STOCHASTIC PROCESSES AND SIMULATIONS

Project Description

GOAL

Create a functioning model, approximating the processes in a given environment.

SPECIFICATION

Each group gets their own environment and is suppose to build a reasonable model. The models are required to include:

- Generating entities
- Timing entities
- Signal measurements
- Randomness
- Conditional routing elements

The above specification is very general and does not cover all possibilities, as well as possibly necessary tools to obtain a model resembling reality to higher extend. Groups are encouraged to create as realistic model as possible.

The model creation and analysis should be related to process questions decided by the group. Those might be a questions with entity or model itself as a subject. **At least two questions** are to be clearly defined and answered. Questions should relate and be specific to the project assigned.

The choice of numerical values of used parameters is up to group members. If there exist realistic (or approximate realistic) values for a process, group should reason for and use these.

Each group had been assigned a specific environment, however, upon discussion with course responsible (Konrad) the groups can change or modify the environment to suit personal interest. Please observe that your choice cannot overlap with environments of other groups and the change must be approved by course responsible before assumed finalized.

METHODS

Model should be implemented in the SimEvents library with additional possible help of Matlab functions. Except the specification, your implementation should include technical elements like:

- Attributes
- In or out connection to Matlab
- Subsystems, areas

Result Presentation

Each group is supposed to prepare **10-12 minutes' presentation** which include problem description, model description (with possible discussion of interesting elements), result presentation, conclusions, and possible extensions. **All members** of the group are expected to be active during presentation.

Presentation Procedure & Grading

After the presentation is finished, there will be a short time for questions from audience, as well as examiner. When the presentation session is over, the examiners meet and discuss after which they set a final grade (U or G). If a group obtains U it is required to write a written report covering the topic of presentation. If a person is not present on the presentation, she/he automatically gets U and need to write a written report within two weeks from presentation day. The report is counted as second hand-in and if grade U is obtained on the written report, no further chance of completing the assignment is provided until August.

The project presentation will be graded according to the criteria including both content of the presentation (model, model presentation, questions posed, answers and conclusions) as well as the presentation techniques used by the presenters.

Group Advisor

Each group is assigned an advisor: Konrad or Jonas. The advisor is a person which helps you with ideas around your project. You should discuss the ideas, questions and the construction of the model you want to implement with that person to assure executability of your project. Each group has specific time assigned for the meeting with it's advisor. It is a 15 minutes' slot on afternoon of January 9th, where you should present your project ideas and discuss eventual problems. **The more you are prepared for that meeting, the more giving the meeting will be.**

The meetings take place at two conference rooms at Department of Mathematics and Mathematical Statistics. If your group has Konrad as group advisor, the meeting take place at Small Conference room. If your group has Jonas as group advisor, the meeting take place at Big Conference room.

Technical Supervision

During the course of the project work you will have access to teachers who can help you with implementation and can be of a counselling role when it comes to presentation of result. However, you should turn to your group advisor with questions regarding the principles and ideas of your model.