Assignment 3

SOEN331

**Part I: Overall EFSM**

The Overall EFSM is the tuple S = (Q, Σ1, Σ2, q0, V, Λ) where

Q = {Dormant, Init, error\_diagnosis, monitoring, Idle, safe\_shutdown}

Σ1 = {start, init\_ok, idle\_crash, idle\_rescue, begin\_monitoring, monitor\_crash, moni\_rescue, init\_crash, shutdown, kill, retry\_init, sleep}

Σ2 = {retry++, moni\_err\_msg, idle\_err\_msg, retry = 0}

q0: Dormant

V = {retry: }

Λ: Transition Specifications

**Part II: Refine Init**

The Refine Init EFSM is defined as follows: (Q, Σ1, Σ2, q0, V, Λ) where

Q = {boot\_hw, senchk, tchk, psichk, ready}

Σ1 = {hw\_ok, senok, t\_ok, psi\_ok}

Σ2 = {}

q0: boot\_hw

V = {}

Λ : Transition Specifications

**Part III: Refine Monitor**

The Refine Monitor EFSM is the tuple S = (Q, Σ1, Σ2, q0, V, Λ) where

Q = {monidle, regulate\_environment, lockdown, error\_diagnosis}

Σ1 = {after\_100ms, no\_contagion, contagion\_alert, purge\_succ}

Σ2 = {inlockdown = true, inlockdown = false}

q0: monidle

V = {inlockdown: Boolean}

Λ: Transition Specifications

**Part IV: Refine Lockdown**

The Refine Lockdown EFSM is the tuple S = (Q, Σ1, Σ2, q0, V, Λ) where

Q = {lockdown, prep\_vpurge, alt\_temp, risk\_assess, safe\_status, alt\_psi}

Σ1 = {initiate\_purge, tcyc\_comp, psicyc\_comp}

Σ2 = {risk: }

q0: monidle

V = {inlockdown: Boolean}

Λ: Transition Specifications

**Part V: Refine error diagnosis**

The Refine Monitor EFSM is the tuple S = (Q, Σ1, Σ2, q0, V, Λ) where

Q = {error\_rcv, applicable\_rescue, reset\_module\_data}

Σ1 = {}

Σ2 = {err\_protocol\_def = true, err\_protocol\_def = false, apply\_protocol\_rescues, reset\_to\_stable}

q0: error\_rcv

V = {err\_protocol\_def: Boolean}

Λ: Transition Specifications