

Artificial intelligence, Data and Robotics ecosystem

<https://adra-e.eu/>

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between European ADR
Initiatives**

**Deliverable N°2.1: Report on online repository of
ADR related projects for mutual
learning Part 1**

Lead partner: University of Twente

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² **R**: Report, **DEC**: Websites, patent filling, videos; **DEM**: Demonstrator, pilot, prototype; **OTHER**: Software Tools

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Document summary

Deliverable 2.1 concerns identifying the most relevant European and national initiatives related to AI, Data and Robotics as described in Task 2.1. This report is an interim report to summarize the work done so far and provide an overview of the next steps.

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1. Introduction

The goal of WP 2 is threefold: 1) to raise awareness between ADR communities of major relevant research, innovation and infrastructure development activities being implemented in the adjacent areas as European or national initiatives; 2) to identify and capitalize on the synergies between relevant European and national initiatives and; 3) to support the identification of the most promising cross-disciplinary initiatives in close interaction and collaboration with WP1 (Task 1.1).

In order to achieve these goals, the initial step involves identifying the most relevant European and national initiatives related to AI, Data and Robotics (ADR) as described in Task 2.1. Subsequently, this process will result in the development of an ADR cartography, an open online repository hosted on the Adra-e we-platform. This report summarizes the steps taken in order to identify the relevant initiatives and work done so far towards the development of the ADR cartography. It highlights the modest advancements, constrained by unforeseen delays, with the substantial work still planned for the upcoming months. As such, this report should be considered as an interim report.

The report is divided in 4 subsections (sections 2.1 to 2.4). First an introduction is given on the concept of mapping and its significance. Then, an overview of existing examples is presented including the lessons learned from these examples, followed by a first draft or iteration of mapping the most relevant initiatives in ADR. This report concludes by posing several open questions and outlines the next steps to be undertaken.

2. Mapping of major relevant ADR initiatives

This section covers the work done so far to map the major relevant ADR initiatives. This involved understanding the concept of mapping and identifying the main users of the mapping including their specific needs, as well as, identifying existing initiatives that map the developments in the field of AI, data or robotics. Not many of these examples focus on the integration of the different technologies, which will be the focus of this mapping. The frequently used EU overview was used as a starting point.

2.1 Introduction

To commence task 2.1 of work package 2, our initial focus is to grasp the concept of mapping and its significance. We also aim to identify the main users of the mapping activities in order to meet their needs. To accomplish this, we have adopted the following practical definition of mapping:

Mapping = Systematically collecting and organization of information to support the user in making decisions on policy and strategy and present the information in a simple, visual way.

There are already many initiatives that map (or are mapping) the major European and/or national developments in the field of AI, data or robotics. However, not many of these focus on the integration of the different technologies. Nevertheless, these examples can still serve as a valuable source of information. In the next section (section 2.2), some of the identified examples are shown including our main observations.

To understand the significance of this mapping activity, we engaged in discussions with several key people and organisations in the field of AI, Data and Robotics, including: David Bisset (euRobotics, RODIN), Maurits Butter (RODIN, RI4EU, BOWI), Christophe Leroux (euRobotics, DIH RIMA), Thomas Hahn (BDVA), Petri Myllymaki (ELLIS), Arnold Smeulders (ELLIS), Morten Irgens (CLAIRE), Stefano Stramiglioli (DIH-HERO), representatives of several EDIH's, Gabriel Gonzalez

Castane (AI4Europe, AI-on-Demand), Alin Albu-Schaeffer (euROBIN), Willem Jonker (EIT Digital). Through these discussions, it became evident that the use of the cartography will depend on the user and their requirements. As shown in table 1, different users have different needs. Following these discussions and voting procedures during several events (Adra-e consortium meeting in Paris, VISION meeting in Brussels, ERF/euRobotics meeting in Odense, RODIN meeting in Oslo), the main users identified for this mapping activity are: 1) the Adra community and 2) public authorities/ organizations.

Additionally, we asked at the Adra-e conference meeting what they, as an Adra community member, would need from the mapping. Top voted answers included: 1) understanding the European complexity, 2) analyse links between projects, organizations, companies and 3) overview. Consequently, the presented information in the cartography will provide a more generalized, high-level overview.

Table 1: Users and their possible requirements of ADR cartography

User	Needs
Adra community	Identify partners, develop strategies
Public authorities / organizations	Evaluate policies, identify strategic investments
SMEs	Benchmarking their business, find possible market partners, identify cheap shared infrastructures
Large companies	Identify strategic investments, identify strategic enabling technologies, identify possible markets
Network organizations	Identify partners, identify possible markets, find shared infrastructures
Knowledge organizations	To find EU-partners for R&D, market unique infrastructures and expertise, find student exchange partnerships

2.2 Existing examples

There are already many initiatives that map (or are mapping) the major European and/or national developments in the field of AI, data or robotics. However, not many of these focus on the integration of the different technologies. Nevertheless, these examples can still serve as a valuable source of information. These examples are collected in this document including the main observations per example (see annex 1).

2.3 First iteration of mapping ADR initiatives

Based on the collected examples and the discussions with several key people, we started with a first draft of a cartography. We have decided to start with the overview picture of the EU as this provides a recognizable start. This picture and the developments are collected (see annex 2).

