

## Flight Software Requirements: Possible Solutions

F1: When a packet of data is sent through the XBee on-board module, a variable c\_packet is uploaded. c\_packet += 1 and its value saved in the SD card; in setup() provide to write an instruction that import that value; when the mission starts, set this value to zero in the SD card.

F2: GPS with internal clock, with a different battery (ex: watch battery)

F5 - F6: When 'SIMULATION ENABLE' and 'SIMULATION ACTIVATE'

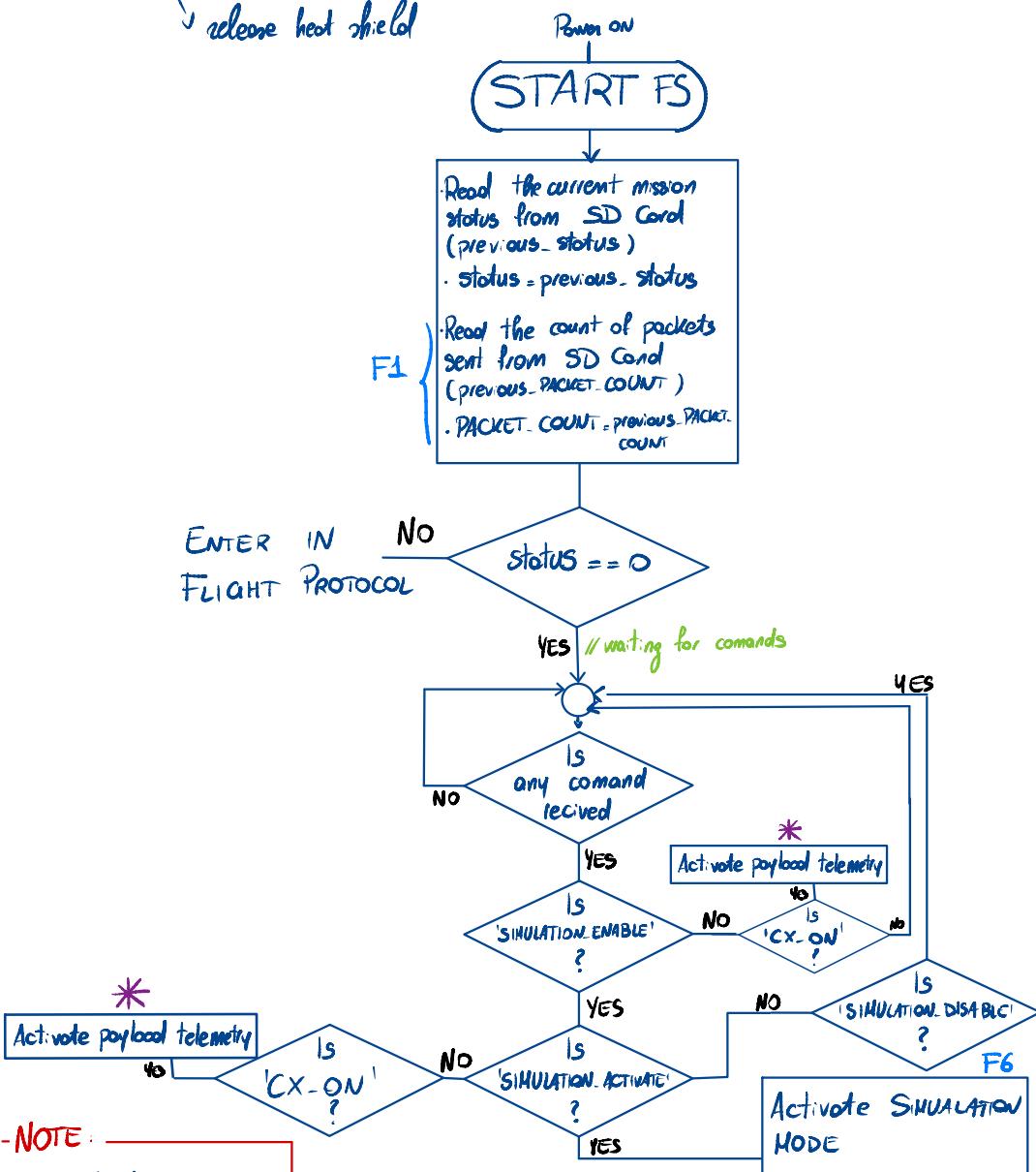
main program calls a function 'Simulation()' like this:

while (Command != 'SIMULATION STOP')

