SCIENCE*SPRING*DAY

FCt FACULDADE DE CIÊNCIAS E TECNOLOGIA UNIVERSIDADE NOVA DE LISBOA

DEPARTAMENTO DE INFORMÁTICA

Agent-Based Modeling and SImulation

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Ph.D Student in Informatics with a current focus in Agent-Based Spatial Simulation for Land Use and Natural Resources Management and Model-Driven Development

Objectives

Addressing the limitations of agent-based models (ABM) description and specification for land use and resource management simulations (ABMLUS).

Improving ABM reuse and validation.

Improve ABMLUS acceptance and credibility as a decision support tool in Planning.

Methodology

Developing a Domain Specific Modeling Language (DSML) to transform users' models into code for specific Agent-Oriented Software Engineering (AOSE) platforms.

Building a a domain model where ABMLUS concepts and relations are described and structured.

Validate the DSML against existing agent-based models in the ABMLUS domain .

Perform a usability study of the DSML to test its acceptability by users.

Expected Results

A domain ontology for MASLUS.

A UML/SysML profile where the ontology domain axioms are be formalized as Object Constraint Language (OCL) constraints.

An editor in Eclipse that enables the design of agent-based models in conformity to the UML profile

DSML

M3	**UML / SysML** *Metamodel*
	⇡ *conform to*
M2	**ABMLUS** *Conceptual domain model*
	⇡ *conform to*
M1	**User's model**
	⇡ *conform to*
M0	**Simulations** *Run-time instances*