

Encouraging AI Adoption by SMEs: Opportunities and Contributions by the ICT49 Project Cluster

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Outline

- Barriers for AI adoption in SMEs
- The AloD Platform and the ICT49 Cluster
- EU Projects Reinforcing the AloD
(AIPlan4EU • AI4Copernicus • BonsAPPs • DIH4AI • I-ENERGY • StairwAI)
- ICT49 Open Calls
- Conclusions and Lessons Learnt

- **High costs** and **lack of resources** to be invested: Deploying AI solutions requires investments to be made by companies; SMEs rarely have such resources, with AI still remaining a costly system.
- **Uncertainty** about AI benefits: since AI adoption may not deliver immediate benefits and productivity gains, thus raising sunk costs before a growth potential is achieved, SMEs are reluctant to uptake innovations that could result in losses on a short run due to limited revenues and cash flow.
- **Lack of trained employees**: training employees to interact with AI-based solutions and seeing them as complementary tools rather than competitors is crucial to allow SMEs to experience growth.
- **Reputational and legal risks**: these concern the ethical risks connected to AI, with SMEs being often too slow to react to the damages that might be caused by such reputational and legal harms.
- **Lack of data culture**: SMEs are less well prepared to valorise their data, and, although they produce a great volume and variety of data, they often lack the ability to collate, manage and protect them.
- **Weak data management practices**: SMEs often lack data management policies and practices that could allow them to use complex AI and ML systems.
- **Uncertainty** about legal requirements and lack of common standards.
- **Regulatory barriers** discouraging the entry of new players in the field.

The AI-on-Demand Platform

Mission: Create a thriving European AI research ecosystem driven by AI excellence, through a channel that fosters collaboration, reproducibility and experimentation, while maximising academic, social and industrial impact.

The AloD platform can be used by the AI community to:

- ✓ Share AI-related knowledge, assets, services or tools.
- ✓ Make use of the numerous available resources.
- ✓ Learn about the potential and opportunities of AI applications.
- ✓ Engage with other peers and experts.

The ICT49 project cluster

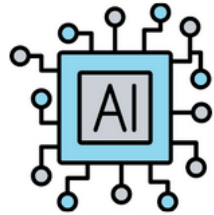


- 6** projects • **72** organisations • **17** countries
• a **broad network** of SMEs, DIHs, regional and national associations and researchers



AI4Copernicus

AI4Copernicus Aims



AI on Demand Platform aims to be the one-stop shop for AI methods, datasets and community in Europe



EO data and services have reached a significant level of maturity via the **DIAS (Data & Information Access Services)** platforms and produce value in various domains

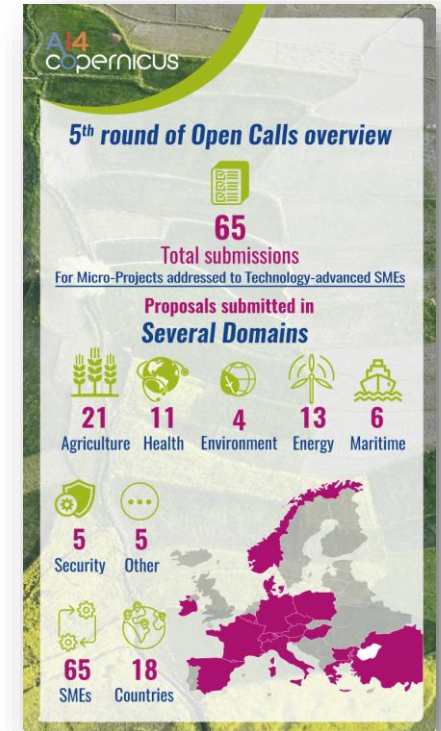
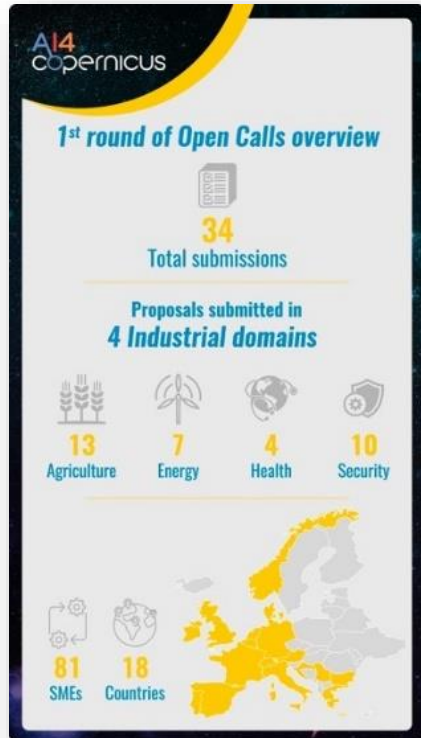


AI4Copernicus aims to bridge these two worlds:
Make the AI on Demand Platform, the platform of choice for users of Copernicus data along the value chain (scientists, SMEs, non-tech sector)

Objectives:

- ✓ To expand and deepen the integration of AloD with DIAS (Data and Information Access Services) platforms to enrich the AloD service offering and enable far-reaching innovation
- ✓ To kickstart the innovation cycle by incentivising diverse communities pertinent to the AloD platform and Copernicus to solve real problems of business and societal value.
- ✓ To drive the evolution, uptake and impact of all involved platforms (AloD, WEKEO, CREODIAS).

