

IRP 3 : Individual Research Project

Topic	Involvement
Machine Learning for Digital Finance	<ul style="list-style-type: none">IRP belongs to WP4 (Blockchain applications)WP Leader: ASE (Bucharest)Three supervisors from secondments: ECB, FRA, and SWE
Objectives	Deliverables
<p>Reinforcement Learning (RL) has become popular for automating uncertain decision-making in complex environments. Deep reinforcement learning can make impressive algorithmic decisions in closed environments, but real-world applications in open environments are harder. This project examines how RL can advance digital finance.</p>	<p>The project will address several RL implementation issues in digital finance. Utility-based RL deliverables will improve financial decision-making by developing multi-criteria analysis, extreme scenarios, and risk management methods. RL in decision-support will be optimised for explainability, regulatory compliance, model abstractions, and human judgement. We will also examine technological challenges like Digital Twin environments, machine learning pipelines, and digital finance ecosystem integration.</p>

IRP 3 TIMELINE

The timeline diagram illustrates the project's progression from M9 to M45, involving four research centers: UTwente, ECB, Fraunhofer, and Swedbank. The timeline is represented by a horizontal axis with markers M9, M21, M33, M39, and M45. UTwente is associated with M9 and M21. ECB is associated with M21 and M33. Fraunhofer is associated with M33 and M39. Swedbank is associated with M39 and M45. Curved arrows indicate the flow between these markers, representing the project's stages: DC starts (M9), Exposure to globally leading central bank, research training on EU principles, supervision (M21), Applied industry-research, contribute to multiple projects on blockchain and decentralized finance (M33), and ESG and credit score modelling (M45). The project ends at M45.

DC starts

ECB
Exposure to globally leading central bank, research training on EU principles, supervision

Fraunhofer
Applied industry-research, contribute to multiple projects on blockchain and decentralized finance

Swedbank
ESG and credit score modelling

DC ends

