In this document the translation from the HCCM Conceptual model to Jaamsim and vice versa will be further elaborated.

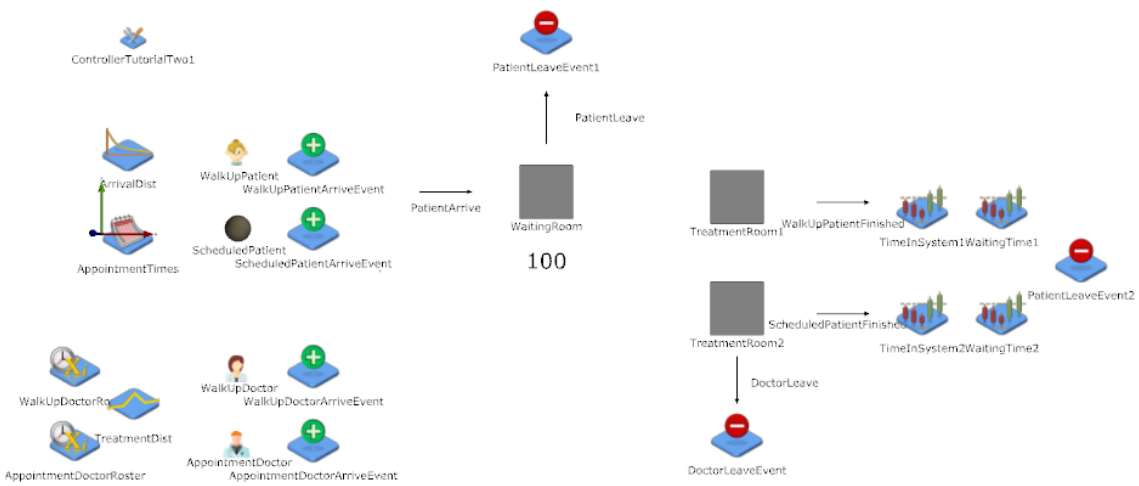

Figure 1 Jaamsim Model

The Jaamsim model of tutorial 2 is shown in the figure above. When an entity enters a block the controller can be triggered and will check by the Control Policy if an action has to be performed or a new signal has to be sended (to trigger another Control Policy). When an entity leaves a block or ends an activity, the controller can also be triggered. The table with Signals, triggers and actions is shown in table 1. The control policies that are used are shown in Figure 3 till Figure . Signals are indicated with a rectangle, events are indicated with a circle and decisions are indicated with a diamond.

Table 1 Signal list

Nr.	Signal	Triggered by:	Actions	Triggers:
1.	WalkUpPatient StartActivity WaitingRoom	WalkUpPatient Enters WaitingRoom	WalkUpPatient_State = “Wait”	Controlpolicy 1
2.	WalkUpPatient EndActivity WaitingRoom	Controlpolicy 1 Controlpolicy 11 Controlpolicy 12		Controlpolicy 3
3.	ScheduledPatient StartActivity WaitingRoom	ScheduledPatient Enters WaitingRoom	ScheduledPatient_State = “Wait”	Controlpolicy 2
4.	ScheduledPatient EndActivity WaitingRoom	Controlpolicy 2 Controlpolicy 12		Controlpolicy 4
5.	WalkUpPatient StartActivity TreatmentRoom1	WalkUpPatient enters TreatmentRoom1	WalkUpDoctor_Available = 0 WalkUpDoctor_State = “Working” WalkUpPatient_State = “Treat”	Controlpolicy 5
6.	WalkUpPatient EndActivity TreatmentRoom1	Controlpolicy 5		Controlpolicy 8

