



Start of concurrent processes

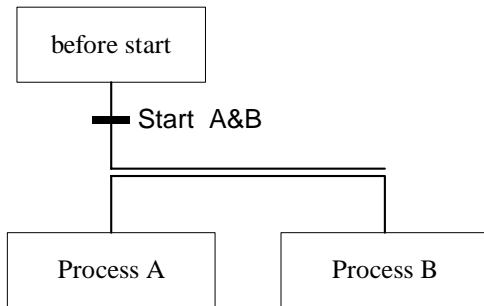


Figure 1: Start of concurrent processes

A start of two concurrent processes is shown in the figure above. The double line after the transition indicates the concurrent start of the processes A and B. Observer that the transition **‘Start processes A&B’** is preceding the double line, indicating that that condition has to be true before the 2 processes can be started.

Example:

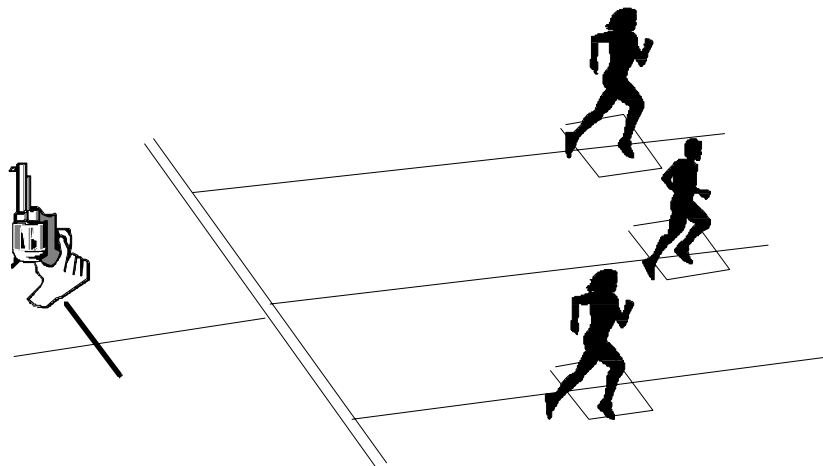
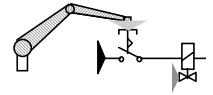


Figure 2: Example start of concurrent processes

After the start ‘bang’ which is the transition condition the 3 athletes start running the race independently.



Synchronization of concurrent processes

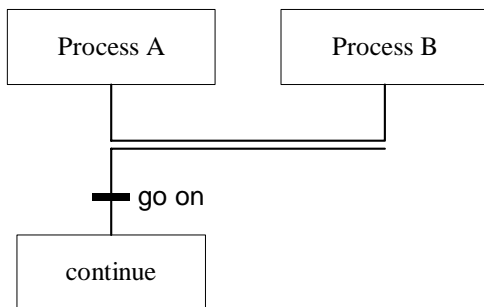


Figure 3: Synchronization of concurrent processes

The two processes A and B are synchronized at the double line. The SFC-switching rules, investigated in the sequel, enforce that all the steps preceding the double line have to be marked, before the go on transition can fire.

Observe: the transition follows the synchronization line.

Example:

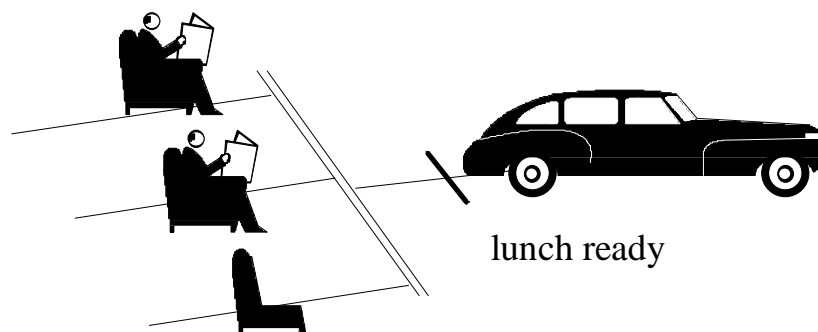
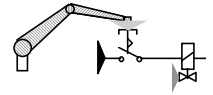


Figure 4: Synchronization example

When three persons drive with one car, they have to be 'synchronized', i.e. they have to be at the same time at the same place before they can start their journey. Obviously, it is easier to wait in a comfortable chair. Similarly, it is recommended to use dedicated waiting steps ahead of synchronization in order to solve all waiting functionality in a neat way.



