Comet – exercices 1

Bring your answers to the course on sept. 21st

Behavioural equivalence between processes

Consider the following processes:

$$P_1 \quad = \quad a.b \mid a.b \qquad\qquad P_2 \quad = \quad a.(b \mid a.b)$$

$$P_3 \quad = \quad a.(b \mid a \mid b) \qquad\qquad P_4 \quad = \quad a.(!a.b \mid b \mid a.b)$$

1. Draw the LTS for each of these processes.

2. Which ones are strongly bisimilar and which are not?

   For bisimilar processes, write a bisimulation proof, possibly using some up-to technique.

   For non-bisimilar processes, explain your answer.

3. Define a process which is strongly bisimilar to P_4, but simpler.

   Write the bisimilarity proof, possibly using some up-to technique.

If you use an up-to technique which is different from *bisimulation up to strong bisimilarity*, define it clearly, and explain, possibly rather informally, how you prove that it is correct.