

**Elective in Software and Services**

*(Complementi di software e servizi per la società dell'informazione)*

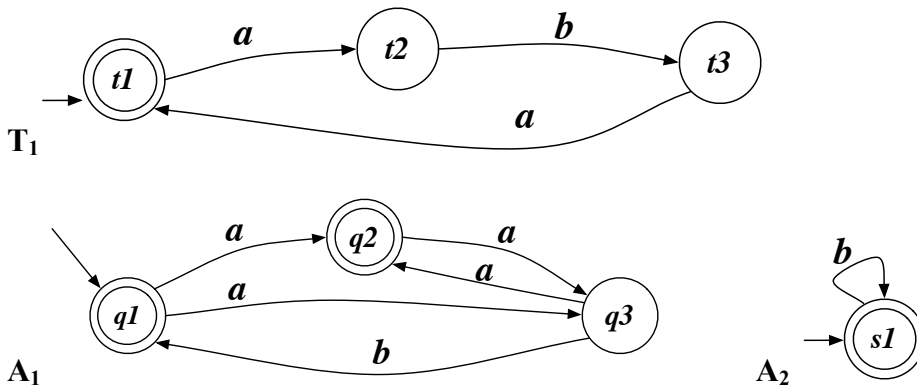
2009/10

**25/02/2011**

Time to complete the assignment: 2 hours

**Part 1 (Composition Synthesis)**

Given the following the available services  $A_1$  and  $A_2$  and the target service  $T_1$ , check whether a composition realizing each of them exists, and if it does, produce the output relation of orchestrator generator. If not, single out the target state that cannot be simulated (ND-simulated), and propose a change to the available services so as to guarantee the composition.



**Part 2 (Theoretical Question)**

(a) Give the definition of bisimulation, simulation and ND-simulation. (b) Show an example of two transition systems that are in simulation but not in bisimulation. (c) Show an example of two transition systems that are simulation, but are not in ND-simulation.