An Agent-Based Framework for Multi-Domain service networks: Eduroam case study

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Introduction

Research Question

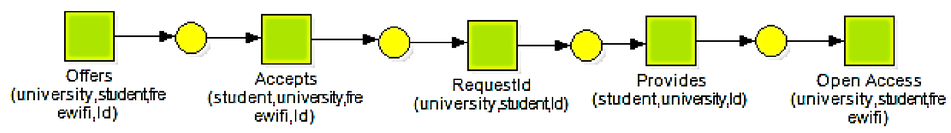
- How to model a Service Provider Group (**SPG**) from the **normative perspective** to **observe** the agent **behavior** and identify the **benefits** and **risks**.

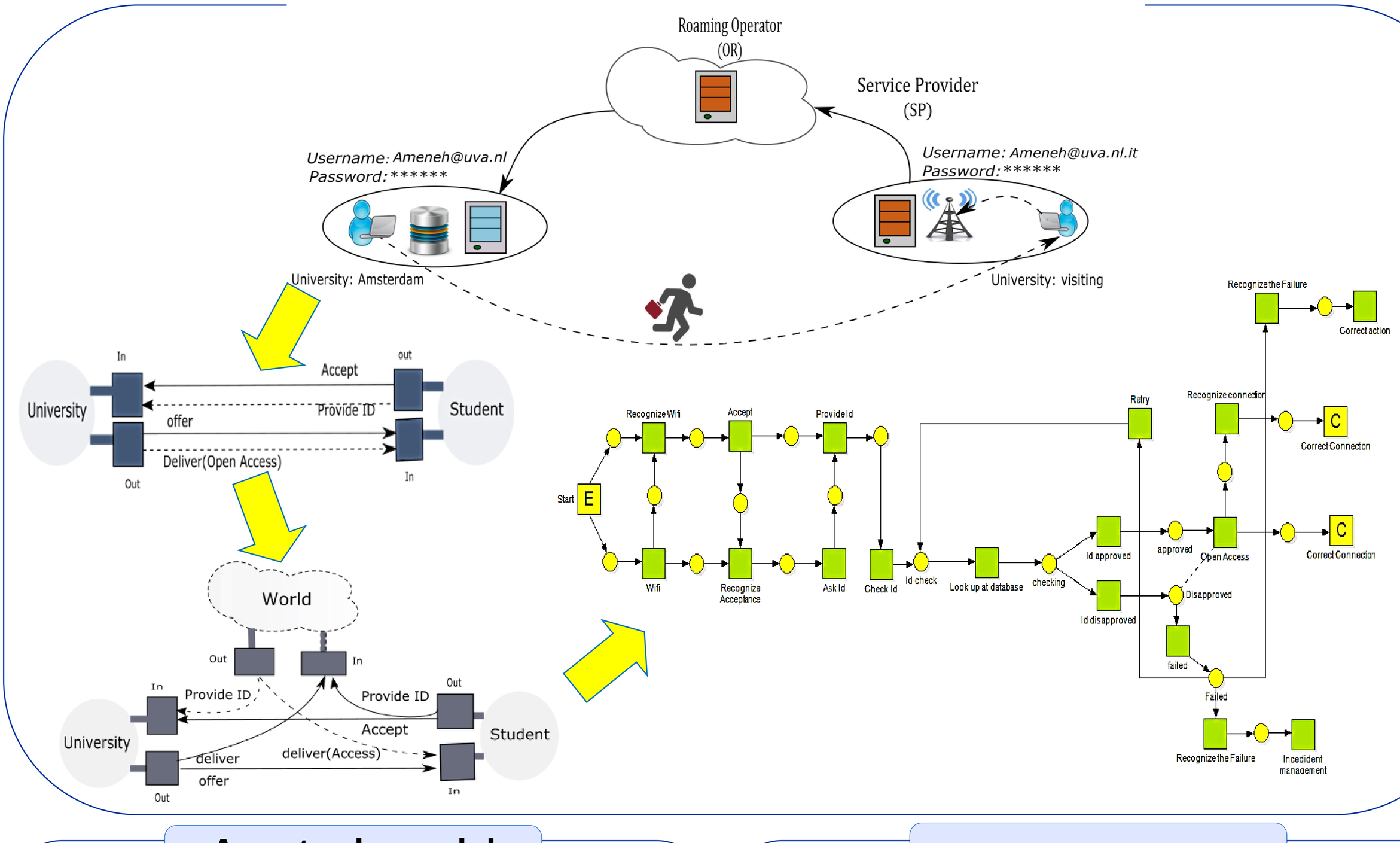
Challenges

- Distributed network.
- Multiple users with diversity of goals.
- Multi domain when each domain has its own goal and desire.

Methodology

- Start from an **inter-agent** description,
- Message **sequences** and **topology**,
- Enrich it with **intentional/institutional** factors,
- Identify the **pre**- and **post** conditions, and
- Synthetize it in **intra-agent** models.





Agent role model

Framework

- **Signal layer -** describes **acts**, side-effects and failures: outcome of actions,
- **Action layer - actions:** performances that bring a certain result,
- **Intentional layer - intentions**: commitments to actions, or to build up intentions,
- **Motivation layer - motives**: events triggering the creation of intentions.

Conclusion

- Model **normative reasoning** in a complete **distributed** environment.
- Social (institutional) dynamics: validating the domain of conceptualization of the experts, making **predictions**, suggesting **improvements** to **regulations** for the SPG framework and spotting **normative weaknesses** and **vulnerabilities**.
- An ABM of **cross domain** framework.

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This work has been sponsored by the Netherlands COMMIT/ program and NWO organization under SARNET project.