

IRP 3 : Individual Research Project

Topic

Machine Learning for Digital Finance

Involvement

- IRP belongs to WP4 (Blockchain applications)
- WP Leader: ASE (Bucharest)
- Three supervisors from secondments: ECB, FRA, and SWE

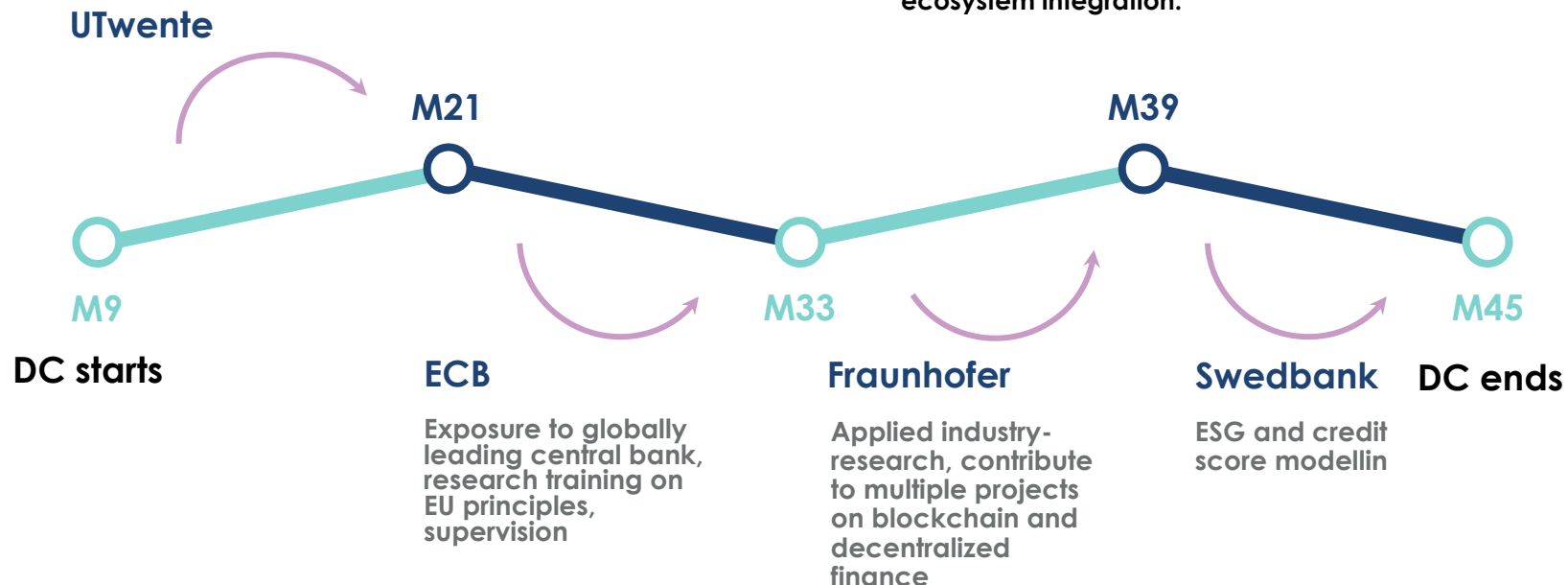
Objectives

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.**

Deliverables

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**.

IRP 3
TIMELINE



DIGITAL