|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| number | Tasks | Time Requirement | Read memory | Write memory |
| T1: Update pressure:  if Well-bore physical behavior is in steady state | 1)Calculating flow rate in **steady state** mode  3) reducing misfit  4)Evaluating pressure: writing pressure |  | Flow rate surface measurements from sensors **#Memory 5**  calculated flow rate from **#Memory 6** | # sensor measurements in **#Memory 5**  #calculated flow rate in **#Memory 6**  Pressure in **#Memory 10** |
| T2: Update Pressure:  if Well-bore physical behavior is in transient state | 1) Event: Calculating flow rate **in transient mode**  3)reducing misfit  4)Evaluating pressure: writing Pressure |  | Flow rate surface measurements from sensors **#Memory 5**  calculated flow rate from **#Memory 6** | # sensor measurements in **#Memory 5**  #calculated flow rate in **#Memory 6**  Pressure in **#Memory 10** |
| T3: Making decision | 6) Comparison task to compare the evaluated pressure with the maximum allowed pressure and sending true or false command to the machinery(Pump) | The command must be sent to the pump **within 5 msec** from the time that surface pressure in memory 5 is read. | **#Memory 10** | **#Memory 20** (bool) |

Task 2 is an event: has periority over task 1. If the state of the well bore is in trasnient, task 2 preempt task 1 and will calculate pressure and write in memory 10.

flowrate = emergency flowrate

Normal pressure

Abnormal pressure

Normal pressure