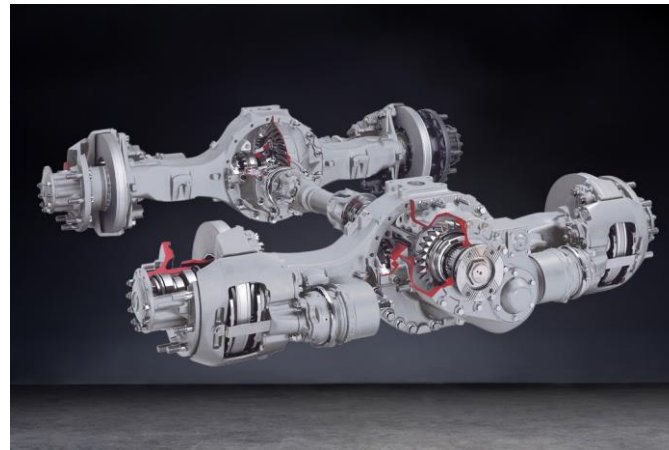
AI4Copernicus



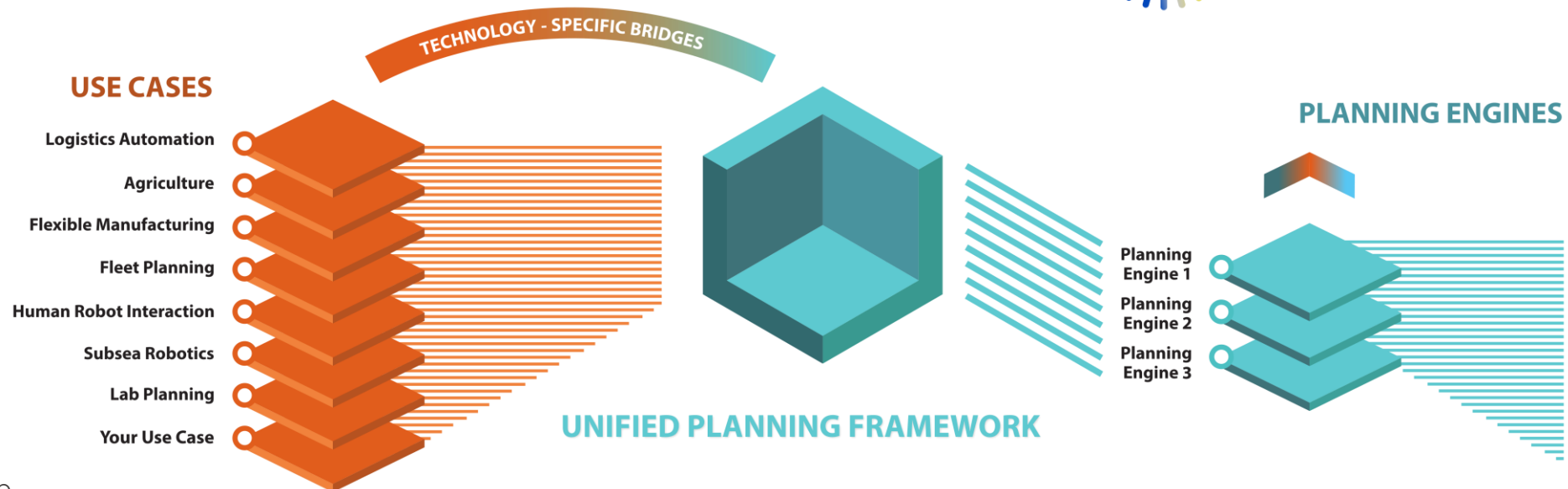
AI4Copernicus Open Calls:

- ✓ A series of 5 open calls involving consortia of SMEs, single company projects, and citizens.
- ✓ Focusing on (but not limited to) the 4 industrial domains of Agriculture, Energy, Security, and Health.
- ✓ Experiments, Use-cases based on citizen social challenges, Micro-projects for testing, etc.
- ✓ 40 SMEs and 27 projects.

