

ME218C Final Project, 2016
Team 6
PAC SM Pseudocode

PAC State Machine

Module Variables: myPriority, PACState, ack_flag, timer_flag, CTRL0, CTRL1, CTRL2

InitPACSM

Takes nothing, returns nothing

Set priority

End InitPACSM

PostPACSM

Takes parameter ES_Event ThisEvent, returns true/false Returns ES_PostToService with this service's priority and event

End PostPACSM

RunPACSM

Takes parameter ES_Event ThisEvent, returns ES_Event ReturnEvent

PAC SM switch case statement

```
    Waiting4Pair State
        if the event is PAC pair
            Transmit pair packet
            Start Transit Timer
        If a packet is received and it is a status packet
            Else if status packet is good
                if the encrypted checksum of the last send control
packet matches the one received in the data packet
                    If the encrypted checksum matches
                        set ack flag
                        if timer flag set transmit new ctrl byte
                if status bit isn't set
                    unpair
                    reset all timers
                    clear ack flag
            If the 200ms timer has expired and we haven't gotten a status
packet back
                set timer flag
            if the transit timer times out
                Unpair and go back to waiting state
            if the retry timer times out
                retry send
                restart retry timer
            if you receive an unpair event
                unpair
                add 50% power
                subtract 50% power
                set turn to full right
            if you receive right release
                set turn to zero
                set turn to full left
```

```

        if you receive left release
            set turn to zero
        if you receive brake
            toggle brake
        if you recieve dance stop event
            turn off props
    Waiting for pairing confirmation state
        if packet recieved and it is a good status packet and pair bit
set
            save xbee address
            set state to wait for encryption confirmation
            send encryption packet
            set all timers
            clear timer flag and set ack flag
            post paired event to controller sm
        If transit timer timeout
            go back to waiting to pair
    Waiting for pairing confirmation
        if packet recieved and it is a good status packet
            go to paired state
            reset timers
        If transit timer timeout
            go back to waiting to pair state

```

End RunPACSM

setUnpair

Takes nothing, returns nothing

Set unpair bit

End setUnpair

resetUnpair

Takes nothing, returns nothing

Clear unpair bit

End resetUnpair

toggleBrake

Takes nothing, returns nothing

Toggle the brake bit and set prop to zero

End toggleBrake

turnOffPropFans

Takes nothing, returns nothing

Zero CTRL0 and CTRL1 bytes

End turnOffPropFans