



MANOLO

CLOUD-EDGE EFFICIENT & TRUSTWORTHY AI

Welcome to the 2nd issue of the MANOLO newsletter!

Summary

The 2nd MANOLO newsletter highlights progress in Trustworthy and Efficient AI. The MANOLO Framework is guided by research, expert interviews, and a survey with stakeholders from various countries. The project participated in major events like IEEE CASE, and ADRF24, showcasing advancements in AI efficiency, ethical frameworks, and neuromorphic computing. Articles detailing five of seven EU-guided Trustworthy AI requirements have been published, with work continuing on the remaining two collaborative workshops with sister projects addressed achieving trustworthy AI in the cloud-edge continuum.

Trustworthy Efficient AI for the Cloud-edge Deep Dive

Insights from Research and Engagement

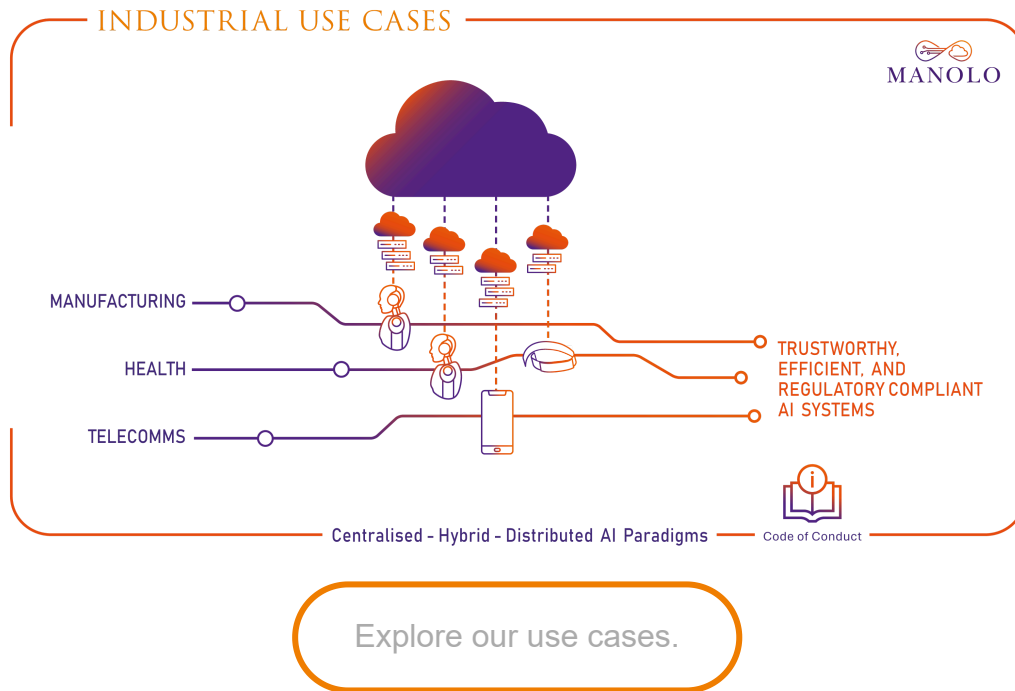
Desk research and partner expertise were validated through **interviews with experts from the Ethical and Industrial Advisory Board (EIAB) and key CEC stakeholders**. An online survey with participants from various countries, including Technology and Ethics experts, Policy Makers, Regulators, and Citizens, **explored their needs, challenges, perceptions, and socio-economic contexts in the AI-powered CEC value chain**. Insights from research and interviews informed the survey design and the **findings on AI efficiency and trustworthiness, supported the co-design and development of the MANOLO System Architecture**.

Project Use Cases

The **MANOLO** project explores innovative methodologies and applications of cloud-edge Artificial Intelligence (AI) to enhance human-centred, trustworthy, and energy-

use cases are outlined:

- [robotics in healthcare](#),
- [robotics in industry](#),
- [mobile computer vision for secure photo organization](#),
- and [auditory stimulation for memory consolidation](#).



Project Highlights

2nd Consortium meeting among robots!

The MANOLO project held its 2nd consortium meeting on July 3-4, 2024, in Barcelona, Spain, hosted by [PAL Robotics](#) and their [TIAGo robot](#) welcomed all participants in their premises. Participants engaged in collaborative sessions to co-design solutions, share insights, and define requirements, functionalities, milestones, and reporting needs.



As the meeting's closure, PAL Robotics provided an impressive demonstration of their **robots' diverse capabilities, showcasing applications in logistics, healthcare, and even concert support.**

PAL's team stated: *"PAL Robotics is proud to be part of the MANOLO project, which will showcase the integration of our TIAGo robots in manufacturing and healthcare. This collaboration not only demonstrates the practical application of dynamic AI algorithms but also significantly advances the role of robotics in diverse operational environments, positively impacting both our company and the global tech landscape."*

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Learn more on our 2nd Press Release.

Second Z-Inspection conference

The Second World Z-inspection® Conference took place on 23-24 August 2024, in Hamburg, Germany. The event addressed critical challenges facing AI systems today, including **navigating complex technical, ethical, regulatory frameworks, and adapting to evolving standards**. The conference united diverse AI professionals to share insights and innovative approaches for advancing trustworthy AI, highlighting the value of collaboration in this dynamic field.

MANOLO project to ensure AI trustworthiness and legal compliance development and operation by design will adhere to **Trustworthy AI principles** via the adaptation of the **Z-inspection®** methodology and will serve to help AI systems conform to the new AI Act regulation.