- **AI Planning:** reason on a predictive model of a system and **decide how and when to act in order to achieve a desired objective**
- General approach with **applications from many different areas**
- Barriers for practical application tackled by the project:
 - hard to identify the appropriate technique
 - no shared interfaces
 - no easy access to expertise on how to encode domain knowledge into a planner



- **Unified Planning python library:** uniform, user-centric framework to access the existing planning technology
- **Technology-specific bridges** connect the framework with established industry standards
- **Guidelines** on how to use this technology and **case studies**
- **Planning as a service** on the European AloD platform





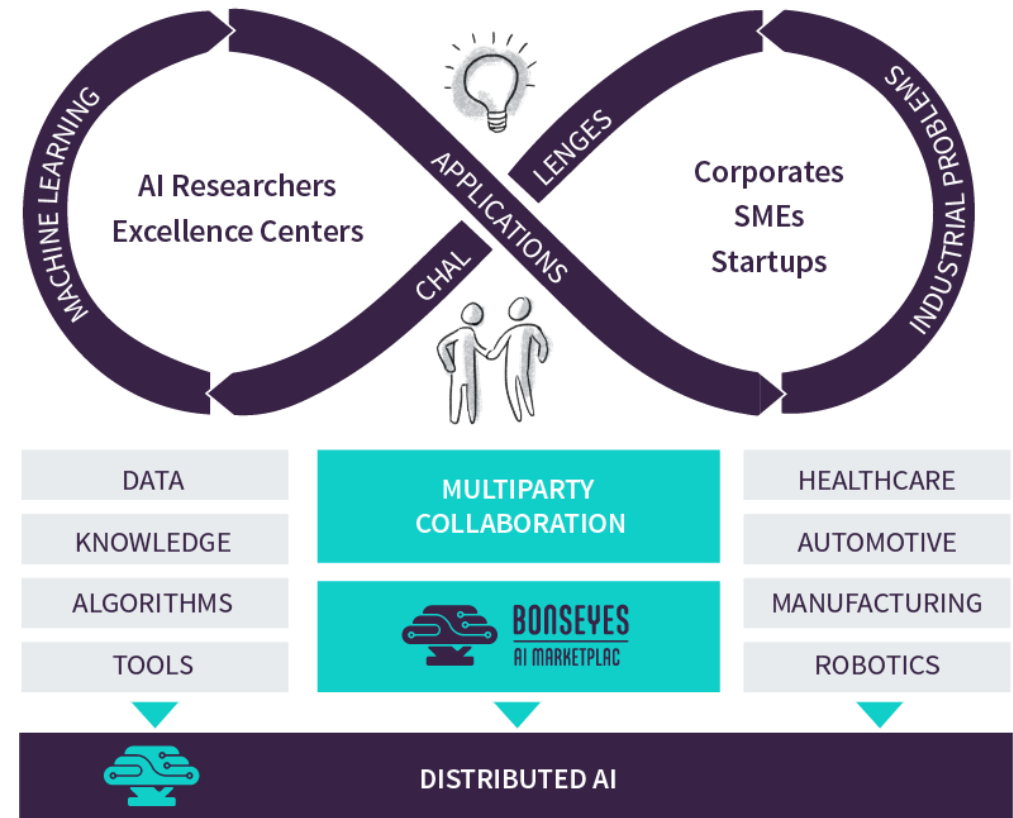
AI-as-a-Service for the Deep Edge

BonsAPPS helps SMEs digitalise by allowing them to access, implement and make use of AI in an easy and affordable way.

Leveraging on a prior EU H2020 project (Bonseyes Marketplace 2018-2020), BonsAPPs results will increase AI usage by enterprises and SMEs which lack internal innovation capabilities by providing tools to build **end-to-end, containerized, ready-to-integrate and re-usable solutions**.