In order to determine the relevant IAs and RIAs for this first draft, we have used the following procedure. We used the three keywords AI, Data and Robotics to search in the portal of the EU to find the relevant funding schemes. Only closed calls were taken into account and those with a deadline from 2018 onwards. Furthermore, the projects were selected from the funding schemes that had an average budget of more than 10 M. These can also be found in annex 2. This Excel file also includes contact information of relevant EU networks (programs, large PPPs and associations).

Furthermore, to stimulate the exchange of ideas and improve the interaction with other important European networks, we joined their events, participated in their Workshops, and gave joint presentations about European ADR-mapping (e.g. during the European Robotics Forum ERF2023 of euRobotics in Odense, the joint meeting of RODIN/RI4EU/DIH-HERO/RIMA/agROBOfood, DIH², Trinity) in Oslo, and the VISION ICT-48 community workshop in Brussels).

2.4 Next steps

The main next steps for this task are listed below:

- 1) Increase the level of detail in the pictures shown of the first draft. In addition to the level of detail also to be included are the national initiatives.
- 2) Actively link to other initiatives who are working on mapping, such as Vision and contact the AI-on-Demand platform to determine how we can collaborate.
- 3) We organized a meeting across the different work packages to identify the different cartography efforts and determine how these can be linked. Based on these discussions, it seems evident that a closer collaboration is possible between WP2, WP4 and WP6 as shown in the figure below.

MAPPING INITIATIVES WITHIN ADRA-E

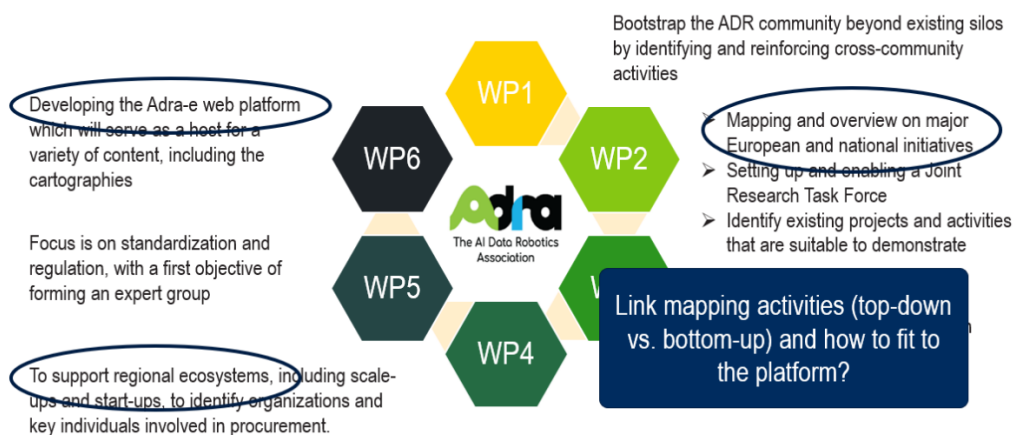


Figure 1 Notes from the meeting we organized across the different WPs to identify the various cartography efforts and identify possible links between these activities.

Both the regional ecosystems of WP4 and the major initiatives of this task need to be merged with the Adra-e web-platform. Simultaneously, end-users should be able to update their information on the platform. This results in two different information streams as shown in figure 2 and different challenges. On the one hand we want to be able to control the mapping put on a platform in order to keep the overview clear and unbiased, while, on the other hand, the end-user should have freedom to add or update their information. These challenges should be addressed and further discussions between the work packages is planned.

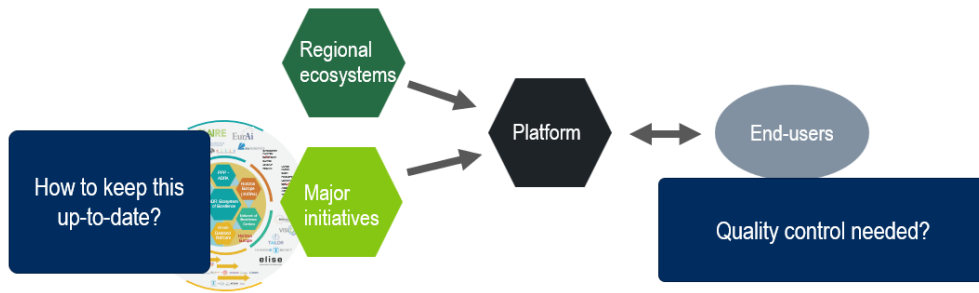


Figure 2 There are two information flows that occur within the platform: one originates from the two work packages, while the other stems from the end-users.

3. Conclusion

This report summarizes the work done so far to identify the relevant national and EU initiatives and the development of the ADR cartography. During this initial phase of the cartography development, the focus was to get an overall picture of the AI, data and robotics ecosystem and identify key figures (useful for the other tasks in WP2). Due to confidentiality reasons, these 'personal' details are not included in this report. For this overall picture, the Eu overview shown by the Eu commission was used as a starting point. A first draft of how this mapping would look like has been made and shared during the consortium meeting in Paris. As next steps we foresee further development of the cartography, as well as, detailed discussed with WP6 to merge it to the Adra-e web-platform and make data easily accessible. These steps were also discussed in section 2.4. Additionally, it will be crucial to have discussion with other initiatives working on similar mapping activities, such as Vision and AI-on-Demand platform.

