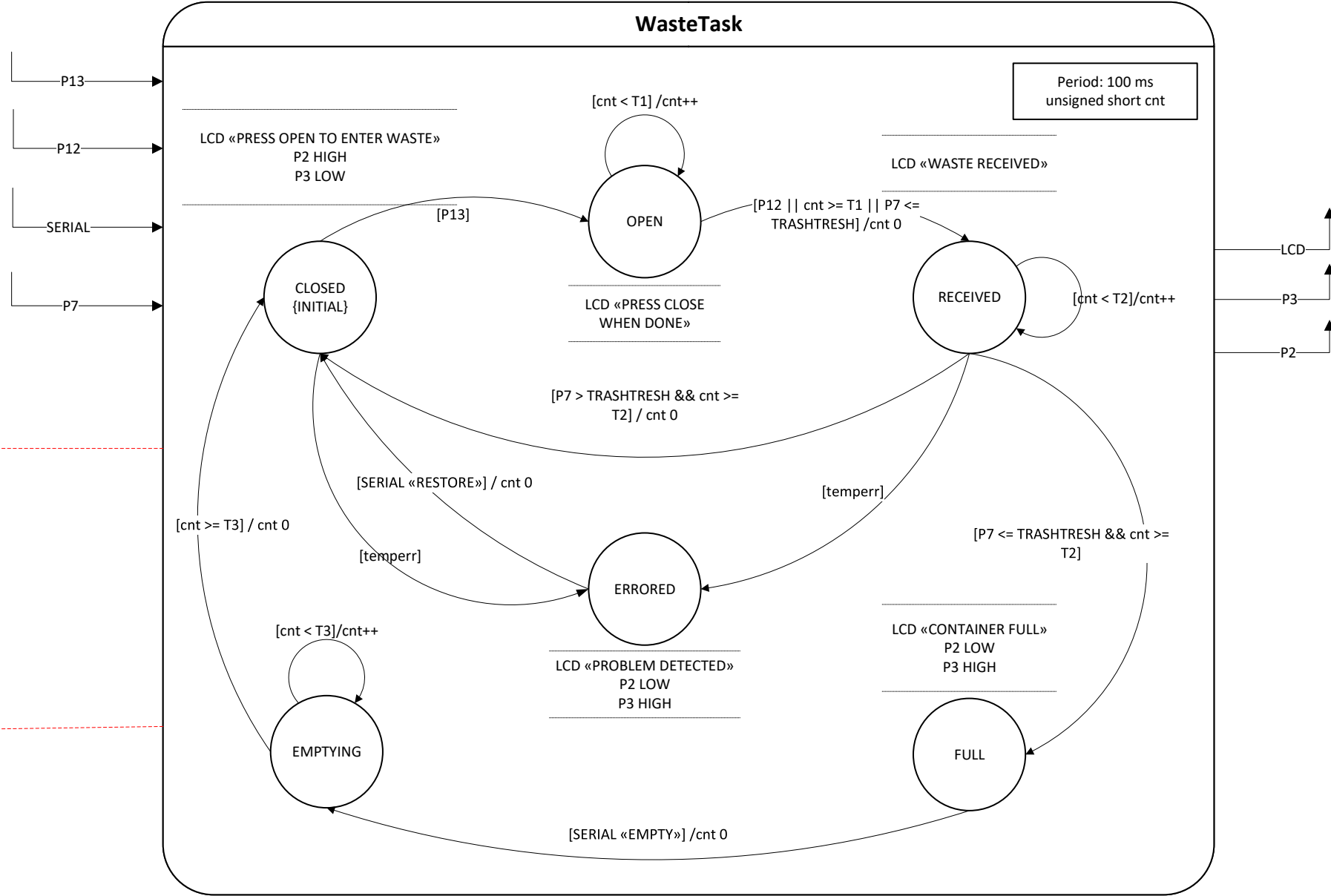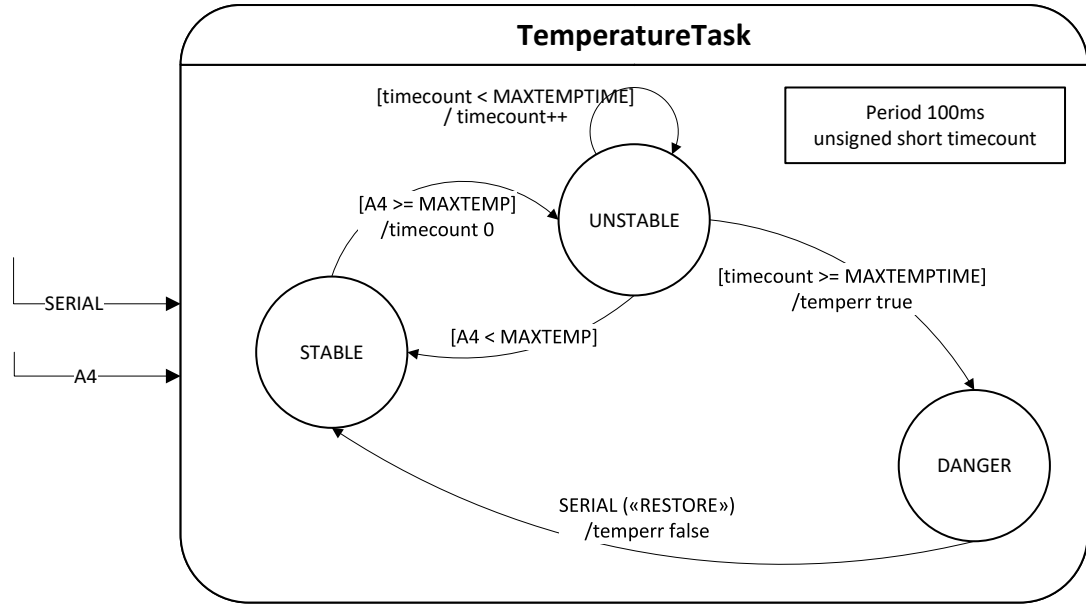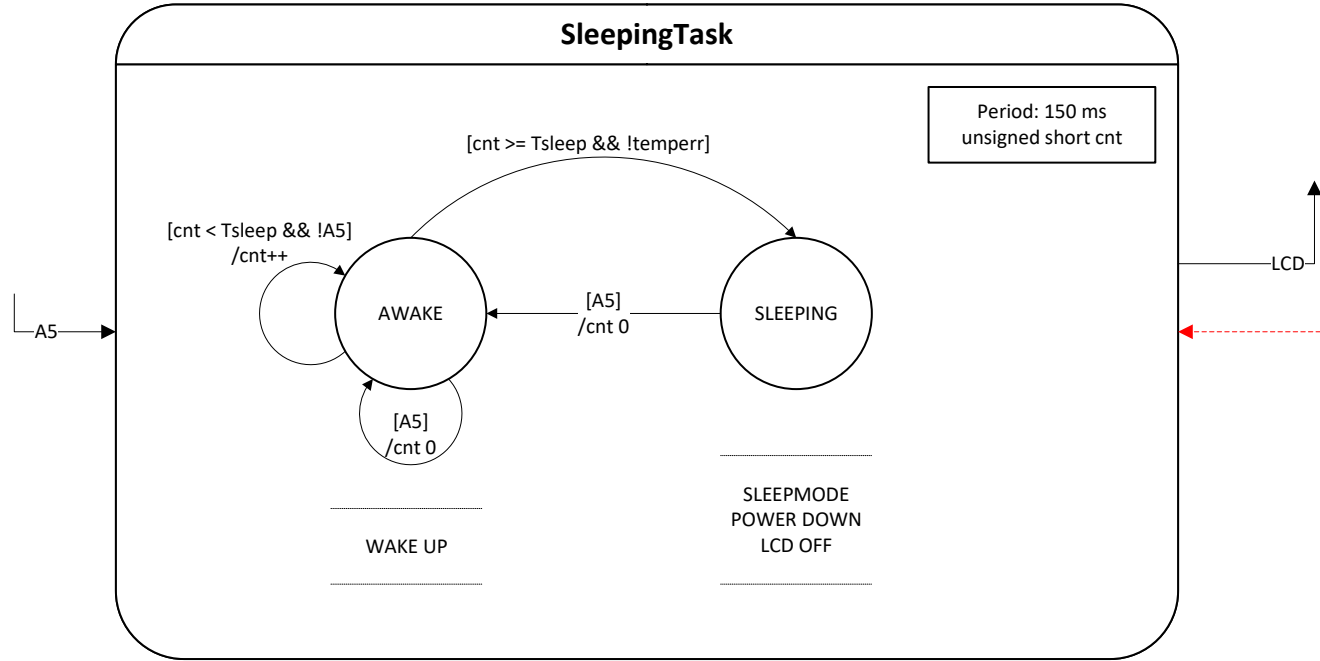P13 → BUTTON OPEN
P12 → BUTTON CLOSE
P10 → SERVO (DOOR)
P3 → RED LED
P2 → GREEN LED
A4 → TEMPERATURE SENSOR
A5 → MOTION DETECTOR (PIR)
P7 → WASTE SENSOR

