European Robotics and AI Network

HORIZON-CL4-2021 - DIGITAL-EMERGING-01

Project ID: 101070596

euROBIN website:

Coordinator: Alin Albu-Schäffer

DLR, German Aerospace Center

Project duration: July 2022 – June 2026

Short History

- In 2019 ICT-48 - first EU call for a Network of Excellence Labs in AI (including robotics)
- Mainly networking activities, less emphasis on research
- The robotics proposal CENTRIS and ETERNITIS were not funded
- Selected projects:

ELSA
dAIEDGE

European Artificial Intelligence On-Demand Platform

coordination action

trustworthy AI

media and fake news

machine learning

human centric AI

Robotics is cool and visible!

Ambition and Objectives

S & T Excellence:

- Addressing a main scientific and technological challenge hampering the breakthrough of robotics:
  Transferability of cognition-enabled robotics methods between systems and among companies

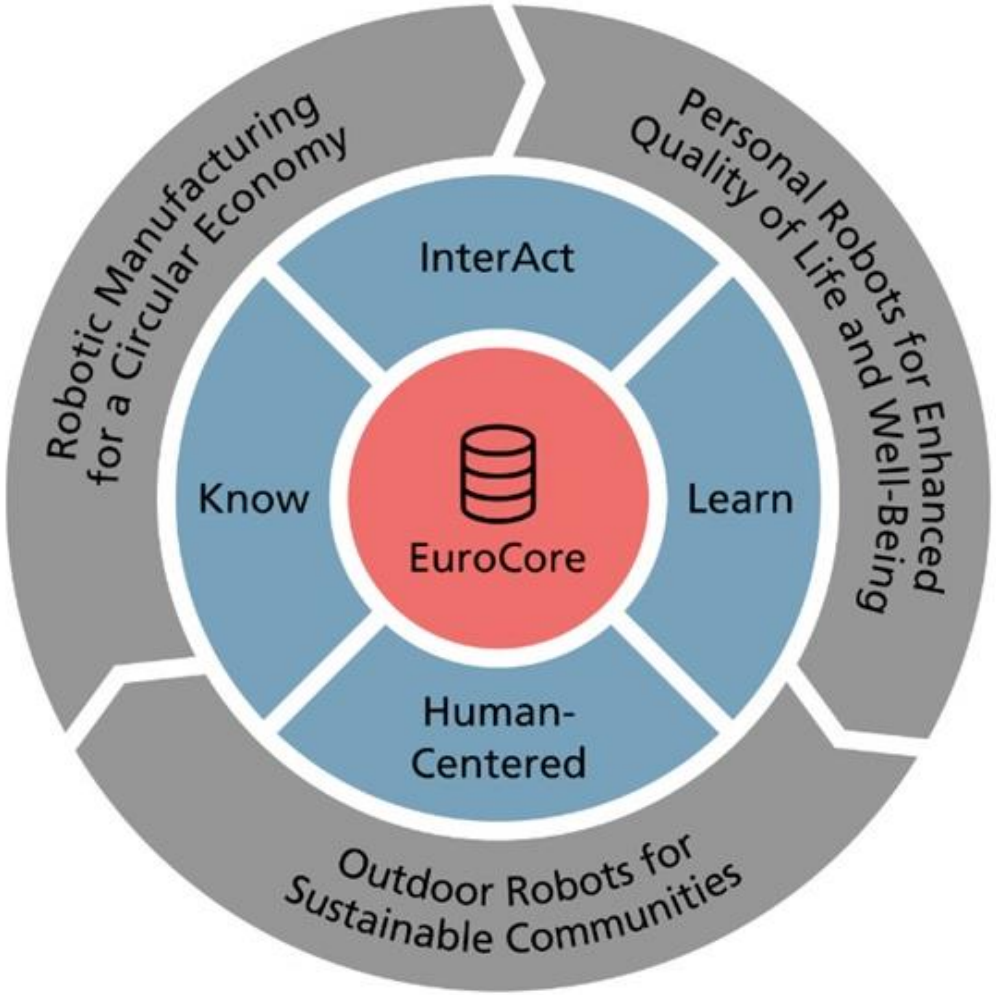
Robotics Network of Excellence Labs:

- a stage for cooperation and exchange of scientific knowledge and talents between outstanding robotics labs in Europe
- generating a nucleus to which the community at large can adhere