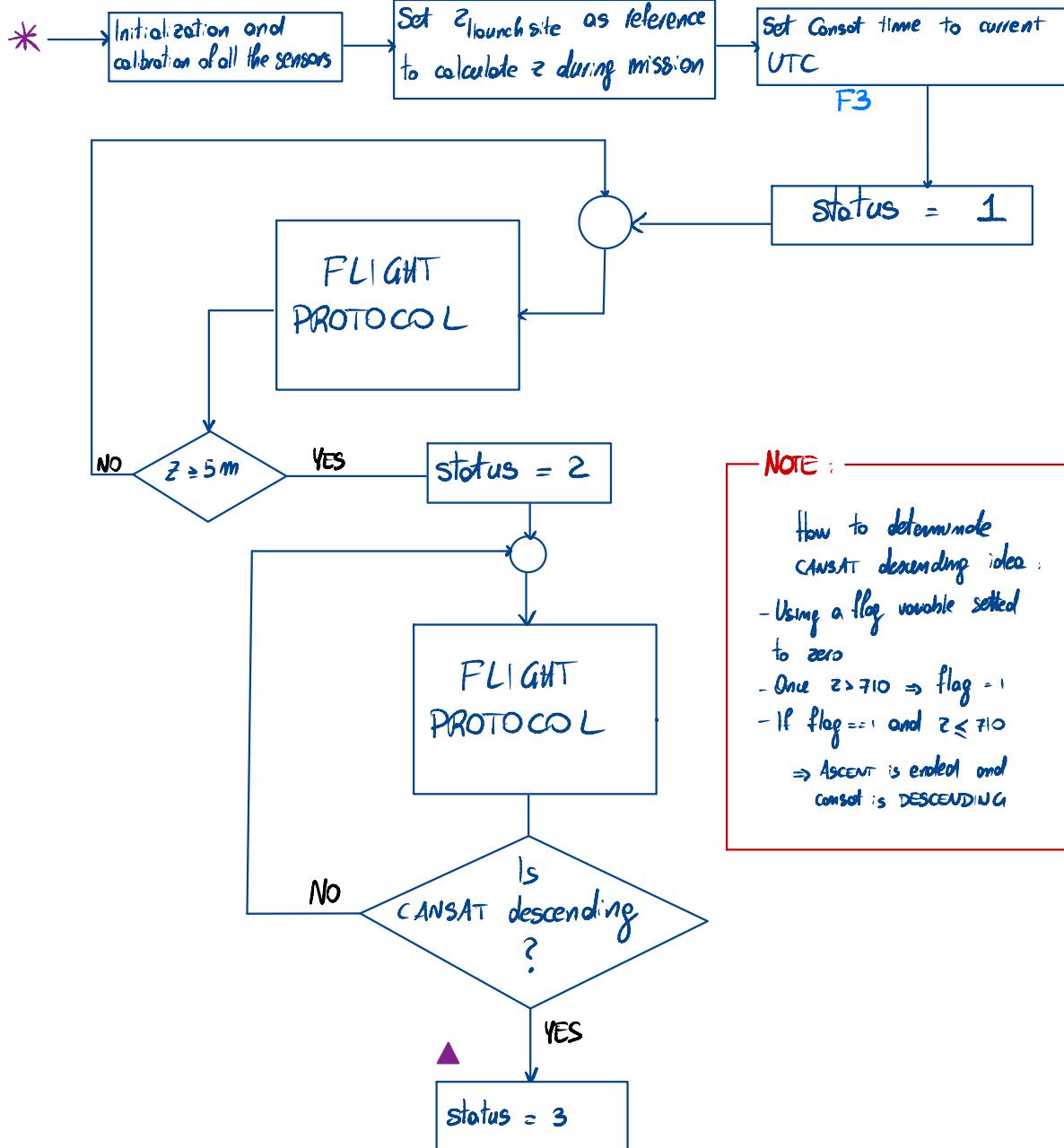
read the input data from the CSV file  
act as if the data received are sent by  
the sensors

