

EECS 222A
System-on-Chip Description and Modeling
Fall 2007

Assignment 3

Posted: October 26, 2007 (week 5)
Due: November 2, 2007 (week 6)

Task: Develop a simple system specification model

Instructions:

The goal of this assignment is to develop a simply system specification model for one device (ECU) in the Elevator Control System (ECS).

Task 1: Read the Technical Report about the Elevator Control System.

The technical report about the elevator control system, which we have discussed in Lecture 5, is available on our server 'epsilon.eecs.uci.edu' in the following file:

```
/home/doemer/EECS222A_F07/Doc_Elevator.pdf  
or  
/home/doemer/EECS222A_F07/CECS_TR_07_04.pdf
```

Task 2: Compile and run the ECS example

The SpecC source code of the ECS example is available as reference (and/or starting point) for our project. The code is available as a compressed tar archive on the server:

```
/home/doemer/EECS222A_F07/ecs.tar.gz
```

Note that you will need to use the 2006 version of the SCE tools in order to compile this example. The example makes use of new debugging facilities that are not available in the 2004 SCE tools.

To compile and run the example, follow the following steps (after logging into the server epsilon):

```
source /opt/sce-20060301/bin/setup.csh  
gtar xvzf /home/doemer/EECS222A_F07/ecs.tar.gz  
cd ecs  
make  
./ecs
```

Task 3: Develop a simple system specification model

Develop a simple system specification model such as one ECU in the ECS. The system should consist of:

- Test bench behavior Main
- Stimulus behavior
- Design Under Test (DUT)
- Monitor behavior

Specify your specification model in the SpecC language and simulate your model with the SpecC compiler and simulator.

Deliverables:

- 1-page specification of your system
- Illustration figure / schematic view of DUT with ports
- Brief (!) description of functionality (in English)
- Executable source code (in SpecC)
- Successful simulation run

Due: Week 6 (Nov 2, 2007)

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