EU Regulatory Sandboxes for AI (EUSAiR): Profiles and Challenges in Legal Informatics and in AI & Law

This postdoctoral project is part of the EUSAiR initiative ("EU Regulatory Sandboxes for AI" - DIGITAL-2024-AI-ACT-06-SANDBOX). EUSAiR aims to support the implementation of AI regulatory sandboxes across the EU as mandated by the AI Act. The project focuses on providing standardized frameworks, technical and legal capacities, and fostering cooperation among Member States. It also aims to ensure broad access to sandboxes for AI innovators, particularly SMEs and startups, by reducing compliance costs and market barriers. EUSAiR plans to coordinate the implementation of these sandboxes, offer support to national authorities and innovators, develop guidelines, analyze results for future regulations, engage stakeholders, and collaborate with existing AI initiatives. By fostering multi-disciplinary engagement and emphasizing SME access, EUSAiR envisions a network of sandboxes involving various key players in the AI ecosystem. The project's innovative approach incorporates policy advocacy, independent analysis of sandboxes, involvement of large European digital infrastructures, engagement with SMEs and innovation networks, interdisciplinary research competencies, and scalable training models. Additionally, EUSAiR aims to enhance legal certainty, support regulatory compliance, promote accessibility to AI markets, and facilitate cross-border sandbox development while nurturing evidence-based regulatory learning through pilot projects involving SMEs and AI providers. A backbone of the project is synergizing with other Digital Europe initiatives, in particular in regard to the the value of conducting sandbox pilot tests within diverse, large-scale digital infrastructures, mostly of a public nature. This strategy ensures comparative analysis of pilots and fosters an environment where processes can operate independently and effectively engage with national authorities, especially in infrastructures that must function independently of AI-provider contexts.
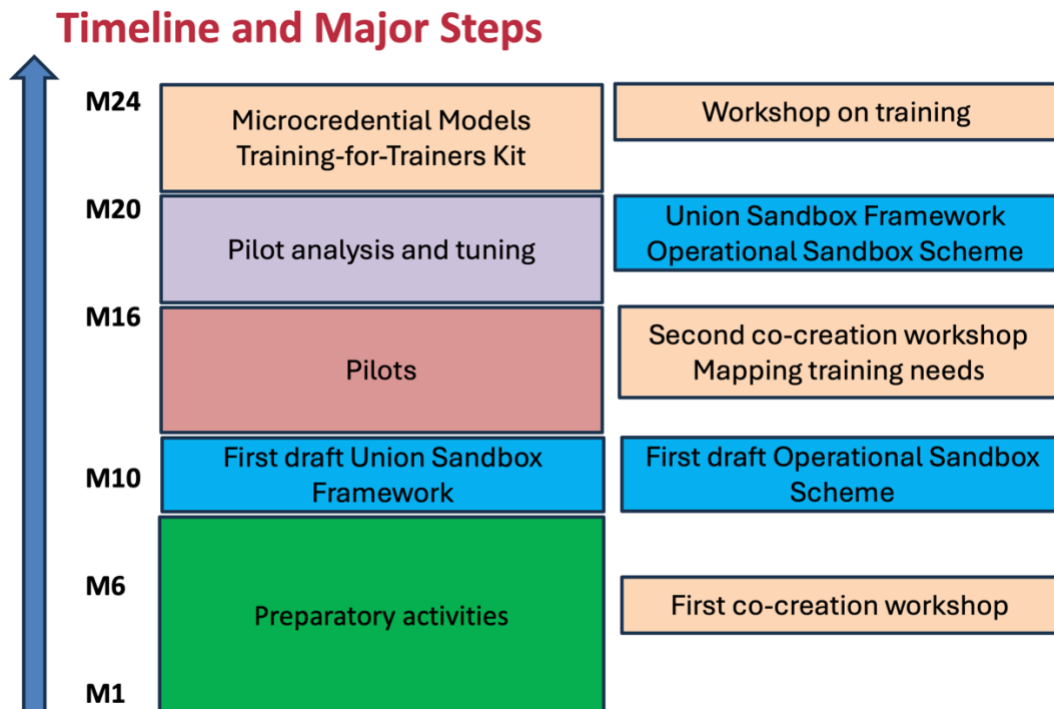
The postdoc will contribute with an expertise in legal informatics, AI and Law, and computer law to work on the following EUSAiR WPs:

- *WP2 - Union Sandbox Framework, Advisory and Regulatory Learning*: WP2 elaborates requirements, common regulatory guidelines, frameworks, and tools for the operation of AI regulatory sandboxes (Union Sandbox Framework), building on the experience from pilot sandboxes. This process will be underpinned by the co-creation process.
- *WP3 - Operational Sandbox Scheme*: WP3 focuses on establishing operational standards, benchmarks, and guidelines to meet the requirements of WP2, ensure compliance with the AI Act and operational processes for AI regulatory sandboxes, including compatibility with HPC infrastructures (Operational Sandbox Scheme).

- ***WP4 - Sandbox Pilots, Tuning and Scaling-up***: This WP will conduct three pilot projects in a secure environment to test the effectiveness of the Sandbox Framework (WP2) Operational Sandbox Scheme (WP3). Average, each pilot will involve at least average 30 AI providers and experiment cross-border cooperation (i.e., each pilot will involve at least one EU member state in addition to the one where the pilot is conducted, and AI providers will be identified in all countries involved).
- ***WP5 - Training***: Training the staff of national competent authorities (NCA) is vital to promote both compliance and innovation. Given the complexity of the AI Act and the objective of AI Regulatory Sandboxes to facilitate innovation, it is essential to understand and address the training needs and expectations of NCA staff. WP5 will start by analysing the training needs. We will then design a train-the-trainer program for national trainers to enable them to equip national competent authorities' personnel with skills on the AI Act and the operation of AI regulatory sandboxes including the Union Sandbox Framework.

The below outlines the major milestones of the project, forming the work plan within which the postdoc is expected to operate, in accordance with the contract duration, under the supervision of the EUSAiR coordinator:

Timeline and Major Steps

M24	Microcredential Models Training-for-Trainers Kit	Workshop on training
M20	Pilot analysis and tuning	Union Sandbox Framework Operational Sandbox Scheme
M16	Pilots	Second co-creation workshop Mapping training needs
M10	First draft Union Sandbox Framework	First draft Operational Sandbox Scheme
M6	Preparatory activities	First co-creation workshop
M1		

More precisely, the postdoc is expected to join the EUSAiR research team in identifying **regulatory standards and compliance methods and in bridging within sandboxes technical and operational solutions with legal requirements**. The identified solutions will

be applied to implement a lifecycle and overall process of sandboxes, which could comprise, for example, the following phases: pre-application, application and selection, preparation, participation, evaluation and exit, and post-participation. Each phase may include specific activities such as early dialogue, guidance services, submission of sandbox applications, onboarding, development and testing of AI systems in the sandbox, monitoring, evaluation, and exiting. The process will be expected to promote transparency, fairness, and equal access, prioritizing SMEs and startups in alignment with the AI Act.