7.	WalkUpPatient StartActivity TreatmentRoom2	WalkUpPatient Enters TreatmentRoom2	AppointmentDoctor_Available = 0 AppointmentDoctor_State = “Working” WalkUpPatient_State = “Treat”	Controlpolicy 6
8.	WalkUpPatient EndActivity TreatmentRoom2	Controlpolicy 6		Controlpolicy 9
9.	ScheduledPatient StartActivity TreatmentRoom2	ScheduledPatient Enters TreatmentRoom2	AppointmentDoctor_Available = 0 AppointmentDoctor_State = “Working” ScheduledPatient_State = “Treat”	Controlpolicy 7
10.	ScheduledPatient EndActivity TreatmentRoom2	Controlpolicy 7		Controlpolicy 10
11.	WalkUpDoctor StartActivity TreatmentRoom1	WalkUpDoctor enters TreatmentRoom1	WalkUpDoctor_Available = 1 WalkUpDoctor_State = “Idle”	Controlpolicy 11
12.	WalkUpDoctor EndActivity TreatmentRoom1	Controlpolicy 5	WalkUpDoctor_Available = 0 WalkUpDoctor_State = “”	Controlpolicy 13
13.	AppointmentDoctor StartActivity TreatmentRoom2	AppointmentDoctor enters TreatmentRoom2	AppointmentDoctor_Available = 1 AppointmentDoctor_State = “Idle”	Controlpolicy 12
14.	AppointmentDoctor EndActivity TreatmentRoom2	Controlpolicy 6 Controlpolicy 7	AppointmentDoctor_Available = 0 AppointmentDoctor_State = “”	Controlpolicy 14
15.	WalkUpDoctor Shift Ends	TimeSeries		
16.	AppointmentDoctor Shift Ends	TimeSeries		

As an example, number 1 of Table 1 will be further elaborated. When a WalkUpPatient enters the WaitingRoom the signal *“WalkUpPatient, WaitingRoom, StartActivity”* is send to the controller. The controller checks with the function *“happens”* which actions should be perfomed by implementing control policy 1. The control policy is coded into java and shown in Figure 2. It can be seen that triggering control policy 1 can result in sending a signal or performing an event.

```
76          // WalkUp Patient start Activity at WaitingRoom
77          if (happens(activeEntity, activity, state, "WalkUpPatient", "WaitingRoom", "StartActivity")) {
78              DisplayEntity walkuppatient = activeEntity;
79              ((HCCMActiveEntity)walkuppatient).setPresentState("Wait");
80
81              // WaitingRoom is full, send Patient to Outside
82              if (((HCCMControlActivity)waitingroom).getNumberInProgress() >= waitingroomcapacity) {
83                  moveEntFromTo(walkuppatient,waitingroom,patientleave);
84              }
85
86              // WalkUp Doctor or AppointmentDoctor is available, WalkUp Patient ends Activity WaitingRoom
87              else if (serverAvailable("WalkUpDoctor",treatmentroom1) || serverAvailable("AppointmentDoctor",treatmentroom2)) {
88                  sendActivitySignalToList(walkuppatient, waitingroom, "EndActivity");
89              }
90          }
```