4. Appendices

4.1 Annex 1: Existing examples and first iteration

There are already many initiatives that map (or are mapping) the major European and/or national developments in the field of AI, data or robotics. However, not many of these focus on the integration of the different technologies.

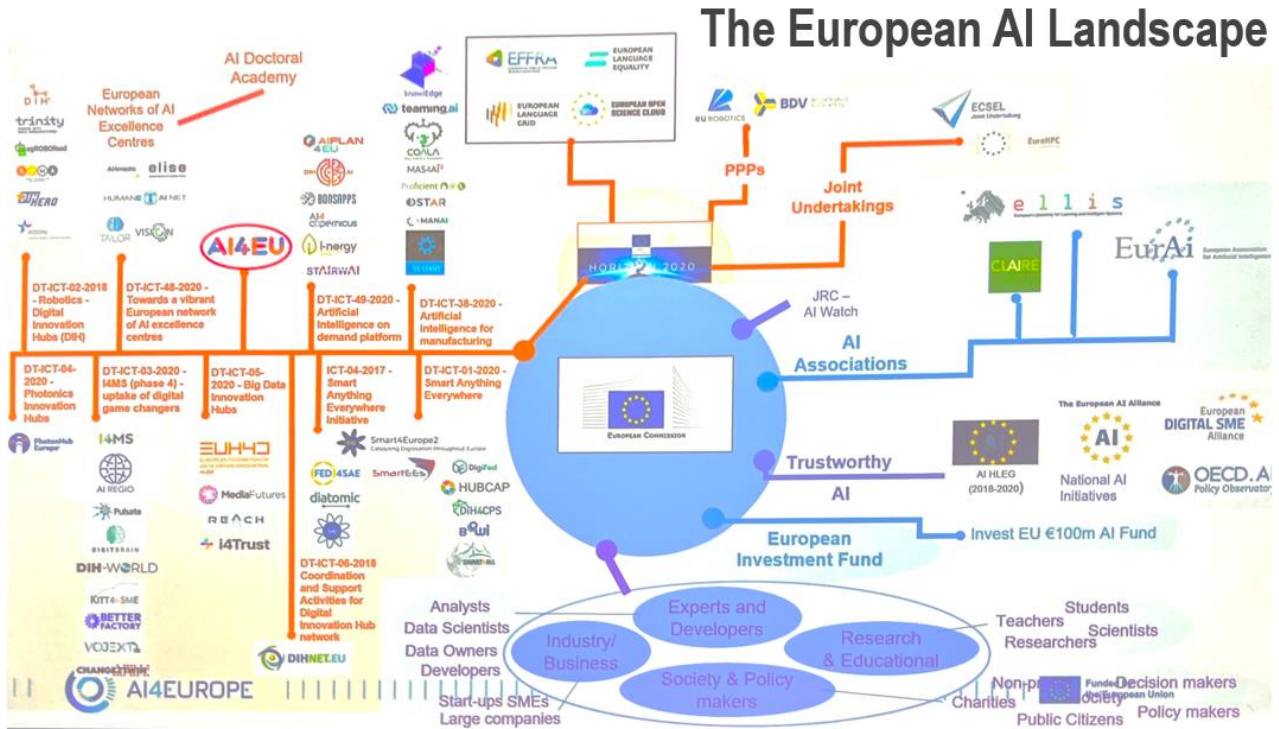


Figure 3 Presented at ERF2023, the focus is on the European AI landscape. It does show the development (over time) of the AI4Europe network. The latter is now known as the AI-on-Demand. This highlights that these pictures develop over time, how do ensure the sustainability of an overview?



Figure 4 Presented at ERF2023, this is a geography map of one consortium (focusing on Robotics and AI) that develops over time. Within no time, this will be outdated. It does show the location of the partners. This raises the question what type of information is essential.

