DETECTION CYCLE OPTIONS V2

Basic Detection Period: (BDP)

POWER DOWN

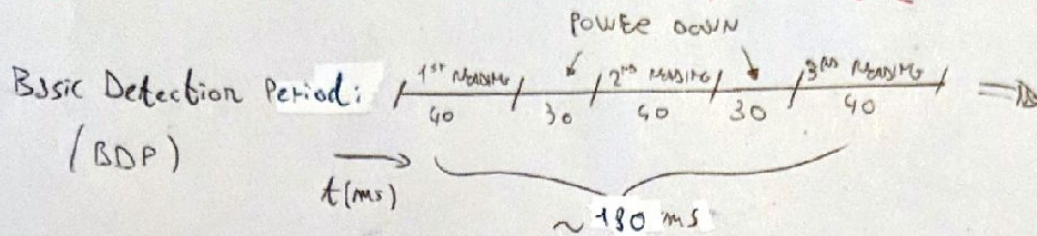| 1ST READING | 2ND READING | 3RD READING |
| 40 | 30 | 40 | 30 | 40 |

t (ms)

~180 ms

=> IN THE CURRENT VERSION, THIS CYCLE OUTPUTS A BOOLEAN VARIABLE.

THIS IS THE MAX ESTIMATION: ACTUAL LENGHT DEPENDS ON THE DISTANCE FOUND. 40 MS IS CALCULATED ASSUMING NO OBSTACLE IS FOUND.

(MORE COMPLEX DETECTION MIGHT BE IMPLEMENTED, SUCH AS: IF POSITIVE, OUTPUT AN AVERAGE OF ALL THE POSITIVES)
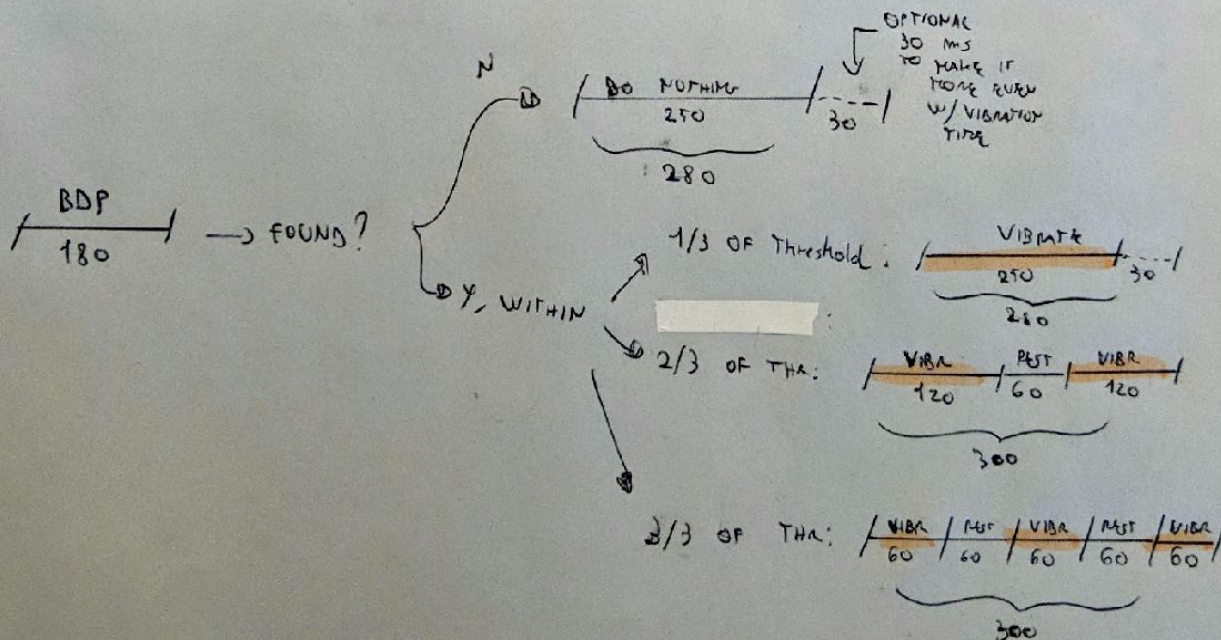
Option A: CONSECUTIVE BOOLEAN VIBRATION

| BDP |
| 180 |

-> FOUND?

