To simply this:

Can we not just treat each pot as an object, and it only (more-or-less) needs to work out what it needs to do, rather than recording the combined state of everything as a distinctive state?

**Non-speed param modes:**

MANUAL,

CC

PC

**Speed pot param modes:**

MANUAL,

CC,

PC,

TAP,

CLK,

MIDI\_CLK

**Events**

* Tap tempo registers two switch presses
* 2 rising events on CLK IN
* 25x MIDI CLK status bytes received
* (valid) PC message received
* (valid) CC message received
* A given pot is wiggled
* TIM14 times out (will only timeout if in CLK or MIDI\_CLK mode)

**Actions based on events**

* Tap tempo registers two switch presses
  + Speed pot param mode will need to change, only if certain conditions are met:
    - If current mode is MANUAL, just change mode
    - If current mode is PC, just change mode
    - If current mode is CC, just change mode
    - If current mode is CLK, only move to next state if timed out
    - If current mode is MIDI\_CLK, only move to next state if timed out
  + Other params do not change state
* 2 rising events on CLK IN
  + Speed pot param mode will need to change, only if certain conditions are met:
    - If current mode is MANUAL, just change mode
    - If current mode is PC, just change mode
    - If current mode is CC, just change mode
    - If current mode is TAP, only move to next state if switch not depressed
    - If current mode is MIDI\_CLK, only move to next state if timed out
  + Other params do not change state
* 25x MIDI CLK status bytes received
  + Speed pot param mode will need to change, only if certain conditions are met:
    - If current mode is MANUAL, just change mode
    - If current mode is PC, just change mode
    - If current mode is CC, just change mode
    - If current mode is TAP, only move to next state if switch not depressed
    - If current mode is CLK, only move to next state if timed out
  + Other params do not change state
* (valid) PC message received
  + For all params except speed param pot, just change mode to PC
  + Speed pot param mode will need to change, only if certain conditions are met:
    - If current mode is MANUAL, just change mode to PC
    - If current mode is PC, no change
    - If current mode is CC, just change mode to PC
    - If current mode is TAP, only move to next PC state if switch not depressed
    - If current mode is CLK, only move to next state if timed out
    - If current mode is MIDI CLK, only move to next state if timed out
* (valid) CC message received
  + If CC is received for pot params except speed param pot, just change mode to CC
  + If CC is received for speed param pot, mode will need to change, only if certain conditions are met:
    - If current mode is MANUAL, just change mode to CC
    - If current mode is CC, no change
    - If current mode is PC, just change mode to CC
    - If current mode is TAP, only move to next PC state if switch not depressed
    - If current mode is CLK, only move to next state if timed out
    - If current mode is MIDI CLK, only move to next state if timed out
* A given pot is wiggled
  + If pot is wiggled for pot params except speed param pot, just change mode to MANUAL
  + If pot is wiggled for speed param pot, mode will need to change, only if certain conditions are met:
    - If current mode is MANUAL, no change
    - If current mode is CC, just change mode to MANUAL
    - If current mode is PC, just change mode to MANUAL
    - If current mode is TAP, only move to next MANUAL state if switch not depressed
    - If current mode is CLK, only move to next MANUAL state if timed out
    - If current mode is MIDI CLK, only move to next MANUAL state if timed out