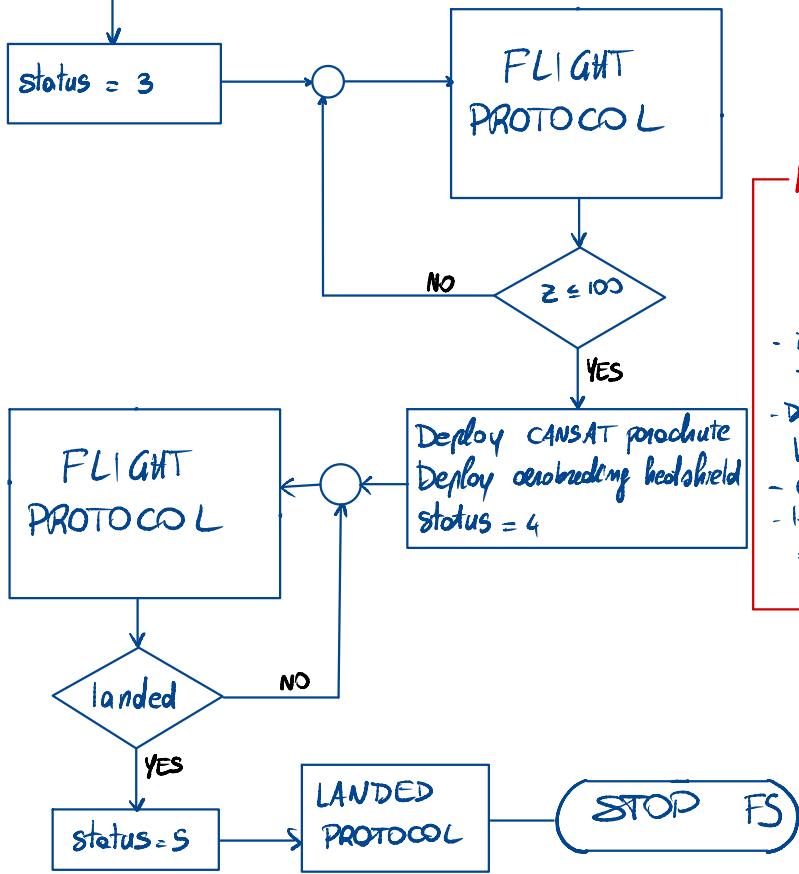
At this point, during simulation, stop reading sensors  
output to save MCU rapid memory

$Z_{MAX} = 725 \text{ m}$   
 $Z^* = 100 \text{ m}$   
 ↗ deploy parachute  
 ↗ release heat shield



- NOTE -
- status level meaning
  - 0: first power on
  - 1: "ready to go"
  - 2: ASCENT PHASE
  - 3: DESCENT PHASE 1
  - 4: DESCENT PHASE 2
  - 5: landed