A special thank you, to [ARCADA](#) and [Q-PLAN](#), for presenting the MANOLO project, showcasing our innovative solutions in Trustworthy AI systems.

[Learn more here](#)

MANOLO at IEEE CASE conference

The project revolutionizes AI efficiency with cutting-edge tools for diverse environments. Key innovations include model compression, meta-learning, and neuromorphic models. At [IEEE CASE 2024](#), our partner [PAL Robotics](#), highlighted how [TIAGo](#) robots bring MANOLO's dynamic AI algorithms to life in Manufacturing and Healthcare, (MANOLO's Use Case), showcasing remarkable real-world adaptability.



[See more details here.](#)

The Artificial Intelligence (AI) Symposium

The Artificial Intelligence (AI) Symposium was hosted under our partner [Laurea University of Applied Sciences](#) and [Nazareth University](#), in Finland. It was delightful to share MANOLO's vision with participants drawn from various countries across EU and USA and to discuss how the EU guidelines for trustworthy AI and the AI Act will be considered.



[Learn more here](#)

ADRF24 Event

Our partner [PAL Robotics](#), organised at the event [ADRF24](#), a workshop titled "Generative AI for Intelligent Interactive Robots". This workshop examined how **generative AI can enhance robot's capacity for natural communication and adaptability with people**. It also focused on exploring how robots play a more **essential role across diverse sectors such as healthcare and customer service**, the demand for sophisticated interaction capabilities continues to rise. Many thanks to our coordinator [Dr. Ricardo Simon Carbajo](#), from [CeADAR](#) Ireland, for his insightful presentation.



MANOLO 3rd hybrid project meeting in Nuremberg, Germany!

The MANOLO project organised its 3rd consortium meeting on December 3-4, 2024, in Nuremberg, Germany. The meeting, hosted by [Fraunhofer IIS](#), brought together all the project partners to discuss progress and future directions towards the implementation of the project. Two highlights of the meeting was the introduction of the new **Project Officer (PO)** and a **workshop with the members of the MANOLO Industrial and Ethical Advisory Board**.



The meeting included also a tour at Fraunhofer's premises, showcasing the unique technologies developed by our partner. During the tour, the consortium visited two key stations, starting from the **L.I.N.K. Test and Application Center**. Following that, MANOLO partners explored demonstrators featuring Fraunhofer's advancements in **Edge AI and Neuromorphic Computing**.

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Read our 3rd Press Release

Project Articles

MANOLO has published detailed articles based on the **EU's Ethics Guidelines for Trustworthy AI**, which are translated into seven key requirements: Human Agency and Oversight, Technical Robustness and Safety, Privacy and Data Governance, Transparency, Diversity and Fairness, Societal Well-being, and Accountability. Detailed articles for the first five requirements have already been published.



Explore our articles

Our promotional video explains in a creative icon way, the main concept, objectives and targets of MANOLO. Click here to delve into Efficient and Trustworthy AI. Watch it here:



Synergies with other projects & initiatives

Among the goals, MANOLO will work on teaming up with other relevant projects. This collaboration aims to share knowledge and make our shared goals easier to achieve.

ADRF24 Event

On November 4th, 2024, five sister projects [AI-DAPT](#), [EXTRA-BRAIN](#), [MANOLO](#), [PANDORA](#), and [RAIDO](#) co-organised a workshop titled “**Achieving Efficient and Trustworthy AI in the Cloud-Edge Continuum**,” as part of the [ADRF24 event](#).

In collaboration with the dynamic AI community, the workshop **spotlighted practical limitations and key enablers** for achieving efficient, trustworthy AI across the cloud-edge continuum. Topics included data quality, monitoring, benchmarking, explainable AI, self-adaptation, user trust, and environmental impact.



Finally, the workshop examined how the **AI Act will influence the implementation and deployment of AI systems in the cloud-edge continuum, focusing on both technical and legal implications.**

Explore more on our Press Release

Publications

- At our partners [LAUREA](#) journal: **"Towards the co-design, assessment, and validation of trustworthy AI within the MANOLO project"** Authors: [Paulinus Ofem](#), [Emilia Risu](#), [Sari Sarlio-Siintola](#)
- From our partner [TUBS](#): **"Towards Smart Microfarming in an Urban Computing Continuum"** Authors: Marla Grunewald, [Mounir Bensalem](#), [Jasenka Dizdarevic](#) and Admela Jukan.
- At the 13th Conference on Artificial Intelligence ([SETN 2024](#)), our partner [National Center for Scientific Research "Demokritos"](#) presented a pivotal paper titled **"On the Reliability of Artificial Intelligence Systems"**.
- Under the VECOMP 2024 VALE Track Workshop on Value Engineering in AI, at 27th European Conference on Artificial Intelligence ([ECAI 2024](#)) our partner's team, ["NCSR "DEMOKRITOS"](#) presented: **"Values-aligned, Responsible Sharing (VaRS): A Methodology and Blueprint"**. Authors: [Alexandros Nousias](#), [Maria Dagioglou](#), and [Georgios Petasis](#).

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team, "[NCSR "DEMOKRITOS"](#) presented at the HAI5.0 Workshop: "[Human-Aware Design for Transferring Knowledge During Human-AI Co-Learning](#)".
Authors: [Dimitrios Koutrintzes](#), [Christos Spatharis](#), and [Maria Dagioglou](#).

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