

```

1  open util/boolean
2
3  conc state HeatingSystem {
4    env event Reset {}
5    env event TurnOn {}
6
7    state Error {
8      on Reset
9      goto Off
10   }
11   state Off {
12     on TurnOn
13     goto On
14   }
15
16   state On {
17     conc state Room [myid: RoomID] {
18
19       condition tooCold[...] {}
20       condition tooHot[...] {}
21       condition waitedForCool[...] {}
22       condition waitedForWarm[...] {}
23       action adjValve[...] {}
24       env event TurnOn {}
25
26       default state Off {
27         on TurnOn
28         goto No_Heat_Requested
29       }
30
31       state No_Heat_Requested {
32         default state Idle_No_Heat {
33           trans T8 {
34             on tooCold
35             do adjValve
36             goto Wait_For_Heat
37           }
38         }
39
40         state Wait_For_Heat {
41           trans T9 {
42             on !tooCold
43             goto Idle_No_Heat
44           }
45
46           trans T10 {
47             on waitedForWarm
48             do adjValve
49           }
50         }

```

```

51
52     }
53
54     state Heat_Requested {
55         default state Idle_Heating {
56             trans T15 {
57                 on tooHot
58                 do adjValce
59                 goto Wait_For_Cool
60             }
61         }
62
63         state Wait_For_Cool {
64             trans T14 {
65                 on !tooHot
66                 goto Idle_Heating
67             }
68
69             trans T13 {
70                 on waitedForCool
71                 do adjValve
72             }
73
74             trans T11 {
75                 on {
76                     waitedForCool
77                     vClosed
78                     cancelrH
79                 }
80                 goto HeatingSystem/No_Heat_Requested
81             }
82
83             trans T12 {
84                 on {
85                     waitedForWarm
86                     vOpen
87                     rH
88                 }
89                 goto HeatingSystem/Heat_Requested
90             }
91         }
92     }
93
94
95 }
96
97 conc state Controller {
98
99     event furnaceReset {}
100    event deactive {}

```

```

101     env event heatSwitch {}
102     env event userReset {}
103     env event roomNeedsHeat {}
104     env event heatSwitchOff {}
105     env event furnaceFault {}
106     env event noRoomNeedsHeat {}
107     env event furnaceRunning {}
108     env event Fail {}
109
110     default state Off{
111         trans T17 {
112             on heatSwitch
113             goto Controller_On
114         }
115     }
116
117     state Controller_On{
118         default state Idle{
119             trans T20 {
120                 on roomNeedsHeat
121                 goto
122             }
123         }
124
125         trans T18 {
126             on heatSwitchOff
127             goto Controller/Off
128             send deactivate
129         }
130
131         trans T19 {
132             on furnaceFault
133             goto HeatingSystem/Error
134         }
135
136         state Heater_Active{
137             trans T22 {
138                 on noRoomNeedsHeat
139                 goto Idle
140             }
141
142             state Activating_Heater{
143                 trans T21 {
144                     on furnaceRunning
145                     goto Heater_Running
146                 }
147             }
148             state Heater_Running{}
149         }
150     }

```

151 }
152
153 }
154
155 }