Mandatory Assignment 1

Group 1
IT University of Copenhagen

September 22, 2012

This assignment is a part of the Advance Mobile and Distributed Systems Seminar.

1 Exercise 1, p. 12

$$\begin{aligned} SYSTEM_1 &\stackrel{\text{def}}{=} (v\, talk_i, switch_i, give_i, alert_i : i = 1,2) \\ &(CAR(talk_1, switch_1) | Base_1 | IDLEBASE_2 | CENTRE_1) \end{aligned} \tag{1}$$

$$IDLEBASE(t,s,g,a) \stackrel{\text{def}}{=} a.BASE(t,s,g,a) \tag{2}$$

$$BASE_i \stackrel{\text{def}}{=} BASE(talk_i, switch_i, give_i, alert_i) \quad (i = 1,2) \tag{3}$$

$$\begin{aligned} CENTRE_i \stackrel{\text{def}}{=} &\overline{give_1} talk_2 switch_2.alert2.CENTRE_2 \\ &\overline{give_2} talk_1 switch_1.alert1.CENTRE_1 \end{aligned} \tag{4}$$

2 Exercise 2, p. 13

$$\begin{aligned} SYSTEM_1 &\equiv (v \overleftarrow{c})(CAR/talk_1, switch_1) | BASE_1 | IDLEBASE_2 | CENTRE_1) \\ &\rightarrow (v \overleftarrow{c})(CAR(talk_1, switch_1) | \overline{switch_1} talk_2 switch_2.IDLEBASE_1 \\ &\quad | IDLEBASE_2 | alert_2.CENTRE_2) \\ &\rightarrow (v \overrightarrow{c}((CAR(talk_2, switch_2) | IDLEBASE_1 \\ &\quad | IDLEBASE_2 | alert_2.CENTRE_2) \\ &\rightarrow (v \overrightarrow{c})(CAR(talk_2, switch_2) | IDLEBASE_1 | BASE_2 | CENTRE_2) \\ &\equiv SYSTEM_2 \end{aligned} \tag{5}$$