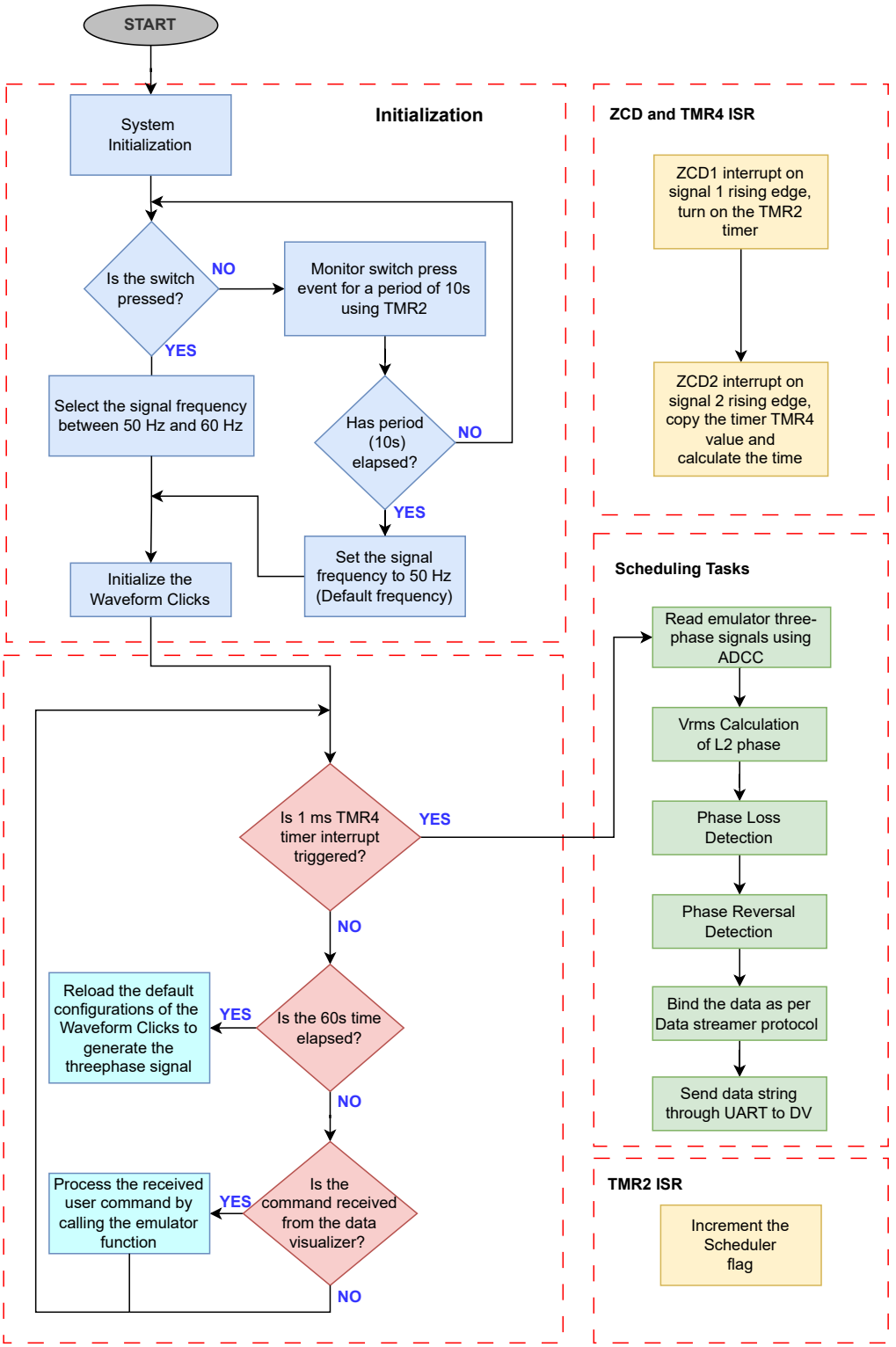
START
Initialization
System Initialization
Is the switch pressed?
NO
YES
Monitor switch press event for a period of 10s using TMR2
Has period (10s) elapsed?
NO
YES
Select the signal frequency between 50 Hz and 60 Hz
Set the signal frequency to 50 Hz (Default frequency)
Initialize the Waveform Clicks
ZCD and TMR4 ISR
ZCD1 interrupt on signal 1 rising edge, turn on the TMR2 timer
ZCD2 interrupt on signal 2 rising edge, copy the timer TMR4 value and calculate the time
Scheduling Tasks
Is 1 ms TMR4 timer interrupt triggered?
YES
NO
Read emulator three-phase signals using ADCC
Vrms Calculation of L2 phase
Phase Loss Detection
Phase Reversal Detection
Bind the data as per Data streamer protocol
Send data string through UART to DV
Is the 60s time elapsed?
YES
NO
Reload the default configurations of the Waveform Clicks to generate the threephase signal
Is the command received from the data visualizer?
YES
NO
Process the received user command by calling the emulator function
TMR2 ISR
Increment the Scheduler flag