

Subtask 3: Duration of Process Execution

1)

Either task D or task C is always executed in the process. It never happens that both are executed at the same time. The fact that either Task C or Task D can be executed is due to the fact that there is a timer event in the sub-process that can last between 1 and 3 seconds. If the timer event is between 1 (inclusive) and 2 (exclusive) seconds long, the sub-process is exited, a timer event of 2 seconds is waited for and then Task C is executed and Print Time is executed via the XOR gateway. As soon as the sub-process is exited, Task D can no longer be called, as the timer event that leads to Task D is a boundary event of the sub-process.

However, if the timer event in the sub-process is between 2 (inclusive) and 3 (inclusive) seconds long, it is not executed to the end. This is because after exactly 2 seconds the sub-process is cancelled by an interrupting timer event and Task D is executed and then Print Time is executed via the XOR gateway. As the sub-process is cancelled, task C and the 2-second time event cannot be executed in this case.

2)

Assuming that the tasks themselves do not consume any time, but only the timer events, the minimum duration is 2 seconds and the maximum duration is 3.99 seconds (with precision to two decimal places), which can be printed in Print Time. The path via Task D cannot take more or less than 2 seconds, as the sub-process is cancelled after 2 seconds and no more time is waited afterwards. The shortest duration via Task C would be 3 seconds (wait 1 second in the sub-process and 2 seconds before Task C). This therefore takes longer than the way over Task D. The highest duration is made up of 1.99 seconds waiting in the sub-process, as this is the highest value at which the sub-process is not cancelled, and the 2 seconds before Task C, i.e. 3.99 seconds.