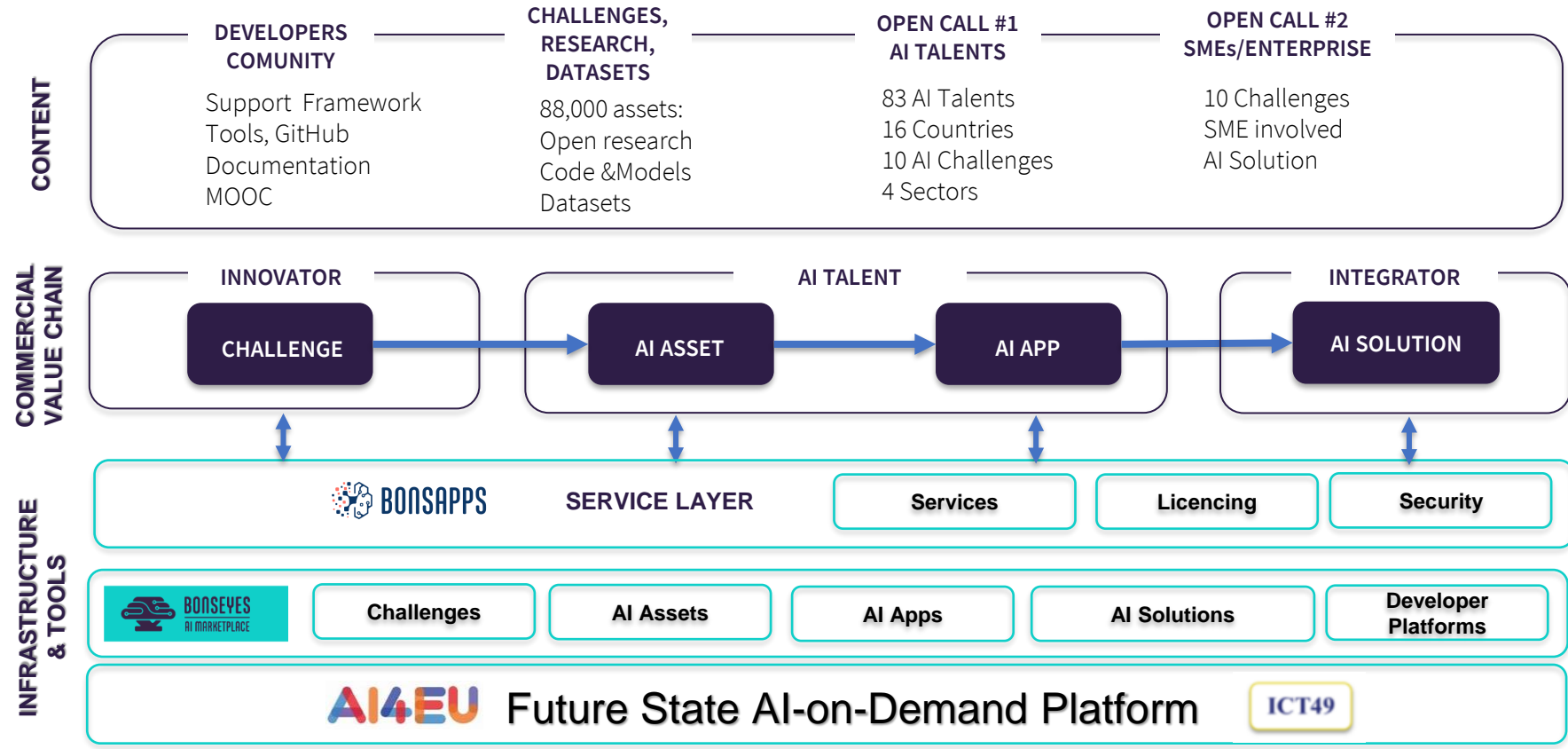
BonsAPPs modular services cover experimentation, benchmarking, deployment, and secure licensing of AI solutions at the Deep Edge

Content and services are available on the Bonseyes AI marketplace and will **provide content /interoperate with AI-on-Demand platform**.





BonsAPPs | Unique Value Proposition





The DIH4AI “AI on-demand platform for regional interoperable Digital Innovation Hubs Network” has clear objectives that rely on three fundamental pillars

GENERAL INFORMATION



36 months



Coordinated by POLIMI



12 partners



5 DIHs



5 million funding



2 Open Calls

OBJECTIVES



Build a network of AI-on-demand innovation and collaboration platforms for DIHs, **interoperable with the AIoD platform**



Supporting the **joint development and provision of services** through a sustainable network of regional AI DIHs and targeting local SMEs, Public Administrations and GovTech agencies.

KEY PILLARS



Technological Open Platform for AI DIHs



Regional and European Interoperability Framework

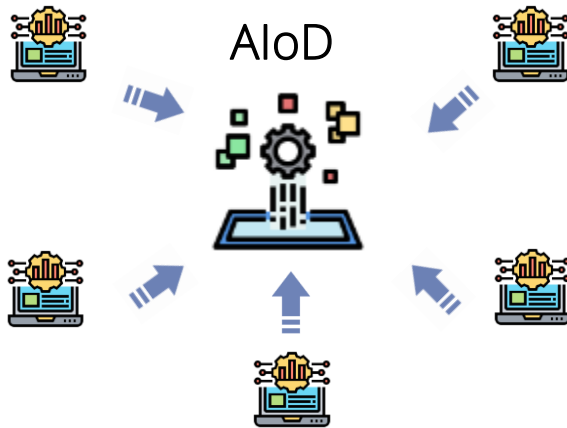


Methodological Framework for DIHs collaboration



The DIH4AI project wants to enrich, feed and improve the **AI-on-Demand** platform through two main means: **integration of regional platforms** and **development of AI experiments**

Platform enrichment

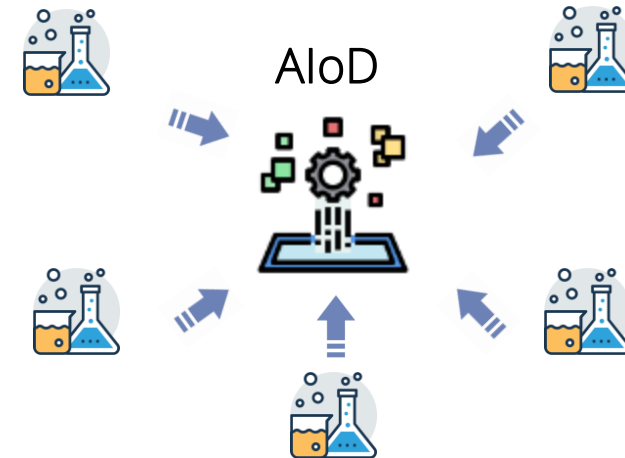


Regional DIH platforms such as the **DIHIWARE** are currently working within our project in order to make them **interoperable** with the AIoD