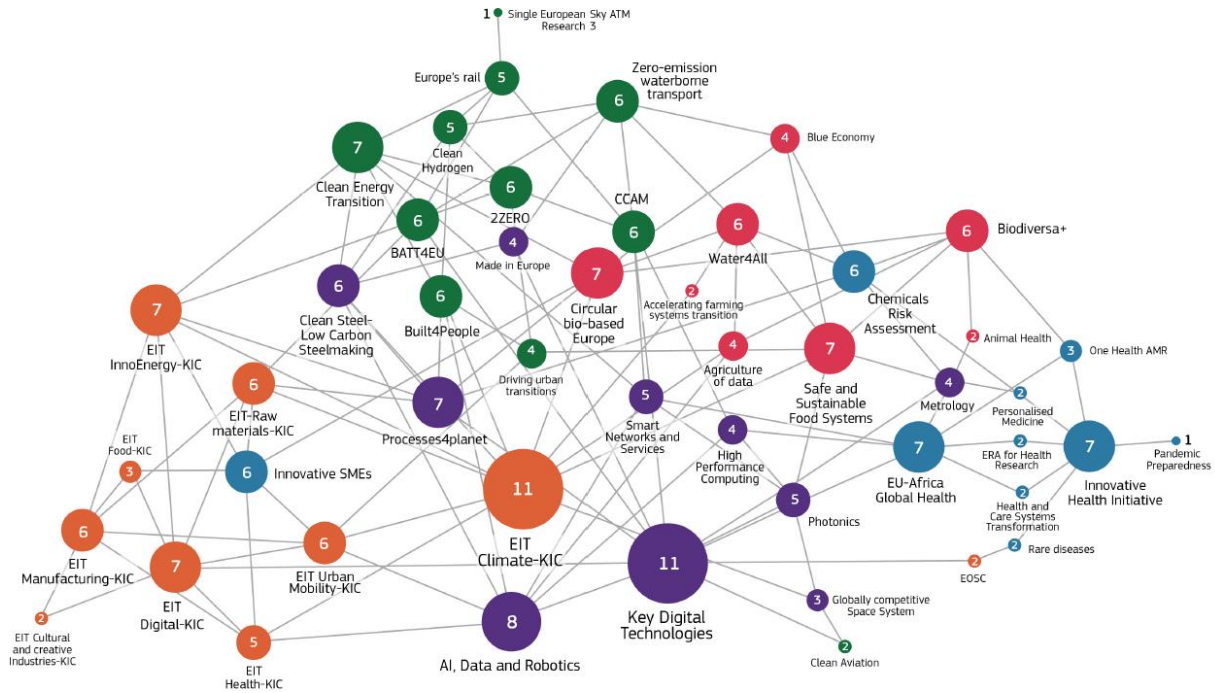


Figure 5 Presented at ERF2023, this example shows a completely different way to represent information. This shows the underlying themes, but it is harder to identify the relations. It also might lack a clear message.

Italian AI ecosystem, by area

Machine Learning

Natural Language

Robotics

Computer Vision

Human-computer Interaction

Speech Processing

Users

Knowledge-Based Systems

Security

Formazione

Recruiting

If you want your company to be listed or removed please write to segretario@aixia.it, updated 16/3/2018, 102 companies www.aixia.it

Figure 6 An Italian example. Raises the question how much detail per country is possible and still adds value? This focuses on AI and is more of an overview/ database, not strategy (companies can ask to be listed or removed). [ref] The European AI Landscape Workshop Report ReportontheEuropeanAILandscapeWorkshop.pdf (adigaskell.org)

And there are many more initiatives relate to mapping (such as: S3 DIH catalogue, DTA catalogue (of 228 EDIHs), DIH network DIH-HERO, DIH network Trinity, DIH network DIH-RIMA, DIH network DIH2, DIH network agROBOfood, RI4EU (HERO, RIMA, Trinity. Squared), AI-on-Demand platform (everything), SmartAgriHubs, SCoDIHnet CLAIRE (AI), ELLIS (AI), I4MS training catalogue, DIHNET community, Digital skills & jobs, Enterprise Europe Network, JRC S3 platform, EU Cluster collaboration platform, European Innovation Council, Fortissimo, Change 2 Twin, DIH4AI – Diiware EPPN infrastuctures, ATI technology centres, Pitcch, Interreg platforms, DITA Digital training atlas, Living in EU, EU-Citizen.Science, EIT-KICs platforms, SmartCities marketplace, DigitalHealthEurope, International Data Spaces).

As most of the shown examples are not straightforward or simple, we started with the EU overview and expanded on the various segments. The ‘database’ behind this is shown in the next annex.



Figure 7 First draft of an overview of AI, Data and Robotics ecosystem in Europe, organized by the relevant EU instruments.

4.2 Annex 2: Database

In order to select the relevant EU projects for the segment IA/RIAs, calls were selected based on three keywords (data, robotics and AI). Furthermore, if the deadline of the call is from 2018 onwards and average budget is more than 10M, the projects are included. The included calls were:

Call	Abbreviation
ECSEL-2018-1-IA	ECSEL-2018-1-IA
ECSEL-2019-1-IA	ECSEL-2019-1-IA

