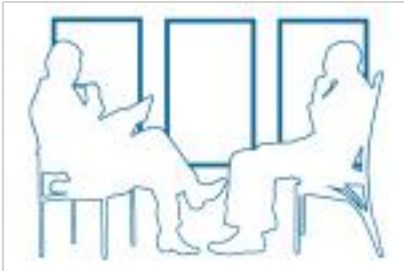




# Offre Allocation Thèse

Du 30 juin 2017 au 7 juillet 2017



## Titre :

Model-based Learning and Teaching Software Environment for Computer Science Modeling Education

## Résumé :

Computer Science Education is gaining momentum internationally, with the introduction of Computational Thinking (CT) concepts in the curricula of elementary and middle schools. In France, CT teaching was introduced in the mathematical curriculum of 2016. One of the essential CT concepts is modeling, the process of understanding the problem in the real world, establishing a computational model, solving the problem using this computational model, interpreting the computational results in the real world, and validating the solution. However, modeling is not an easy knowledge and know-how to learn or teach. Therefore, in this Ph.D. subject we will propose a software platform to help students learn modeling concepts. This environment will also propose support for teachers to conceive lessons and lesson plans for teaching modeling concepts.

The platform will be defined using Model Driven Engineering (MDE) principles, such as meta-modeling, process modeling and enactment, code generation. The environment will be tested in middle school classrooms in the French department of Landes. The obtained results will also form the basis for offering further support on architecture design modeling at all levels of expertise. Close work with the Lab-E3D, on Didactics, from the University of Bordeaux, is expected.

## Mots clés :

Model Driven Engineering, Modeling, Computer Thinking, Computer Science Education, Didactics