Y -> VIBRATE 250

N -> DO NOTHING 250

Power Down (BOTH CASES)
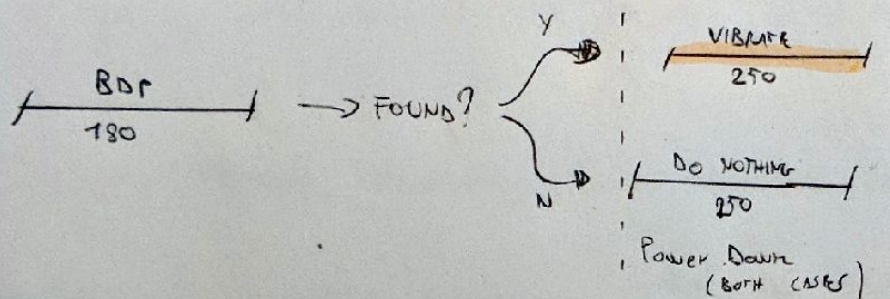
=> CYCLE DURATION: ~430 ms

VIBRATION TIME (IF ANY): 250 MS

Option B: CONSECUTIVE VARIABLE VIBRATION

| BDP |
| 180 |

-> FOUND?

N -> DO NOTHING 250 | 30

OPTIONAL 30 MS TO MAKE IT MORE EVEN W/ VIBRATION TIME

280

Y, WITHIN

1/3 OF Threshold: VIBRATE 250 | 30

280

2/3 OF THR.: VIBR 120 | REST 60 | VIBR 120

300

3/3 OF THR: VIBR 60 | REST 60 | VIBR 60 | REST 60 | VIBR 60

300

CYCLE DURATION: 460 ms ÷ 480 ms

VIBRATION TIME: 280 ms ÷ 300 ms

Option C: "PARALLEL" BOOLEAN VIBRATION

THE OUTPUT OF A CYCLE TAKES PLACE DURING THE NEXT ONE (VIBRATION & DETECTION DONE IN PARALLEL)

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        BDP            ( VIBR.)   SLEEP
 |———————————————|———(  OFF )|—————————/ FOUND?      ⌈ Y: VIBRATION ON
        180          (     )     60                  ⌊ N: VIBRATION OFF

 |—  —  —  —  —  —  —|
   VIBRATION ON OR                                        ↺ START AGAIN
   OFF   DEPENDING ON
     PREVIOUS CYCLE
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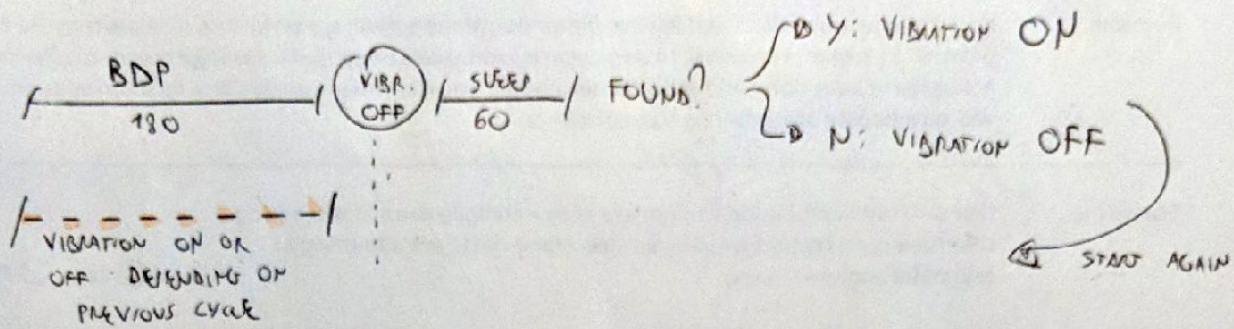
CYCLE DURATION: 240 ms

VIBRATION TIME, IF ANY: 180 ms (MAX, DEPENDS ON DETECTION TIME)

Option D: PARALLEL, INTERRUPT-DRIVEN VARIABLE VARIATION (OF DOOR)

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        BDP          SLEEP
 |——————————————|————————————/ FOUND ?      ⌈ N: DO NOTHING
        180           120                   |                           ⌈ (AS SEEN IN
      _____/                |                           |   Option D)
               300                          ⌊ Y: MIMIC THE VARIABLE VIBRATION
 |∿∿∿∿∿∿∿∿∿∿/                                   BEHAVIOR, ACCORDING TO THE
   INTERRUPT-DRIVEN                              DISTANCE DETECTED, BUT
   VIBRATION                                     USING INTERRUPTS!
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