Scientific and Technological Goals and Methods

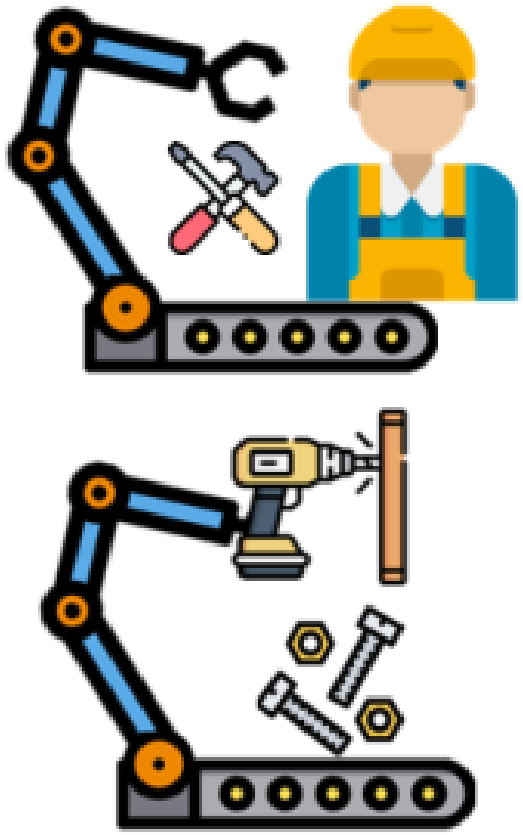
Basic **methodical advancement** in the core robotics & AI topics