DIHIWARE

AI experiments development



Each DIH within the project is currently working and developing **AI experiments** that will be uploaded on the **AIoD**. The AI experiments will provide AI assets and services for SMEs and PS organisation



I-ENERGY

Artificial Intelligence for Next Generation Energy

I-ENERGY

Started: 01/01/2021

Duration: 36 Months

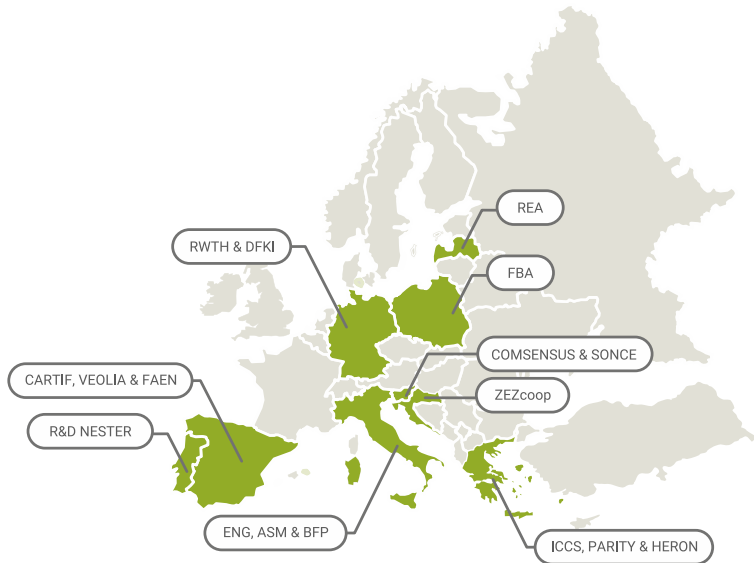
Coordinator: Institute of Communication and Computer Systems (ICCS)

European Union's Horizon 2020 Research and Innovation Programme

Budget: 4,999,844.50 €

Grant Agreement Number: 101016508

ICT-49-2020 Artificial Intelligence on demand platform



Vision:

Deliver an energy-specific open modular framework for supporting AI-on-Demand in the energy sector (AI4 Energy)

Based on state-of-the-art AI and Data technologies



Energy Commodities Networks: AI for energy networks optimised operation



Distributed Energy Resources: AI for RES generation, buildings, districts, communities



Energy Efficiency and Non-energy related Services: AI enabling synergies / implications on other energy and non-energy domains

Open Calls:

- 2 M € Financial Support to Third Parties (FSTP) & Technical Mentoring
- 25 Technology Transfer Projects