Figure 2 Java code of Control Policy 1

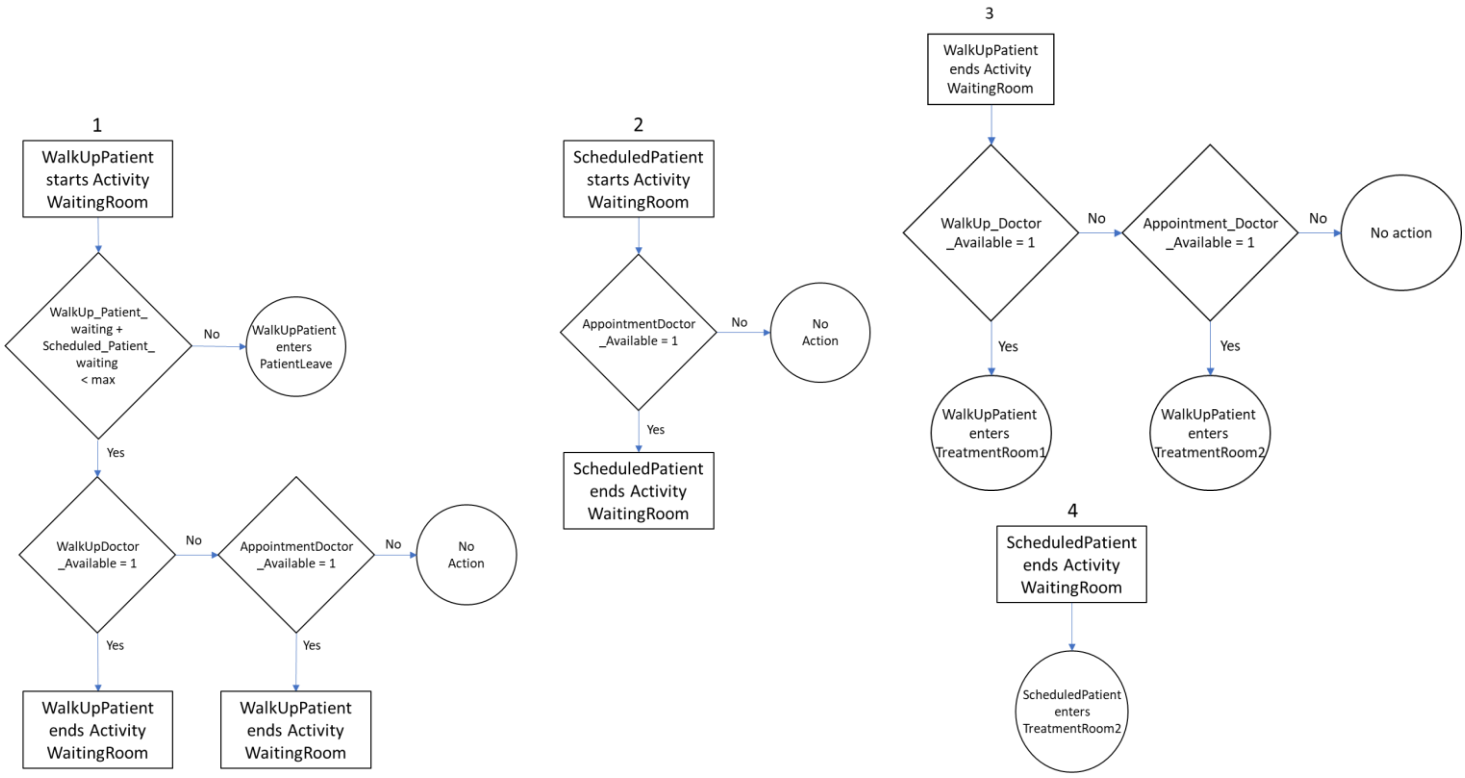

Figure 3 Control Policy 1 till 4