- InterAct
- Know
- Learn
- Human Centered Robotics

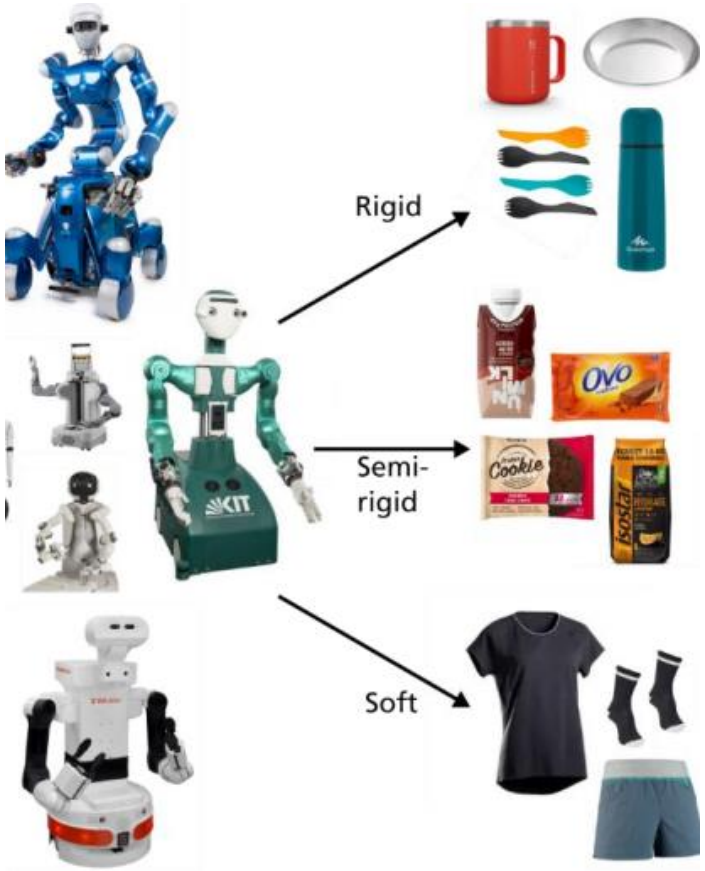


Scientific and Technological Goals and Methods

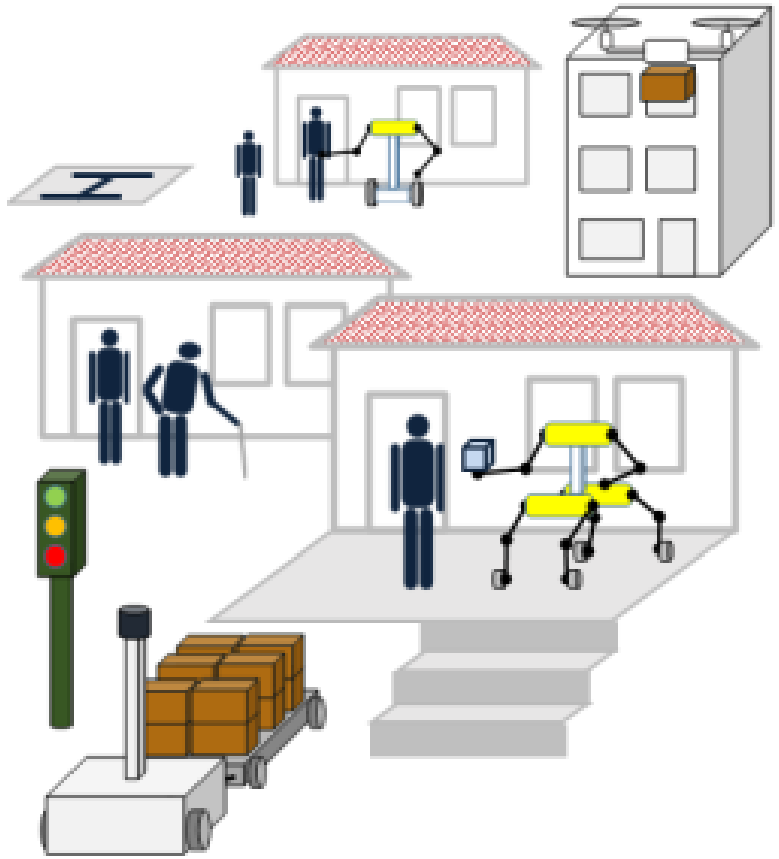
Cooperative Competitions for benchmarking and transfer in three **major application fields**:



Robotic manufacturing for a circular economy

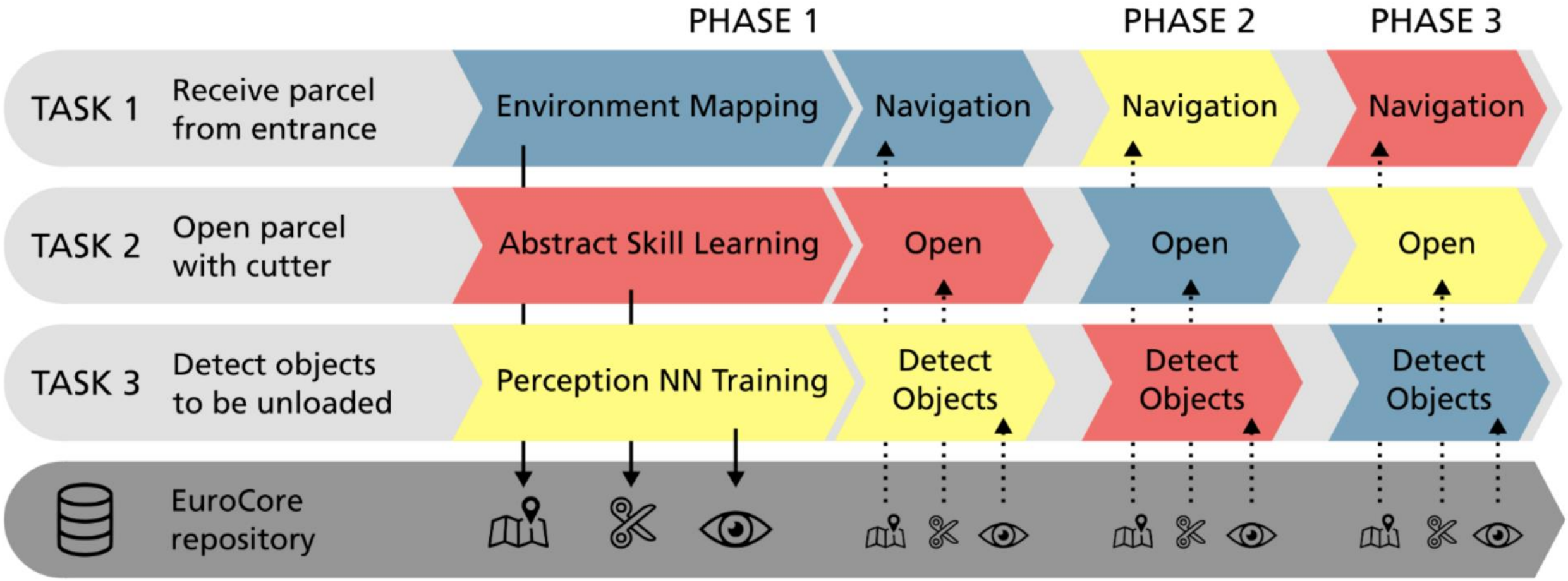


Personal robots for enhanced quality of life and well-being



Outdoor robots for sustainable communities

Interaction between partners



The individual robots solve one task each in PHASE 1. In PHASE 2 and PHASE 3, shared knowledge enables fast joint progression.

