APPLICATIONS OF R&I
EXPECTED OUTCOME AND EVALUATION METHOD

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The main objective of this exam is to gather experience with the development of event-driven simulators.

For the sake of uniformity, we prefer if you use Python since it is a high level program and you can focus just on the logic of your program. However, you should implement the required simulator from scratch and be responsible for your code. The whole work can be broken down as follows.

Paper(s) reading. This exam is based on some research works published not too long ago by your instructors. We will provide the papers and further readings if needed to every team. We do not expect you to grasp all the technical details, but we do expect you to understand the system that you must simulate in your assignment. So, after the paper reading, we will ask each team to present their understanding of their readings before proceeding to the design and implementation of the simulator.

Project organization. You should be able to plan the development of your simulator. For every specific project, we will decide the teams, and you have to select a team leader. During the sessions, you will explain the workflow and how you are planning to divide the work and solve your assignment. Outside lab sessions, we will only discuss with the team leader, in person and not by email.

Implementation. The core work is the implementation of the event-driven simulator. You should be able to test the behavior of each component in isolation, this will permit to avoid problems later on, i.e., avoid to assemble a simulator based on flawed components.

Simulations. The aim of the simulator is to test some performance figure for a given system configuration and possibly to get insights on the properties of the system. You should be able to provide a figure about the performance of the system for a certain choice of parameters, or explore how certain parameters affect the performance of the system itself. Make a proposition, to be discussed with your instructor, and provide the output of your simulator. Ideally, you should gather some insight or you should be able to comment on the result of the simulation. Does it make sense? What do you learn? How does the system performance scale with the system size?

Evaluation. The evaluation of your work is an oral exam where you must produce: 1) the GitHub code repository and 2) a performance evaluation of your system as discussed with your instructor during the course and 3) a clear explanation of the functioning of your code (with live examples). You are in charge to fix a target date for the evaluation of the whole team no later than November 30 th.