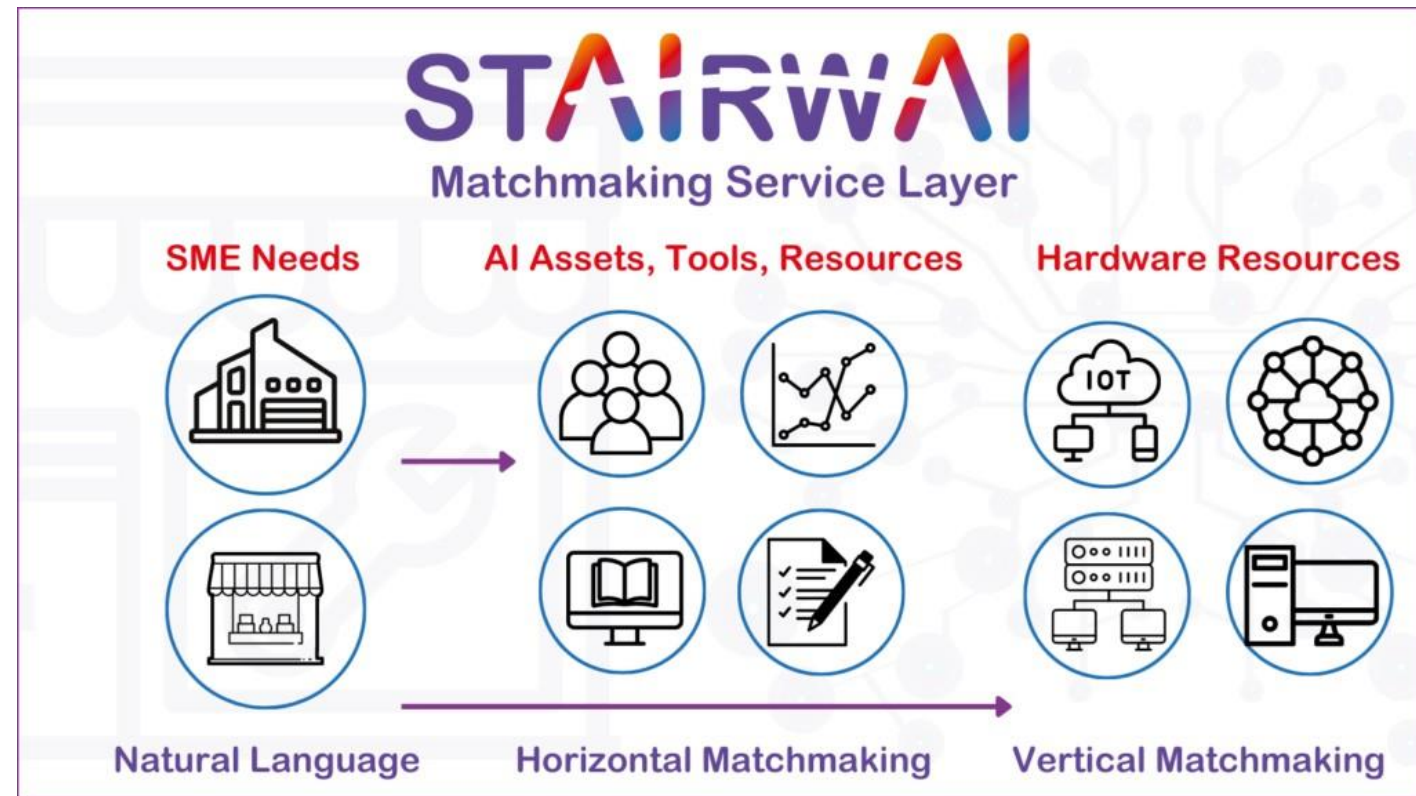
- ❑ Reinforce the service layer of the AIoD platform
 - ❑ Reach out to new user domains and boost the use of the platform through use cases and small-scale experiments
- Enable operational/efficiency benefits for energy operators and energy consumers/citizens
 - Reduce environmental footprint of the energy value chain
 - Mitigate climate change
 - Enhance social cohesion of local communities
 - Create new green jobs

StairwAI

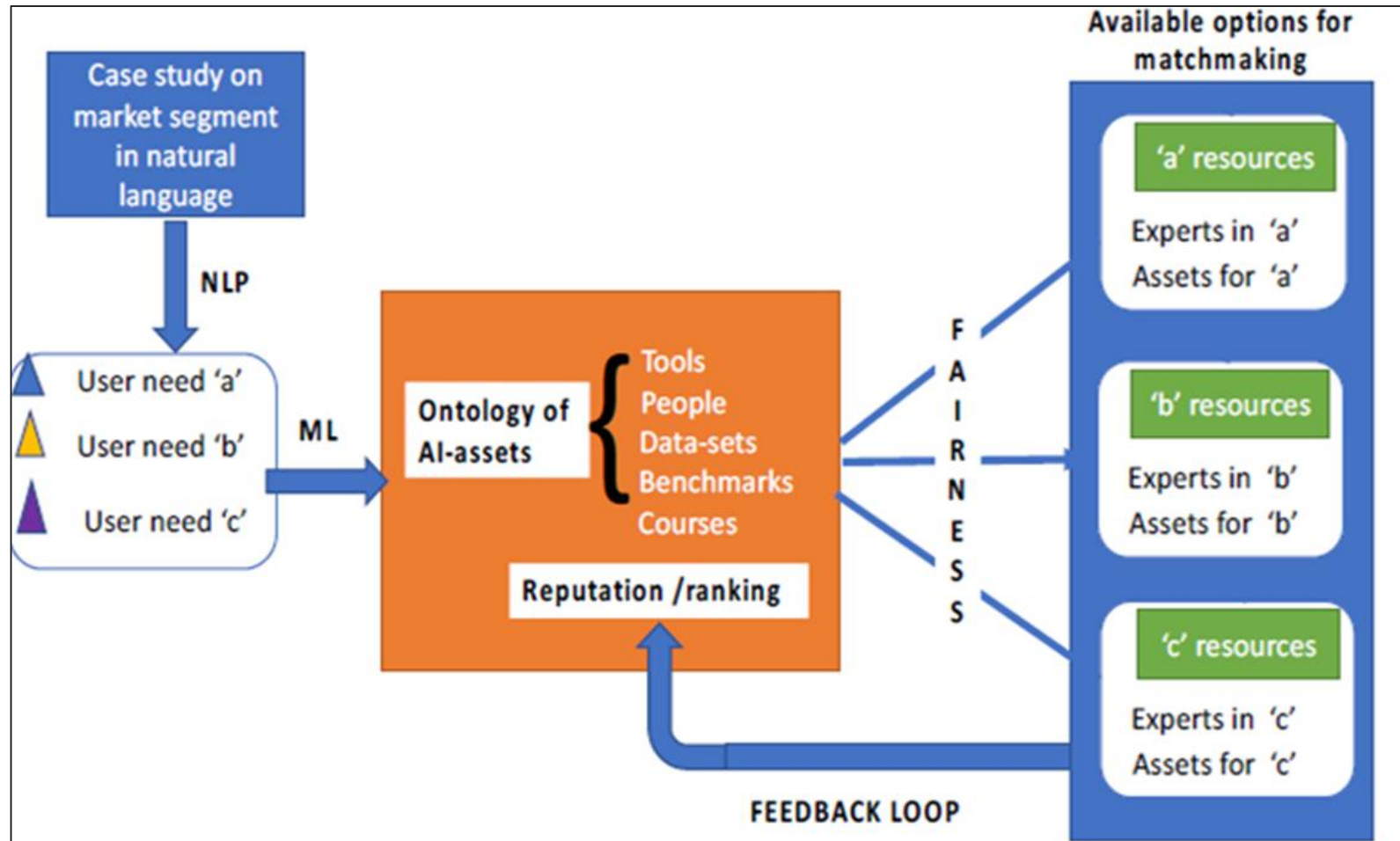
StairwAI is targeting **low-tech users** with the goal of facilitating their engagement on the AI-on-Demand Platform