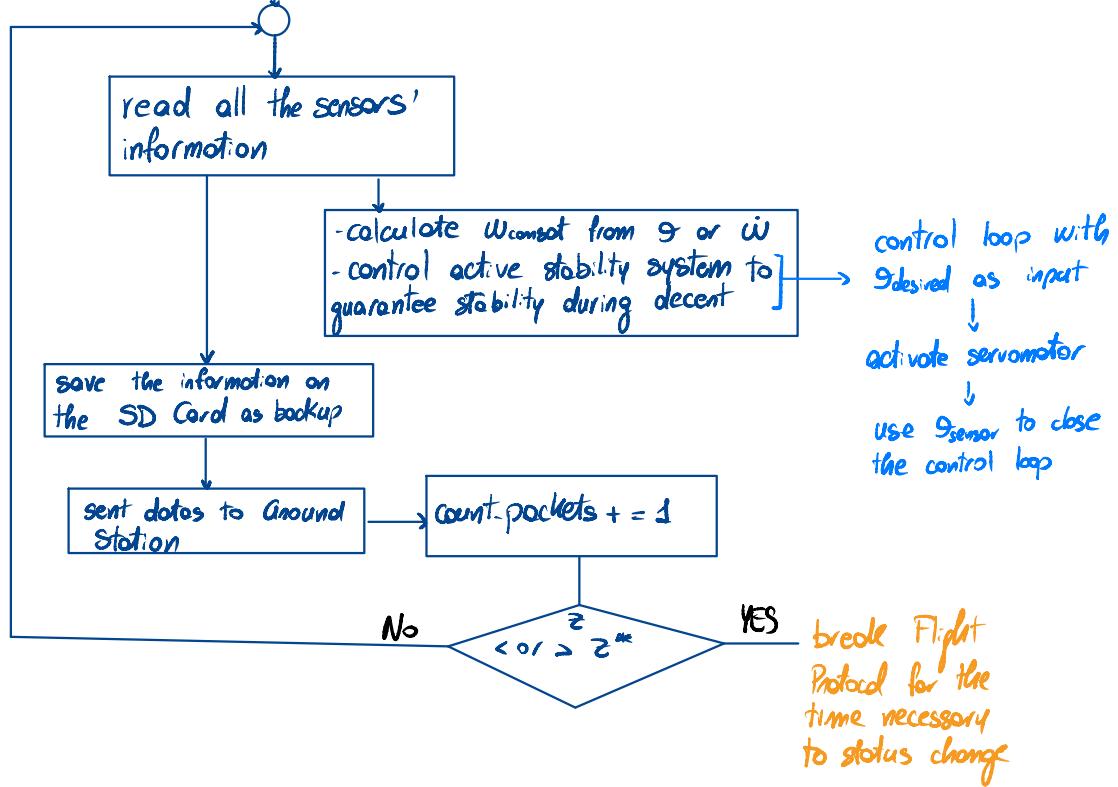


**NOTE :**

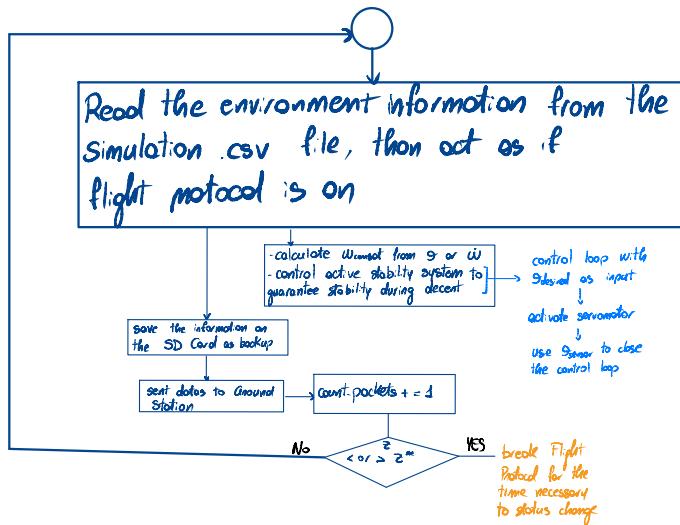
How to determine  
CANSAT is landed idea

- if  $Z < 10$  start a timer of 1 minute
- During this minute save V data
- calculate VM
- If  $VM < 0.5 \text{ m/s}$
- ⇒ LANDED

## FLIGHT PROTOCOL



## SIMULATION MODE



# LANDED PROTOCOL

make the buzzer play something funny