Synchronization Switching Rules

In Lesson 2, the switching rules were introduced. In this section, the switching rules are reinvestigated with respect to process synchronization. A transition is called 'enabled', if all directly preceding steps are marked. When a synchronization bar is ahead of the transition, all the steps connected to the bar have to be marked. This is shown in the next figure.

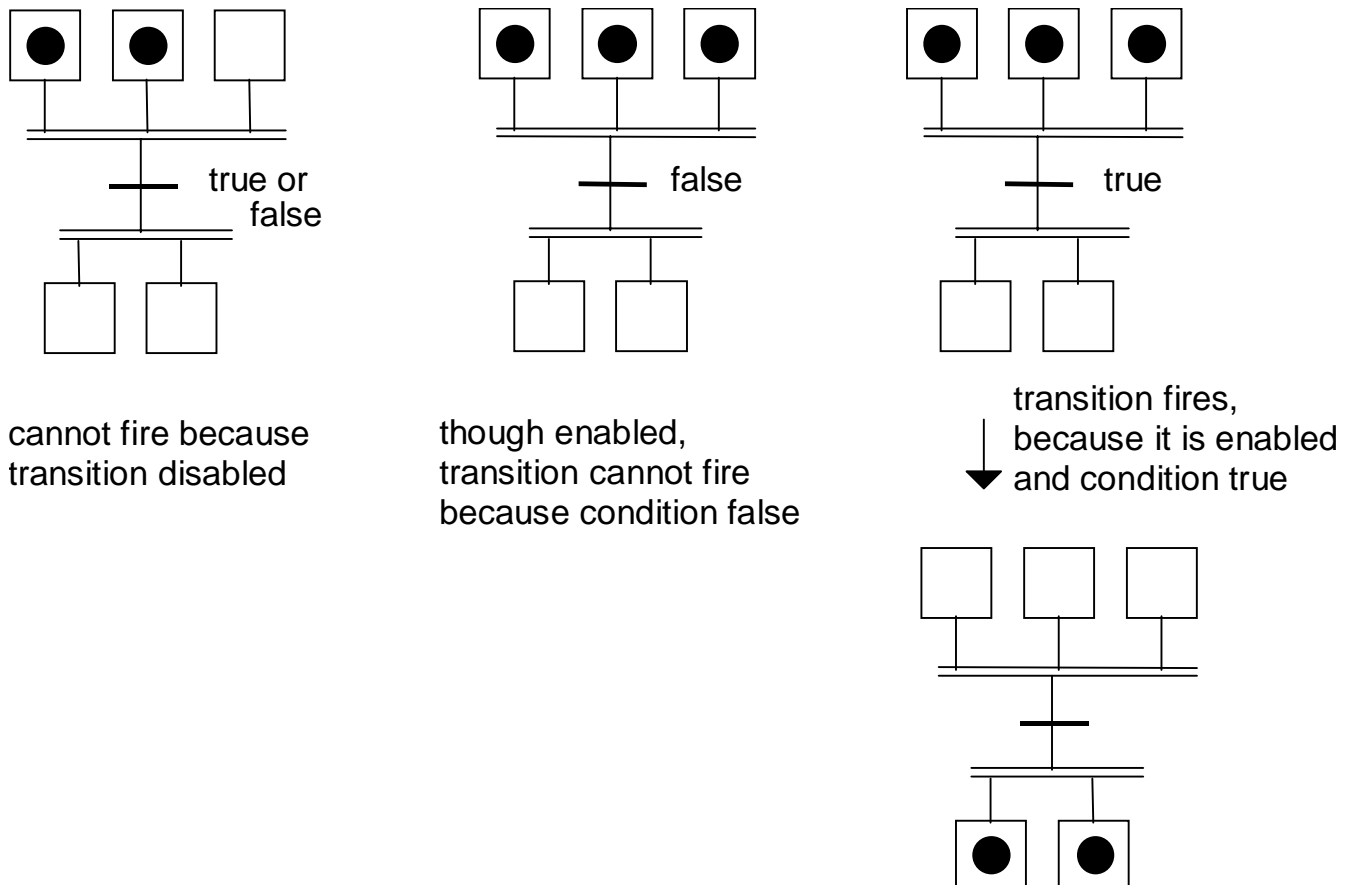


Figure 5: Switching Rules at synchronization