New Service Layer

- A **multi-lingual** interaction layer: Users can engage with the Platform in their own language
- A **horizontal matchmaking** service: Automatic discovery of AI assets (tools, data sets, AI experts, consultants, papers, courses etc.) meeting the user business needs
- A **vertical matchmaking** service: Dimension and provide hardware resources through a proper hardware provider (HPC, Cloud and Edge infrastructure)



StairwAI

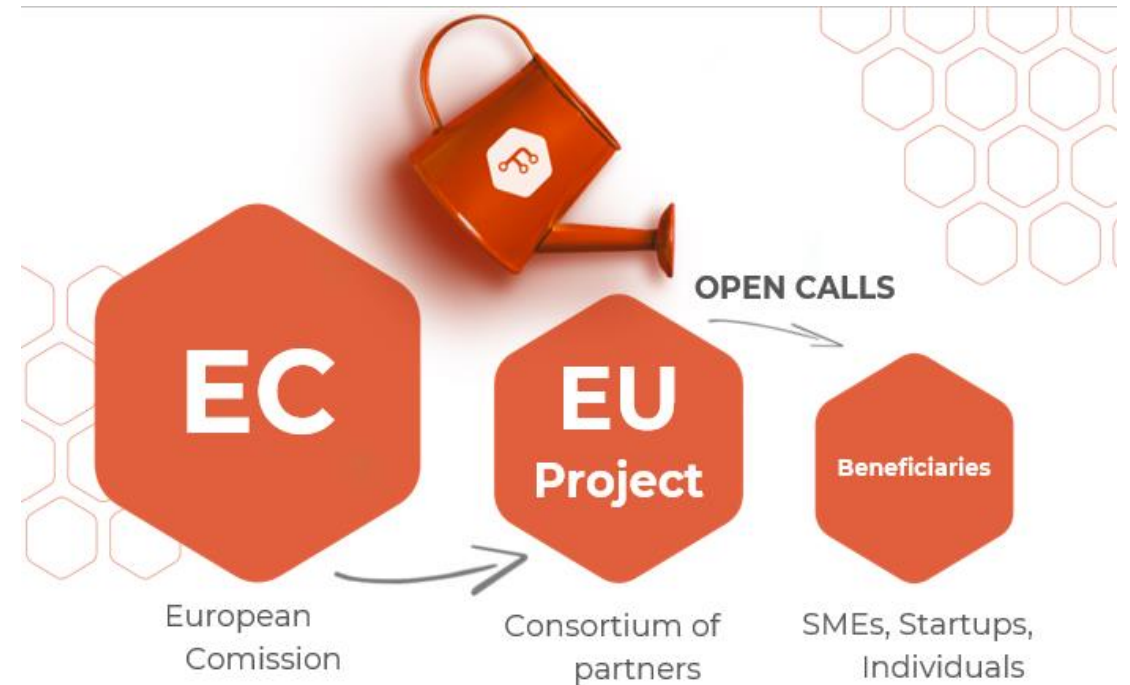
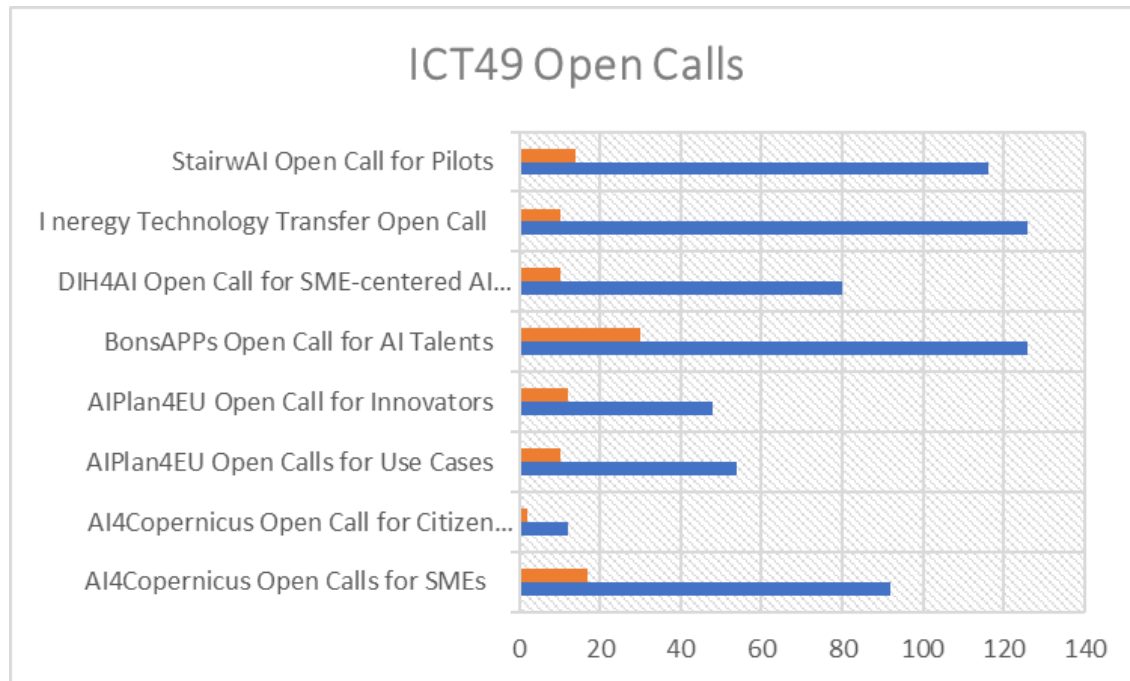