Integrative Network of Excellence in Robotics

euROBIN Consortium:

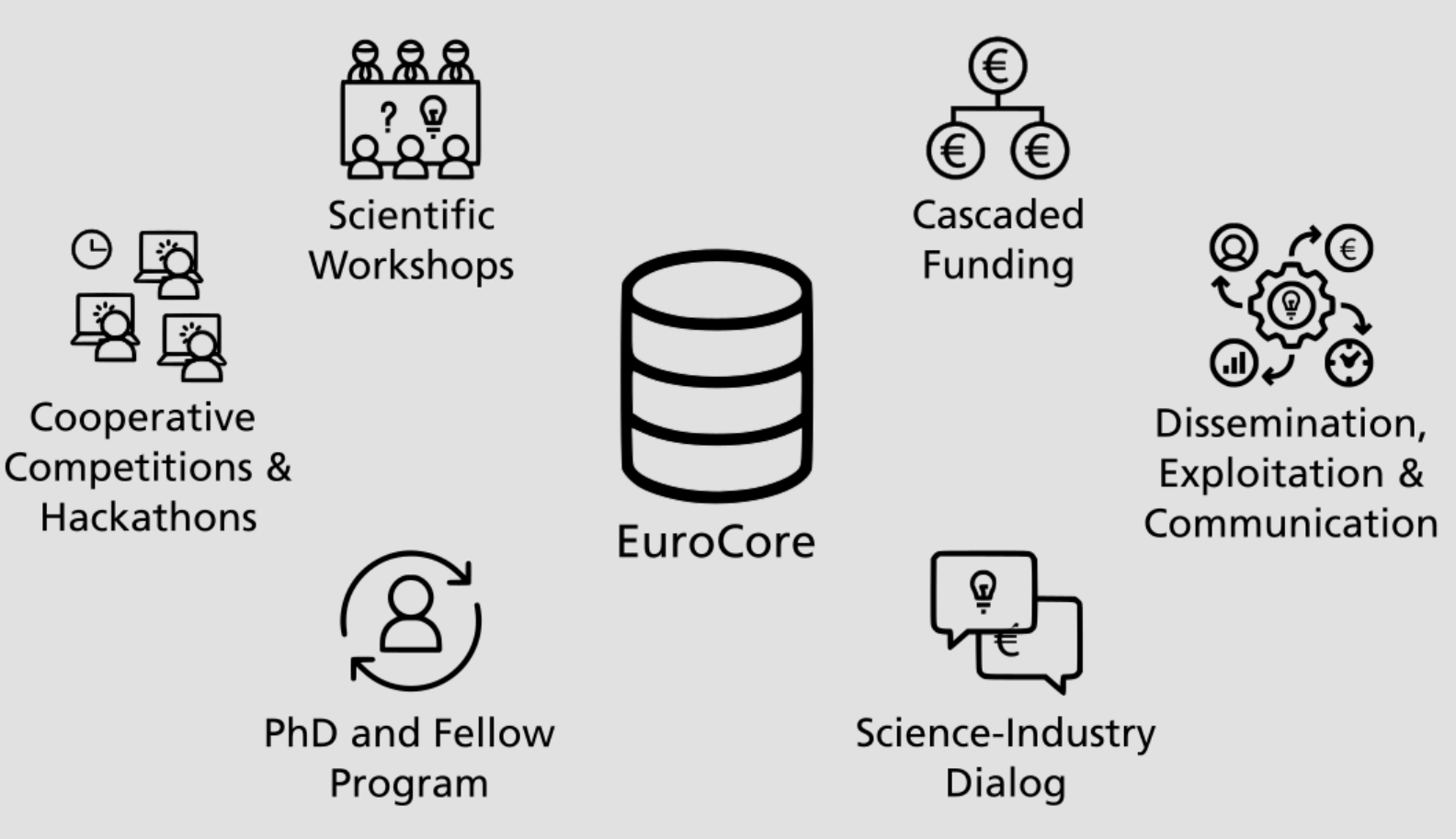
- **31** partners from
- **14** countries
- **26** European cities
- **7** Industrial partners
- **26** Academic partners

