**An Event-B Specification of m1**
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**MACHINE** m1

Machine for a model of the Bosch switch minipilot Michael Butler 16 May 2008

The machine has 2 variables: the current time and the switch state.

It has 3 events: SwithOn, SwitchOff and Tick

The switch events are guarded by the conditions on the continuous input defined in the context c1.

**SEES** c1

**VARIABLES**

$clk$

$out$

**INVARIANTS**

$inv1: clk \in \mathbb{N}$
current time

$inv2: out \in BOOL$
switch state

**EVENTS**

**Initialisation**

**begin**

$act1: clk := 0$
$act2: out := FALSE$

**end**

**Event** SwithOn $\widehat{=}$
If the output is off and the switch on condition is true at the current time, the output is set to on.

**when**

$grd1: out = FALSE$
$grd2: clk \in SwitchOnCond$

**then**

$act1: out := TRUE$

**end**

**Event** SwithOff $\widehat{=}$
If the output is on and the switch off condition is true at the current time, the output is set to off.

**when**

$grd1: out = TRUE$
$grd2: clk \in SwitchOffCond$

**then**

$act1: out := FALSE$

**end**

**Event** Tick $\widehat{=}$

**begin**

$act1: \ clk := clk + 1$

**end**

**END**