Luca Casadei
Francesco Pazzaglia
Mattia Morri

SleepingTask

Period: 150 ms
unsigned short cnt

[cnt >= Tsleep && !temperr]

[cnt < Tsleep && !A5]
/cnt++

AWAKE

[A5]
/cnt 0

SLEEPING

[A5]
/cnt 0

LCD

WAKE UP

SLEEPMODE
POWER DOWN
LCD OFF

A5

TemperatureTask

Period 100ms
unsigned short timecount

[timecount < MAXTEMPTIME]
/ timecount++

UNSTABLE

[A4 >= MAXTEMP]
/timecount 0

[timecount >= MAXTEMPTIME]
/temperr true

[A4 < MAXTEMP]

STABLE

DANGER

SERIAL («RESTORE»)
/temperr false

SERIAL

A4

Depends on

Depends on

WasteTask

Period: 100 ms
unsigned short cnt

P13

P12

SERIAL

P7

LCD «PRESS OPEN TO ENTER WASTE»
P2 HIGH
P3 LOW

[cnt < T1] /cnt++

OPEN

LCD «PRESS CLOSE
WHEN DONE»

[P13]

CLOSED
{INITIAL}

[P12 || cnt >= T1 || P7 <=
TRASHTRESH] /cnt 0

LCD «WASTE RECEIVED»

RECEIVED

[cnt < T2]/cnt++

LCD

P3

P2

[P7 > TRASHTRESH && cnt >=
T2] / cnt 0

[SERIAL «RESTORE»] / cnt 0

[temperr]

[P7 <= TRASHTRESH && cnt >=
T2]

[cnt >= T3] / cnt 0

[temperr]

ERRORED

LCD «PROBLEM DETECTED»
P2 LOW
P3 HIGH

[cnt < T3]/cnt++

EMPTYING

LCD «CONTAINER FULL»
P2 LOW
P3 HIGH

FULL

[SERIAL «EMPTY»] /cnt 0