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