ECSEL-IA	ECSEL-2020-1-IA
Central repository of digital pathology slides to support the development of artificial intelligence tools	IMI2-2019-18-01
Large-scale, cross-border demonstration of connected and highly automated driving functions for passenger cars	DT-ART-06-2020
Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all	DT-ART-04-2019
H2020-ECSEL-2018-2-RIA	ECSEL-2018-2-RIA
H2020-ECSEL-2018-2-RIA-Special-Topic	ECSEL-2018-2-RIA-Special-Topic
ECSEL-2019-2-RIA	ECSEL-2019-2-RIA
ECSEL-2020-2-RIA	ECSEL-2020-2-RIA
Demonstration pilots for implementation of personalised medicine in healthcare	SC1-BHC-25-2019
Pilot lines for large-part high-precision manufacturing (IA 50%)	DT-FOF-10-2020
Smart and healthy living at home	DT-TDS-01-2019
Artificial Intelligence	ICT-26-2018-2020
Transparent & Accessible Seas and Oceans: Towards a Digital Twin of the Ocean	LC-GD-9-3-2020
Secure and resilient Artificial Intelligence technologies, tools and solutions in support of Law Enforcement and citizen protection, cybersecurity operations and prevention and protection against adversarial Artificial Intelligence	SU-AI02-2020
Development of a platform for federated and privacy-preserving machine learning in support of drug discovery	IMI2-2018-14-03
Preventing and fighting extreme wildfires with the integration and demonstration of innovative means	LC-GD-1-1-2020
Refurbishment and re-manufacturing of large industrial equipment (IA)	DT-FOF-06-2019
HPC and Big Data enabled Large-scale Test-beds and Applications	ICT-11-2018-2019
Mining big data for early detection of infectious disease threats driven by climate change and other factors	SC1-BHC-13-2019
Establishing and operating a pilot for a Cybersecurity Competence Network to develop and implement a common Cybersecurity Research & Innovation Roadmap	SU-ICT-03-2018
ERA-NET Cofund action on raw materials	SC5-36-2020
HORIZON-KDT-JU-2021-2-RIA-Focus Topic 1-Processing solutions for AI at the edge addressing the design stack and middleware	HORIZON-KDT-JU-2021-2-RIA-Focus-Topic-1
FAIR and open data sharing in support to European preparedness for COVID-19 and other infectious diseases	HORIZON-INFRA-2021-EMERGENCY-01
Robotics - Digital Innovation Hubs (DIH)	DT-ICT-02-2018
Prototyping a European interoperable Electronic Health Record (EHR) exchange	SC1-DTH-08-2018
Digital diagnostics – developing tools for supporting clinical decisions by integrating various diagnostic data	SC1-BHC-06-2020
Technologies and solutions for data trading, monetizing, exchange and interoperability (AI, Data and Robotics Partnership) (IA)	HORIZON-CL4-2022-DATA-01-04
Exploiting the full potential of in-silico medicine research for personalised diagnostics and therapies in cloud-based environments	SC1-DTH-07-2018
Big data solutions for energy	DT-ICT-11-2019

Trust & data sovereignty on the Internet (RIA)	HORIZON-CL4-2021-HUMAN-01-04
AI for the smart hospital of the future	DT-ICT-12-2020
Interdisciplinary digital twins for modelling and simulating complex phenomena at the service of research infrastructure communities	HORIZON-INFRA-2021-TECH-01-01
Digital solutions and e-tools to modernize the CAP	RUR-20-2018
AI enhanced robotics systems for smart manufacturing (AI, Data and Robotics - Made in Europe Partnerships) (IA)	HORIZON-CL4-2021-TWIN-TRANSITION-01-01
Multi-use of the marine space, offshore and near-shore: pilot demonstrators	BG-05-2019
Cybersecurity in the Electrical Power and Energy System (EPES): an armour against cyber and privacy attacks and data breaches	SU-DS04-2018-2020
Towards a vibrant European network of AI excellence centres	ICT-48-2020
Methods for exploiting data and knowledge for extremely precise outcomes (analysis, prediction, decision support), reducing complexity and presenting insights in understandable way (RIA)	HORIZON-CL4-2022-DATA-01-0
Mapping and improving the data economy for food systems	HORIZON-CL6-2021-GOVERNANCE-01-18

Resulting in the following relevant Eu projects (note that more detailed information is found in an Excel spreadsheet, but only some key information is shown here).

Acronym	Keyword	Title	Area
ADACORSA	robotics; data	Airborne data collection on resilient system architectures	Information and communication technologies
agROBOfood	robotics	agROBOfood: Business-Oriented Support to the European Robotics and Agri-food Sector, towards a network of Digital Innovation Hubs In Robotics	Information and communication technologies
AI-Mind	data	Intelligent digital tools for screening of brain connectivity and dementia risk estimation in people affected by mild cognitive impairment.	Health, demographic change and wellbeing
AI-PRISM	AI; data	AI Powered human-centred Robot Interactions for Smart Manufacturing	Digital, Industry and Space
AI-TWILIGHT	data	AI powered digital twin for lighting infrastructure in the context of front-end Industry 4.0	Information and communication technologies
AI4CSM	data	Automotive Intelligence for/at Connected Shared Mobility	Information and communication technologies
AI4DI	robotics; AI; data	An artificial intelligence boost for European industry	Information and communication technologies
AI4EU	robotics; AI; data	A European AI On Demand Platform and Ecosystem	Information and communication technologies