Scientific network, strengthening the research part of euROBOTICS

Outreach to the entire robotics community:

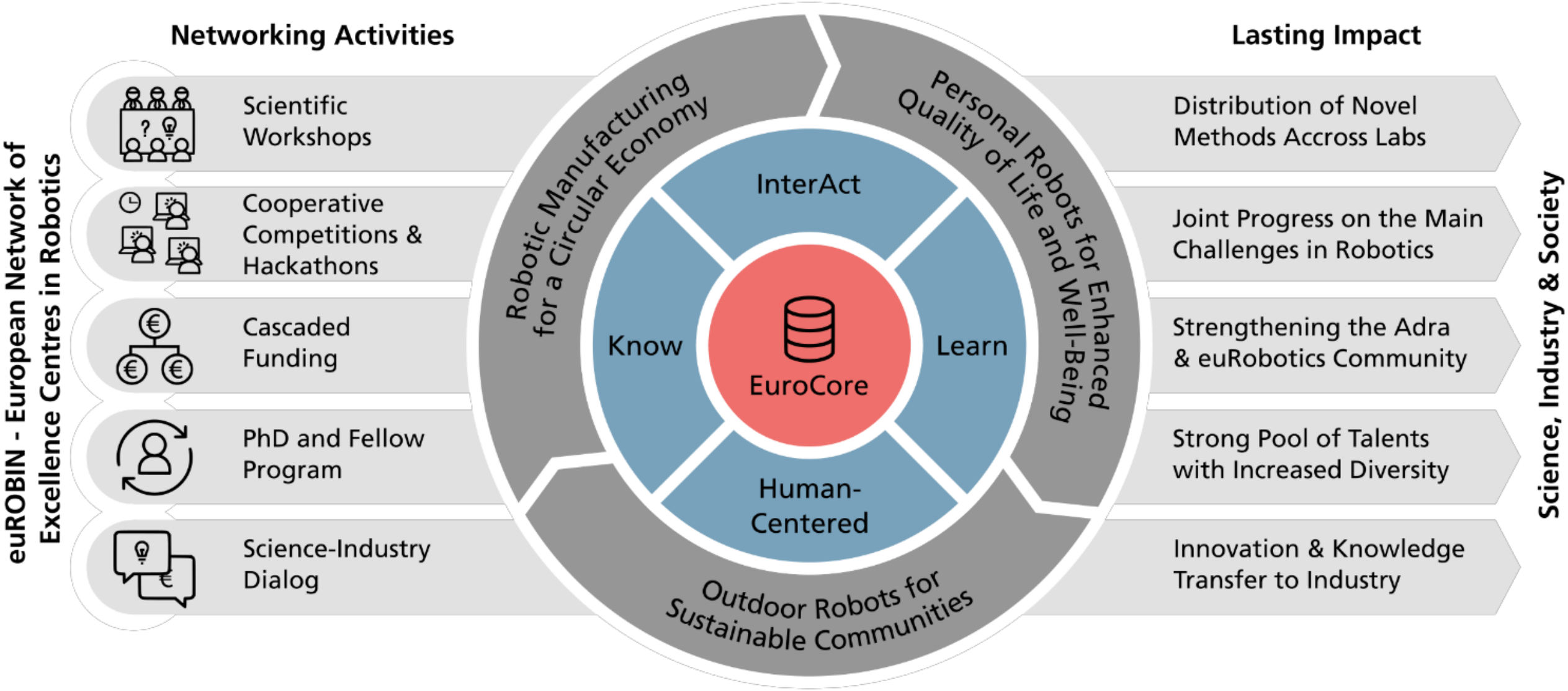
- about 40 new partners will be directly included in the consortium through cascade funding
- open to any lab through a variety of networking instruments

Integrative Network of Excellence in Robotics



Networking activities open to the entire robotics community

Lasting Impact Goals and Tools to Reach Them



From a Network of Roboticists to a Network of Robots

How to design our research WPs, our application benchmarks, and the EuroCore to

- best learn and benefit from each other
- boost our transferability and reusability of results