StairwAI's two main objectives are to provide a **service layer** for the AloD Platform and to use AI to enhance the Platform. In particular, the service layer will comprise multi-lingual interaction; **AI asset discovery; community profiling; people-to-people matching**; hardware dimensioning; physical resource provider marketplace; and trustworthy AI and fairness.

Schematic of Horizontal Matchmaking Service

All ICT49 projects have been executing FSTP (financial support to third parties) and OC in line with the conditions set out in part K of the General Annexes.

A minimum of EUR 2 million in funding per project has been dedicated to it, with **grants between EUR 50 to 200k per third party**. Cascade funding usually involves not only funding but also (technical and business) mentoring, relevant networking possibilities and the opportunity to implement a technical solution that is relevant to them and could have been more difficult (or impossible) to implement otherwise.





- **Legal type of applicants:** companies (particularly SMEs), natural/individual persons (AI4Copernicus 2nd OC for Citizens, AIPlan4EU OCs for Use Cases, BonsAPPs OC for AI Talents), Research and Technology Centers (BonsAPPs 1st OC for AI Talents) and DIHs (DIH4AI 1st OC for extending the DIH Network ecosystem with DIHs providing technical support)
- **Role of applicants:** i. Technology providers / Innovators (AI4Copernicus OCs for SMEs, AIPlan4EU Innovators OC, BonsAPPs AI Talents OC, DIH4AI 1st OC, I-ENERGY 1st OC), ii. Adopter / Use Cases / Challenge owners (AI4Copernicus OCs for Citizens, AIPlan4EU Use Case OCs, and StairwAI OC for low-tech SMEs)
- **Sector/Vertical:** wide range of sectors including Energy (AI4Copernicus, I-ENERGY), Healthcare (AI4Copernicus, BonsAPPs) and Manufacturing (BonsAPPs, DIH4AI)
- **OC Specific requirements:** testing the tools that are being developed by each project for the AIoD platform, proposed solutions' availability, reuse potential, interoperability, ease of integration
- **Selection Process:** eligibility check and external evaluation (ALL), consensus meetings, interviews (AIPlan4EU), Jury Day (StairwAI)
- **Duration of support programmes:** 6 months (typically)

- The results from the OCs reveal that the AloD platform has relevant potential, yet its strategy and vision must be defined to improve service offers and OC descriptions;
- Without a clear vision, there is the risk that it ends up as a catalogue of outdated or not reusable assets, when it could be an attractive environment for applicants;
- Create a collaborative ecosystem of SMEs in need of support after their participation in the OC projects to be sustainable in a synergistic way with the growth of the AloD platform and the AI4Europe project;
- Enable long-term planning for joining/organising world-class events
- Connect with European SME Associations
- Joint efforts could go beyond dissemination and platform building towards data and tools exchange or running joint calls as happened between BonsAPPs and StairwAI.

Thank You!

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