



Appendice I - Tematiche - Summary of Spoke 4 research activities and projects

Spoke 4 - Cascade Call for PMI
Allocated funds total: 875,976.79 € Allocated funds South: 92,750.48 €
Objective #1: Reinforcement learning for economic transactions
Only South: YES
Allocated funds: 92,750.48 €
Expected number of funded projects: 1
Typology: Use cases
Funding Type: Feasibility Studies
Description of the objective: They are required the analysis and development of highly innovative case studies based on advanced tools of reinforcement learning and online learning in the field of economic transactions (for example, marketing-and-sales, finance). A strong component of innovation is required both in terms of defining the application scenarios and in terms of using advanced techniques. The feasibility study must also include considerations on the software architecture of the system and the computing infrastructures to be used. The development of a proof-of-concept is required.
Objective #2: Fine tuning of LLMs in practical applications
Only South: NO
Allocated funds: 164,889.748 €
Expected number of funded projects: 2 (each funded by at most 82,444.874 €)
Typology: Technology Validation and Testing
Funding Type: Industrial Research and Experimental Development, where the ratio of Experimental Development is not lower than 43%
Description of the objective: The study, development, and experimental analysis of software tools for fine-tuning LLM models and embeddings are required. This activity can start from pre-trained models. The study can be referred to an application area of motivated importance and develop technology limitedly for this. However, an analysis on the extension of the developed technology towards other application areas with similar characteristics is required. It is required that the system developed in the project will be experimentally evaluated in real-world or with dataset generated from real-world settings.



Objective #3: Study of AI applications in health
Only South: NO
Allocated funds: 278,251.452 €
Expected number of funded projects: 3 (each funded by at most 92,750.48 €)
Typology: Use cases
Funding Type: Feasibility Studies
Description of the objective: The analysis and development of highly innovative case studies based on advanced machine learning tools in the health field are required. A strong component of innovation is required both in terms of defining the application scenarios and in terms of using advanced techniques of personalized medicine (including cancer, genomics, sport medicine, surgery, drug design, rehabilitation). The feasibility study must also include considerations on the use of these tools within healthcare facilities and biomedical research. It must also analyze the computing infrastructures to be used. The development of a proof-of-concept is required.
Objective #4: Development of AI technologies for health
Only South: NO
Allocated funds: 82,444.874 €
Expected number of funded projects: 1
Typology: Technology Validation and Testing
Funding Type: Industrial Research and Experimental Development, where the ratio of Experimental Development is not lower than 43%
Description of the objective: The study, development, and experimental analysis of hardware-software tools based on machine learning techniques in the health field are required. The study can be referred to an application area of motivated importance and develop technology limitedly for this. However, an analysis on the extension of the developed technology towards other application areas with similar characteristics is required. It is required that the system developed in the project will be experimentally evaluated in real-world or with dataset generated from real-world settings.



Objective #5: Study of AI applications in multimodal interaction

Only South: NO

Allocated funds: 92,750.48 €

Expected number of funded projects: 1

Typology: Use cases

Funding Type: Feasibility Studies

Description of the objective: The analysis and development of highly innovative case studies based on advanced tools of adaptive AI in the field of human-machine interaction are required. A strong component of innovation is required both in terms of defining the application scenarios and in terms of using advanced techniques. The feasibility study must also include considerations on the use of these tools within concrete application scenarios and the computing infrastructures to be used. The development of a proof-of-concept is required.

Objective #6: Development of AI technologies for multimodal interaction

Only South: NO

Allocated funds: 164,889.748 €

Expected number of funded projects: 2 (each funded by at most 82,444.874 €)

Typology: Technology Validation and Testing

Funding Type: Industrial Research and Experimental Development, where the ratio of Experimental Development is not lower than 43%

Description of the objective: The study, development, and experimental analysis of software tools based on adaptive multimedia models (e.g., images, video, text, voice) or Large Language Models (LLM) or Large Multimedia Models for the optimization of production processes, decision support, and human-machine interaction are required. The adaptation to the context plays a role of particular interest, where quality, strictly linked to the context of use, assumes great relevance in various applications. This activity can start from pre-trained models and possibly propose their customization for a specific application scenario with data collected in the field. The project can be referred to a specific application area and develop technology limitedly for this, however, an analysis is required that demonstrates the possibility of extending the use of the developed technology towards other different application areas, but with similar characteristics. It is required that the system developed in the project will be experimentally evaluated in real-world or with dataset generated from real-world settings.