T-79.231 Parallel and distributed digital systems **Autumn 2001**
Homework #5 **Teemu Tynjälä**

In the attached two figures, we describe a very simple protocol using SDL. Your task is to convert the description into a Maria model, assuming that **the communication takes place over a simple lossy channel**, and that **timers are represented as boolean values only**.

After having done the model in Maria, you should verify the following property: *"The receiver will always receive at least one message"*. Describe what this means in terms of the model, and verify the result. If the result is false, give a counterexample.

Finally, convert the protocol into CCS formalism.

You should return your answer in two parts. The Maria model, and the verification result are to be sent by email to Jukka.Honkola@hut.fi. The email return should be in plain text format. The CCS part is to be hand-written, and dropped to the TCS laboratory mailbox.

N.B.: The home assignment is an individual task. No signs of cooperation shall be visible in the returned assignments.

The deadline for the Home Assignment #5 is Dec 3, 2001; use the post box between rooms B336 and B337 in the Computer Science building for the CCS part, and return the Maria model with the verification results by email to the assistant. The homework assistant is Jukka Honkola (email:Jukka.Honkola@hut.fi).

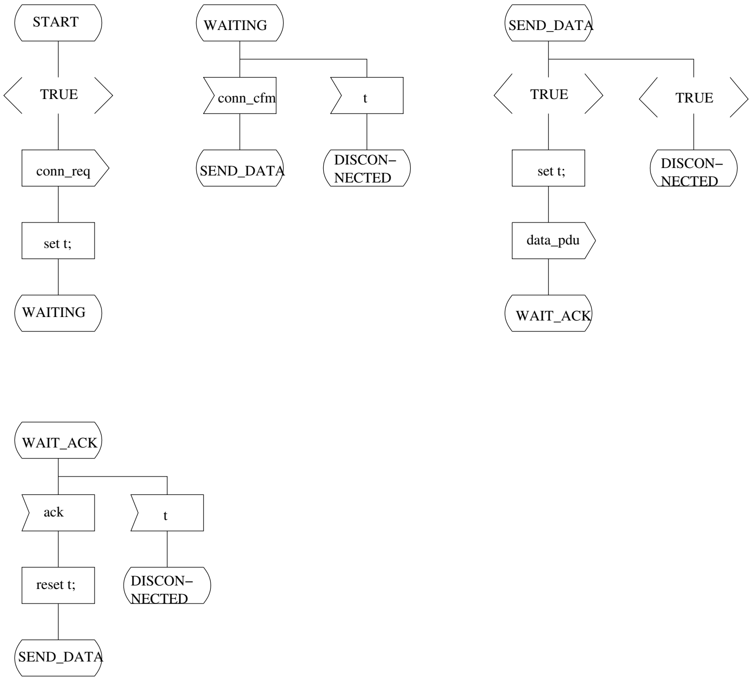

Figure 1: A very simple sender process

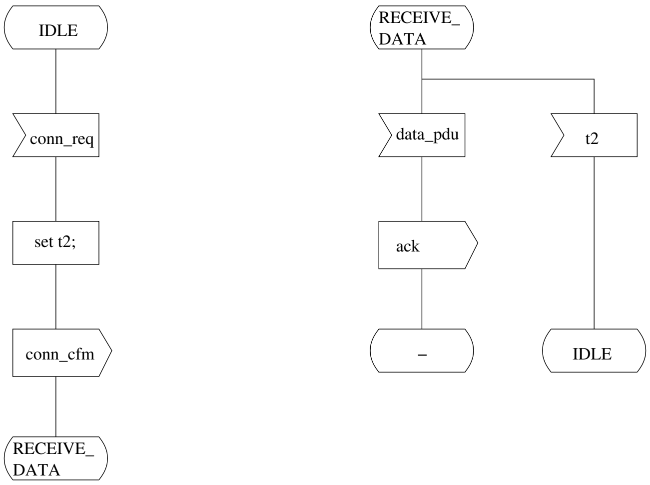

Figure 2: A very simple receiver process