**TemplateHSM State Pseudo Code**

**Key:**

Capital Case used for variables and function names (Ed’s Convention)

/\* comments \*/

// place holder for code

Only code needed for lowest level state (During func)

Write Durings for everything, but comment out the function call if not needed

**Start ThisHSMS (CurrentEvent)**

// Handle history or irregular entry here

If not history entry

CurrentState = initial state

End

/\* Call ENTRY function for ThisHSMS \*/

Run ThisHSMS(CurrentEvent)

End Start

**ThisHSMS\_t Run ThisHSMS (CurrentEvent)**

Init MakeTransition, NextState, EntryEventKind, ReturnEvent

/\* React differently based on the state you’re in \*/

Switch (CurrentState)

Case SubState A:

/\* Execute During to respond to event \*/

CurrentEvent = DuringStateA(CurrentEvent)

/\* Handle all events relevant to SubState A \*/

If ES\_NO\_EVENT does not == CurrentEvent

Switch (CurrentEvent)

Case EventOfInterest

// Any transition action here

NextState = // State to change to

MakeTransition = True // Internal transition -> False

EntryEventKind = // History or Normal

ReturnEvent = // Consume event -> ES\_NO\_EVENT

Break

End switch

End if

Break

Case SubState B:

/\* Execute During to respond to event \*/

CurrentEvent = DuringSubStateB (CurrentEvent);

// Final state – no transitions

Break;

End switch

/\* Handle transitions between states \*/

If (MakeTransition)

/\* Exit this state \*/

CurrentEvent.EventType = EV\_EXIT;

Run ThisHSMS(CurrentEvent)

/\* Enter next state \*/

CurrentState = NextState; // Change to next state

CurrentEvent.EventType = EventEntryKind;

Run ThisHSMS(CurrentEvent)

End if

Return ReturnEvent

End Run

**ThisHSMS\_t During ThisHSMS (CurrentEvent)**

Init ReturnEvent

If (EV\_ENTRY == CurrentEvent)

// Execute Entry actions here

/\* Start lower level SM(s) \*/

// StartLowerLevelSM(CurrentEvent)

Else if (EV\_ExIt == CurrentEvent)

/\* Exit lower level SM(s) \*/

// RunLowerLevelSM(CurrentEvent)

// Execute Exit actions here

Else

/\* Pass event to lower level SM(s) \*/

// ReturnEvent = RunLowerLevelSM(CurrentEvent)

// Execute any internal event response here

End if

return ReturnEvent // or CurrentEvent to avoid event consumption

End During

**ThisHSMS\_t Query ThisHSMS (CurrentEvent)**

Return CurrentState;

End Query

**During LowestLevelState (CurrentEvent)**

Init ReturnEvent

If (EV\_ENTRY == CurrentEvent)

// Execute Entry actions here

/\* No lower level SM(s) \*/

Else if (EV\_ExIt == CurrentEvent)

/\* No lower level SM(s) \*/

// Execute Exit actions here

Else

/\* No lower level SM(s) \*/

// Execute any internal event response here

End if

return ReturnEvent

End During