AI4Media	robotics; AI; data	A European Excellence Centre for Media, Society and Democracy	Information and communication technologies
AICCELERATE	robotics; AI; data	AI Accelerator – A Smart Hospital Care Pathway Engine	Information and communication technologies
AIDOaRT	data	AI-augmented automation for efficient DevOps, a model-based framework for continuous development at RunTime in cyber-physical systems	Information and communication technologies
AIDPATH	robotics; AI; data	Artificial Intelligence-driven, Decentralized Production for Advanced Therapies in the Hospital	Information and communication technologies
ANDANTE	robotics; data	Ai for New Devices And Technologies at the Edge	Information and communication technologies
APPLAUSE	robotics; data	Advanced packaging for photonics, optics and electronics for low cost manufacturing in Europe	Information and communication technologies
Arrowhead Tools	robotics; data	New tools to help the engineering industry put IoT to smart use	Information and communication technologies
BD4NRG	data	BD4NRG: Big Data for Next Generation Energy	Information and communication technologies
BD4OPEM	data	Big Data for OPen innovation Energy Marketplace	Information and communication technologies
BEYOND5	robotics; data	Building the fully European supply chain on RFSOI, enabling New RF Domains for Sensing, Communication, 5G and beyond	Information and communication technologies
BIGPICTURE	data	Central Repository for Digital Pathology	Health, demographic change and wellbeing
BioDT	data	Biodiversity Digital Twin for Advanced Modelling, Simulation and Prediction Capabilities	Research infrastructures
BY-COVID	data	Beyond COVID	Research infrastructures
CHARM	robotics; data	Challenging environments tolerant Smart systems for IoT and AI	Information and communication technologies
CLEVER	AI	Collaborative edge-cCloud continuum and Embedded AI for a Visionary industry of the future	Digital, Industry and Space
COMP4DRONES	robotics; data	Framework of key enabling technologies for safe and autonomous drones' applications	Information and communication technologies

CONCORDIA	data	Cyber security cOMpeteNCe fOr Research and InnovAtion	Information and communication technologies
CONVERGING	AI; data	Social industrial collaborative environments integrating AI, Big Data and Robotics for smart manufacturing	Digital, Industry and Space
CoroPrevention	data	Personalized Prevention for Coronary Heart Disease	Health, demographic change and wellbeing
CPS4EU	robotics; data	Applying CPS technologies in modern manufacturing	Information and communication technologies
CREXDATA	data	Critical Action Planning over Extreme-Scale Data	Digital, Industry and Space
CYBELE	data	FOSTERING PRECISION AGRICULTURE AND LIVESTOCK FARMING THROUGH SECURE ACCESS TO LARGE-SCALE HPC-ENABLED VIRTUAL INDUSTRIAL EXPERIMENTATION ENVIRONMENT EMPOWERING SCALABLE BIG DATA ANALYTICS	Information and communication technologies
CyberSec4Europe	data	Cyber Security Network of Competence Centres for Europe	Information and communication technologies
DAIS	data	Distributed Artificial Intelligent Systems	Information and communication technologies
Data4Food2030	data	Pathways towards a fair, inclusive and innovative Data Economy for Sustainable Food Systems	Food, Bioeconomy Natural Resources, Agriculture and Environment
DATAMITE	AI	DATA Monetization, Interoperability, Trading & Exchange	Digital, Industry and Space
DECIDER	data	Improved clinical decisions via integrating multiple data levels to overcome chemotherapy resistance in high-grade serous ovarian cancer	Health, demographic change and wellbeing
DeepHealth	data	Deep-Learning and HPC to Boost Biomedical Applications for Health	Information and communication technologies
DIAMONDS	data	Diagnosis and Management of Febrile Illness using RNA Personalised Molecular Signature Diagnosis	Health, demographic change and wellbeing
DIH-HERO	robotics	Digital Innovation Hubs in Healthcare Robotics	Information and communication technologies

DIH2	robotics	A pan-European Network of Robotics DIHs for Agile Production	Information and communication technologies
DT-GEO	data	A Digital Twin for GEOphysical extremes	Research infrastructures
eBRAIN-Health	data	eBRAIN-Health - Actionable Multilevel Health Data	Research infrastructures
ECHO	data	European network of Cybersecurity centres and competence Hub for innovation and Operations	Information and communication technologies
ELISE	robotics; AI; data	European Learning and Intelligent Systems Excellence	Information and communication technologies
Energy ECS	robotics; data	Smart and secure energy solutions for future mobility	Information and communication technologies
ERA-MIN3	robotics	Raw Materials for the Sustainable Development and the Circular Economy	Climate action, environment, resource efficiency and raw materials
EVOLVE	data	HPC and Cloud-enhanced Testbed for Extracting Value from Diverse Data at Large Scale	Information and communication technologies
ExtremeXP	data	EXPeriment driven and user eXPerience oriented analytics for eXtremely Precise outcomes and decisions	Digital, Industry and Space
FAME	AI	Federated decentralized trusted dATA Marketplace for Embedded finance	Digital, Industry and Space
FIRE-RES	robotics	Innovative technologies and socio-ecological-economic solutions for fire resilient territories in Europe.	Climate action, environment, resource efficiency and raw materials
FIRELOGUE	robotics	Cross-sector dialogue for Wildfire Risk Management	Climate action, environment, resource efficiency and raw materials
Fluently	AI; data	Fluently - the essence of human-robot interaction	Digital, Industry and Space
GaN4AP	robotics; data	GaN for Advanced Power Applications	Information and communication technologies
GATEKEEPER	robotics; data	SMART LIVING HOMES - WHOLE INTERVENTIONS DEMONSTRATOR FOR PEOPLE AT HEALTH AND SOCIAL RISKS	Health, demographic change and wellbeing