Individually, we have some of the coolest robots on the planet
Through euRobin we seek to boost their skills to new levels

Cascade Funding

5 Open Calls for 3 Eurocore-push calls and for 2 Eurocore-pull calls

- Push:
  - 26 technology exchange programmes
    - to drive methods for defined topics
    - should be validated on two different systems, other than the own one
    - exchange code and data through EuRoCoRe repository
- Pull:
  - 12 Collaborative projects
  - to use methods from EuRoCoRe repository

- **Each project € 60 000**
- **Total funding € 2 280 000**
- **Deadline: May 10, 2023**

Link to the Calls:

Info day on the calls: 21st March, 10:00 Brussels time

Open Calls – ideal project

- Project should align with and complement the general goals of euROBIN
- Transferable robotics solution
- For different robots and across euROBIN application areas
- Open-sourced, documented and accessible in EuroCore
- General solutions to one of the identified challenges
- Cutting-edge methods and technologies, or hardware and software modules which are mature and reliable
- The work done by participants should be preferably planned jointly with the host institutions, e.g. by PhD student visit in one or two euROBIN labs

Link to the Calls:

First Open Calls 2023 – 10 Topics

1. Perceiving and tracking of deformable objects
2. Dialog management for natural human robot interaction
3. Visual perception: object recognition and 6D pose estimation for known objects
4. Defining robotic tasks sequence through imitation learning from videos / observation
5. Method for collecting and labeling interactions between human and physical robot with internet of things devices and IMU time-series data
6. Multifunctional gripper design and tool changing mechanism for assembly
7. Ensuring high precision tasks with collaborative robots for flexible manufacturing
8. Novel control methods for cable suspended dual arm aerial manipulators in outdoor scenarios: Towards safer human-aerial robot interactions
9. Urban navigation with wheeled-legged robots
10. Massively parallel simulation and learning algorithms

Link to the Calls:

1st CALL for Brain Magnet Programme

A travelling and exchange programme to transfer methodology and technology to at least two robotic systems of the consortium partners.

•From the 1st of April 2023 to the 31st of October 2023, all euROBIN partners will be able to apply to the euROBIN Brain Magnet Programme. This program is meant to fund:

- Visiting PhD students, postdocs and young researchers from other institutions than the applying partners one to contribute to euROBIN scientific activities, test, and benchmark developed methodologies. The visiting researcher will also actively participate to the challenges.
- Visiting Fellow from other institutions and organize lectures, tutorials with distinguished academic/industrial to deepen subjects of interest.

•The programme will cover, for each year of the euROBIN project:

- **5 PhD/Post Doc students for 6 months at 1.2k€ per month**
- **5 Fellows for 6 months at 2k€ per month**

•The hosting institutions have to be members of the euROBIN consortium while visiting students, researchers and fellows can be from every institution except for the hosting ones (I.e. including from euROBIN member institutions).

euROBIN events

2022: Kick-off in Munich, Germany

2023: euROBIN event is planed in Seville, Spain

- over 100 participants
- about 7 robot systems (humanoids, mobile robots)
- around 6 robotics arms

	Fr	Sa	Su	Mo	Tu	Wed	Thr	Fr	Sa
	12	13	14	15	16	17	18	19	
9:00	arrival, unpacking, setup	first trials hackathlon to be organized by WP1-3 or no [illegible]		General Assembly	Keynotes and Lectures -Summerschool like (under coordination of Aude)				packing, leaving
10:00					[illegible] by WP4	organized by WP5	organized by WP6	organized by WP7	
10:45					15 min break for moving between buildings				
11:00				hackathons with participat[illegible] of all organiz[illegible] by WP1	Inter[illegible]tion: e.[illegible] Spee[illegible]dating	hackathons with participation of all organized by WP1-3		Demos	
12:00					Lunch				
13:00									
14:00				Sh[illegible] presen[illegible]ons of the [illegible]ailable [illegible]	hackathons with participation of all organized by WP1-3		Planning for the next year	Lesson learned, Wrap-up	
15:00									
16:00				hackathons with participation of all organized by WP1-3			hackathons with participation of all organized by WP1-3	packing, leaving	
17:00									
18:00									
19:00	Welcome evening			evening events (some evenings with nice dinners, but also pizza night and some partys)					
20:00									
21:00									
22:00									

Draft

Become a part of the euROBIN network!

FundingBox

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Universität Bremen

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