**Assignment 1b**

**Actors:**

* Movemenet sensor (MS)
* Surveillance camera (SC),
* System movement controller (SMC)
* Mobile phone (MP)

**Signals:**

* MS to SMC
* SMC to SC
* SMC to MP

**Problem statement:** The movement sensor registers new activity, alerts the system controller, which will trigger the camera and notify the user on its mobile phone.

**The output of the model checker – check**

Saved assignment1b

bin\spin.exe -a assignment1b ... done!

bin\spin.exe -g -l -p -r -s -X -u250 assignment1b ... done!

**The output of the model checker – random**

0: proc - (:root:) creates proc 0 (MS)

0: proc - (:root:) creates proc 1 (SC)

0: proc - (:root:) creates proc 2 (MP)

0: proc - (:root:) creates proc 3 (SMC)

0 MS 23 secondsCount<3

MS is on the hunt, waiting for movement

0 MS 25 printf('MS is

0 MS 27 secondsCount =

Process Statement secondsCou

0 MS 23 secondsCount<3 1

MS is on the hunt, waiting for movement

0 MS 25 printf('MS is 1

0 MS 27 secondsCount = 1

0 MS 23 secondsCount<3 2

MS is on the hunt, waiting for movement

0 MS 25 printf('MS is 2

0 MS 27 secondsCount = 2

0 MS 23 secondsCount== 3

0 MS 32 signal!registe 3

3 SMC 81 signal?registe 3

0 MS 32 values: 1!regi 3

3 SMC 81 values: 1?regi 3

New activity registered

3 SMC 82 printf('New ac 3

3 SMC 83 signal!notifyC 3

1 SC 51 signal?notifyC 3

3 SMC 83 values: 1!noti 3

1 SC 51 values: 1?noti 3

Camera started recording

1 SC 52 printf('Camera 3

1 SC 60 camera\_records 3

Process Statement camera\_rec secondsCou

0 MS 33 secondsCount = 1 3

0 MS 23 secondsCount<3 1 0

MS is on the hunt, waiting for movement

0 MS 25 printf('MS is 1 0

0 MS 27 secondsCount = 1 0

0 MS 23 secondsCount<3 1 1

MS is on the hunt, waiting for movement

0 MS 25 printf('MS is 1 1

0 MS 27 secondsCount = 1 1

0 MS 23 secondsCount<3 1 2

MS is on the hunt, waiting for movement

0 MS 25 printf('MS is 1 2

0 MS 27 secondsCount = 1 2

0 MS 23 secondsCount== 1 3

3 SMC 84 signal!notifyU 1 3

2 MP 66 signal?notifyU 1 3

3 SMC 84 values: 1!noti 1 3

2 MP 66 values: 1?noti 1 3

User has been notified

2 MP 67 printf('User h 1 3

3 SMC 92 controller\_run 1 3

29: proc 3 (SMC) terminates

Process Statement camera\_rec controller secondsCou

2 MP 75 user\_notified 1 1 3

30: proc 2 (MP) terminates

30: proc 1 (SC) terminates

timeout

#processes: 1

30: proc 0 (MS) assignment1b:31 (state 10)

4 processes created

**Formulas:**

1. **[](!movement\_detected -> <> movement\_detected) - always, if there is no movement detected, eventually there will be**
2. **[](registerMovement -> <> notifyUser) - always, when a movement is detected, the user will be notified**
3. **[](registerMovement -> <> notifyCamera) - always, when a movement is detected, the camera will be notified**

**Output:**

Saved assignment1b

bin\spin.exe -a assignment1b ... done!

c:\mingw\bin\gcc.exe -DSAFETY -o pan pan.c ... done!

C:\Users\alexm\Downloads\pan -m2000 -N [](registerMovement -> <> notifyCamera) -X ... done!