HELIAUS	robotics; data	tHErmaL vIision AUgmented awarenesS	Information and communication technologies
Hi-Drive	data	Addressing challenges toward the deployment of higher automation	Smart, green and integrated transport
HiEFFICIENT	data	Highly EFFICIENT and reliable electric drivetrains based on modular, intelligent and highly integrated wide band gap power electronics modules	Information and communication technologies
HosmartAI	robotics; AI; data	Innovative platform for robotics and AI technology integration	Information and communication technologies
HumanE-AI-Net	robotics; AI; data	HumanE AI Network	Information and communication technologies
ID2PPAC	robotics; data	Integration of processes and moDules for the 2 nm node meeting Power Performance Area and Cost requirements	Information and communication technologies
ILIAD	data	INTEGRATED DigitaL Framework FOR Comprehensive MARITIME DATA AND INFORMATION SERVICES	Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy
IMOCO4.E	data	Intelligent Motion Control under Industry 4.E	Information and communication technologies
INFINITECH	data	Tailored IoT & BigData Sandboxes and Testbeds for Smart, Autonomous and Personalized Services in the European Finance and Insurance Services Ecosystem	Information and communication technologies
InSecTT	robotics; data	Intelligent Secure Trustable Things	Information and communication technologies
InteropEHRate	data	Interoperable EHRs at user edge	Health, demographic change and wellbeing
interTwin	data	An interdisciplinary Digital Twin Engine for science	Research infrastructures
IoTwinS	data	Distributed Digital Twins for industrial SMEs: a big-data platform	Information and communication technologies

IPC	data	individualizedPaediatricCure: Cloud-based virtual-patient models for precision paediatric oncology	Health, demographic change and wellbeing
iRel40	robotics; data	Intelligent Reliability 4.0	Information and communication technologies
IT2	robotics; data	IC Technology for the 2nm Node	Information and communication technologies
iToBoS	data	Intelligent Total Body Scanner for Early Detection of Melanoma	Health, demographic change and wellbeing
LEVEL-UP	robotics	Protocols and Strategies for extending the useful Life of major capital investments and Large Industrial Equipment	Advanced manufacturing and processing
LEXIS	data	Large-scale EXecution for Industry & Society	Information and communication technologies
MADEin4	robotics; data	Novel metrology technologies to revolutionise the European semiconductor industry	Information and communication technologies
MAESTRIA	data	Machine Learning Artificial Intelligence Early Detection Stroke Atrial Fibrillation	Health, demographic change and wellbeing
MATQu	data	Materials for Quantum Computing	Information and communication technologies
MELLODDY	data	MachinE Learning Ledger Orchestration for Drug Discovery	Health, demographic change and wellbeing
MOOD	data	MOnitoring Outbreak events for Disease surveillance in a data science context	Health, demographic change and wellbeing
Moore4Medical	robotics; data	Accelerating Innovation in Microfabricated Medical Devices	Information and communication technologies
MUSICA	robotics	Multiple-use-of Space for Island Clean Autonomy	Food security, sustainable agriculture and forestry, marine and maritime and inland water research

			and the bioeconomy
NewControl	robotics; data	Integrated, Fail-Operational, Cognitive Perception, Planning and Control Systems for Highly Automated Vehicles	Information and communication technologies
NextPerception	robotics; data	NextPerception - Next generation smart perception sensors and distributed intelligence for proactive human monitoring in health, wellbeing, and automotive systems	Information and communication technologies
NGIO Entrust	data	NGIO Entrust	Digital, Industry and Space
NIVA	data	A New IACS Vision in Action	Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy
ODIN	robotics; AI; data	Leveraging AI based technology to transform the future of health care delivery in Leading Hospitals in Europe	Information and communication technologies
PENELOPE	robotics	Closed-loop digital pipeline for a flexible and modular manufacturing of large components	Advanced manufacturing and processing
PHArA-ON	robotics; data	Pilots for Healthy and Active Ageing	Health, demographic change and wellbeing
PIN3S	robotics; data	Building efficient pilot production line for 3-nanometre transistors	Information and communication technologies
PISTIS	AI	Promoting and Incentivising Federated, Trusted, and Fair Sharing and Trading of Interoperable Data Assets	Digital, Industry and Space
PLATOON	data	Digital PLATform and analytic TOOlS for eNergy	Information and communication technologies
Power2Power	robotics; data	Next-generation silicon-based power electronics for decarbonisation in mobility, industry and grid	Information and communication technologies
PRIMAGE	data	PRedictive In-silico Multiscale Analytics to support cancer personalized diaGnosis and prognosis, Empowered by imaging biomarkers	Health, demographic change and wellbeing
PROFID	data	Implementation of personalised risk prediction and prevention of sudden cardiac death after myocardial infarction	Health, demographic