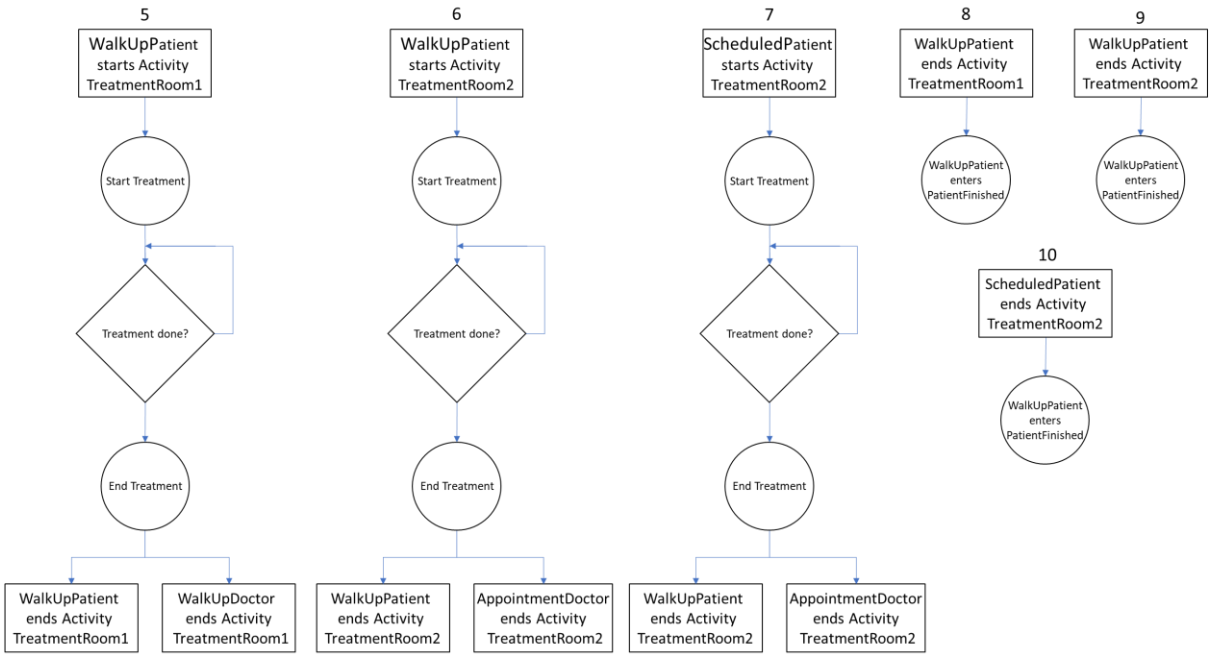

Figure 4 Control Policy 5 till 9

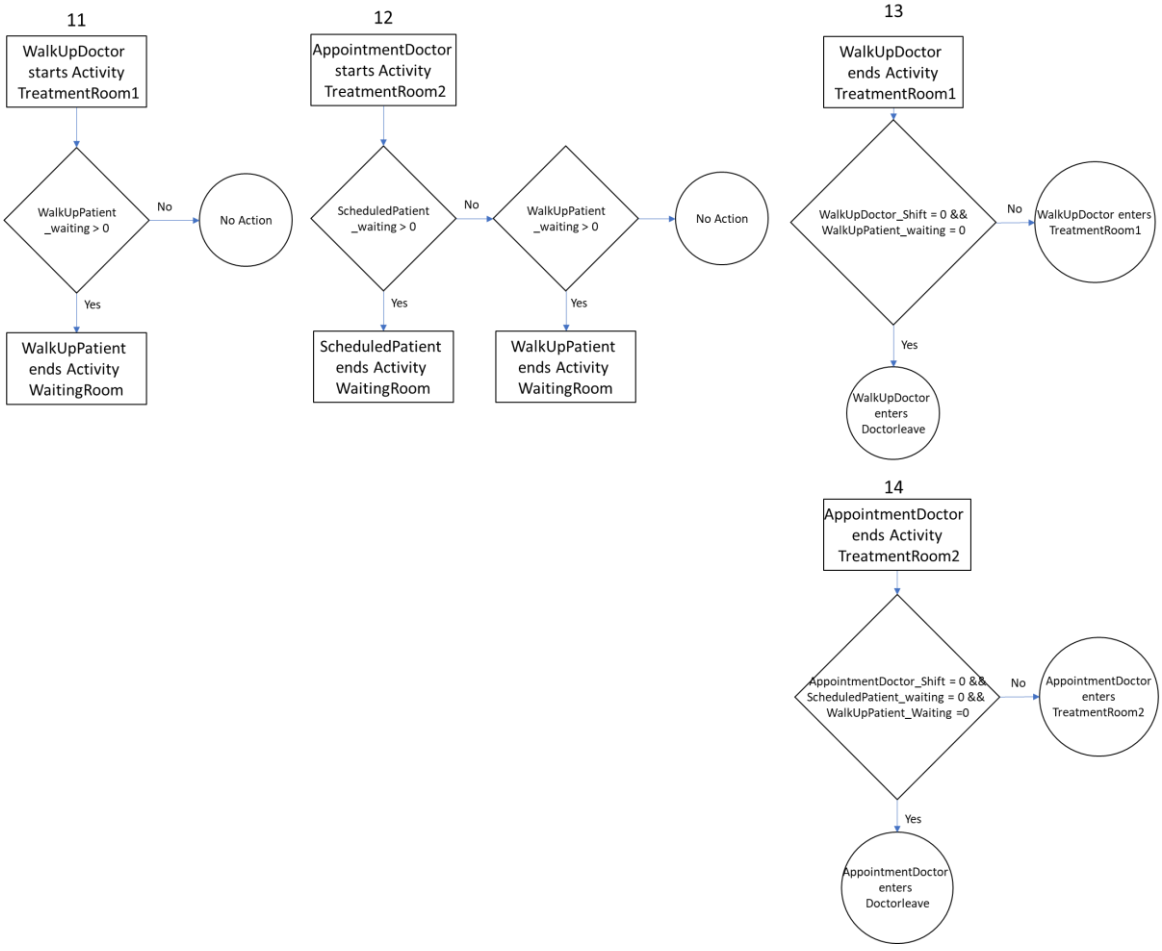

Figure 5 Control Policy 11 till 14