



Verifikation nebenläufiger Programme

Sommersemester 2004

Serie 8

14. Juni 2004

Thema: Tester

Ausgabetermin: 14. Juni 2004

Abgabe: 21. Juni 2004 (vor der Vorlesung im Schrein oder in der Vorlesung)

Aufgabe 1 (4 Punkte) Describe the following property by an LTL formula:

If the first process of an SPL program is in one of its positions l_3 or l_4 then the other processes may not change the value of the observable Boolean variable x .

Argue that your formula describes the required property.

Aufgabe 2 (4 Punkte) Consider the following LTL formula

$$\varphi = (\Box q_1) \rightarrow (q_2 \mathcal{W}(\Box q_3))$$

1. Explain informally which property is described by this formula.
2. Write down the tester $T_{\neg\varphi}$. In particular, use the graph notations as in the lecture. Furthermore, present the corresponding FDS.

Aufgabe 3 (3 Punkte) Show that a property can be specified by $\Box\Diamond q$ for some past formula q iff it can be specified by a formula $q_1 \Rightarrow \Diamond q_2$ for some past formulas q_1, q_2 .

Aufgabe 4 (3 Punkte) Construct the tester for the formula $\Diamond(p \wedge \Box\neg q)$ via the tester construction for formulas with past operators.