			change and wellbeing
PROGRESSUS	robotics; data	Highly efficient and trustworthy electronics, components and systems for the next generation energy supply infrastructure	Information and communication technologies
RECLAIM	robotics	RE-manufaCturing and Refurbishment LARge Industrial equipMent	Advanced manufacturing and processing
RIMA	robotics	Robotics for Infrastructure Inspection and Maintenance	Information and communication technologies
RODIN	robotics	Robotics Digital Innovation Network	Information and communication technologies
SHAPES	robotics; data	Smart and Healthy Ageing through People Engaging in Supportive Systems	Health, demographic change and wellbeing
SHOW	robotics	SHared automation Operating models for Worldwide adoption	Smart, green and integrated transport
SILVANUS	robotics	Integrated Technological and Information Platform for wildfire Management	Climate action, environment, resource efficiency and raw materials
SLEEP REVOLUTION	data	Revolution of sleep diagnostics and personalized health care based on digital diagnostics and therapeutics with health data integration	Health, demographic change and wellbeing
SMART BEAR	robotics; data	Smart Big Data Platform to Offer Evidence-based Personalised Support for Healthy and Independent Living at Home	Health, demographic change and wellbeing
Smart4Health	data	Citizen-centred EU-EHR exchange for personalised health	Health, demographic change and wellbeing
SPARTA	data	Strategic programs for advanced research and technology in Europe	Information and communication technologies
STARLIGHT	AI; data	Sustainable Autonomy and Resilience for LEAs using AI against High priority Threats	Secure societies - protecting freedom and security of Europe and its citizens

StorAlge	robotics; data	Embedded storage elements on next MCU generation ready for AI on the edge	Information and communication technologies
SYNERGY	data	Big Energy Data Value Creation within SYnergetic enERGY-as-a-service Applications through trusted multi-party data sharing over an AI big data analytics marketplace	Information and communication technologies
TAILOR	robotics; AI; data	Foundations of Trustworthy AI - Integrating Reasoning, Learning and Optimization	Information and communication technologies
TEMA	data	Trusted Extremely Precise Mapping and Prediction for Emergency Management	Digital, Industry and Space
TEMPO	robotics; data	Technology and hardware for neuromorphic computing	Information and communication technologies
TRANSACT	robotics; data	Transform safety-critical cyber-physical systems into distributed solutions for end-users and partners	Information and communication technologies
TRANSFORM	robotics; data	Trusted European SiC Value Chain for a greener Economy	Information and communication technologies
TREEADS	robotics	A Holistic Fire Management Ecosystem for Prevention, Detection and Restoration of Environmental Disasters	Climate action, environment, resource efficiency and raw materials
TRINITY	robotics	Digital Technologies, Advanced Robotics and increased Cyber-security for Agile Production in Future European Manufacturing Ecosystems	Information and communication technologies
UltimateGaN	robotics; data	Research for GaN technologies, devices, packages and applications to address the challenges of the future GaN roadmap	Information and communication technologies
UNITED	robotics	Multi-Use offshore platforms demoNstrators for boosting cost-effective and Eco-friendly proDuction in sustainable marine activities	Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy
UPCAST	AI	Universal Platform Components for Safe-Fair Interoperable Data Exchange, Monetisation and Trading	Digital, Industry and Space
VALU3S	robotics; data	Verification and Validation of Automated Systems' Safety and Security	Information and communication technologies
VEO	data	Versatile Emerging infectious disease Observatory	Health, demographic

			change and wellbeing
VirtualBrainCloud	data	Personalized Recommendations for Neurodegenerative Disease	Health, demographic change and wellbeing
VISION	robotics; AI; data	Value and Impact through Synergy, Interaction and coOperation of Networks of AI Excellence Centres	Information and communication technologies
VIZTA	robotics; data	Innovative image sensors to drive 3D imaging forward	Information and communication technologies
YESvGaN	data	Vertical GaN on Silicon: wide band gap power at silicon cost	Information and communication technologies

And relevant programs, large PPPs and associations are listed below. Details of key figures are excluded from this list.

Program, large PPP, Associations	Project	AI	Data	Robotics	Research	Innovation
ADRA - AI-Data-Robotics Association (PPP)		AI	Data	Robotics	Research	Innovation
euRobotics				Robotics	Research	Innovation
BDVA - Big Data Value Association			Data		Research	Innovation
CLAIRE		AI			Research	Innovation
ELLIS		AI			Research	Innovation
EurAI		AI			Research	Innovation
INSIDE Industry Association		AI	Data			Innovation
	AI4Europe (CSA)	AI				
	Adra-e (CSA)	AI	Data	Robotics		Innovation
	gaia-x		Data			Innovation
	FiWare		Data			
International Data Spaces Association			Data			
European Data Centre Association						
	Structura-X					
Made in Europe Industry 4.0			Data			
EIT Manufacturing			Data			Innovation
EIT Digital		AI	Data			Innovation



ETP 4HPC - European Technology Platform High Performance Computing			Data			
EuroHPC - High Performance Computing			Data			
IPCEI Cloud and Edge Infrastructure and services			Data			
IPCEI micro-electronics			Data			
Enterprise Europe Network						
European Innovation Council						
	SmartAgri Hubs					
	DIH-HERO (IA)			Robotics		Innovation
	DIH RIMA (IA)			Robotics		Innovation
	DIH agROBOfood (IA)			Robotics		Innovation
	DIH-^2 (IA)			Robotics		Innovation
	DIH Triniy (IA)			Robotics		Innovation
EDIH network - European Digital Innovation Hubs						Innovation
	DTA - Digital Transformation Accelerator (CSA)	AI	Data	Robotics		Innovation
	DIH4AI Diiware					
	I4MS					
NLAIC - Dutch AI Coalition		AI			Research	Innovation
Dutch national Smart Industry program					Research	Innovation