Schedulability measurements report

Rate Monotonic Utilization Bound:

- U = (2.5 / 5) + (4.5 / 15) + (3.5 / 20) = 0.975
- Urm = 3 * (2 ^ (⅓) - 1) = 0.799
- U > Urm
- System guaranteed not schedulability

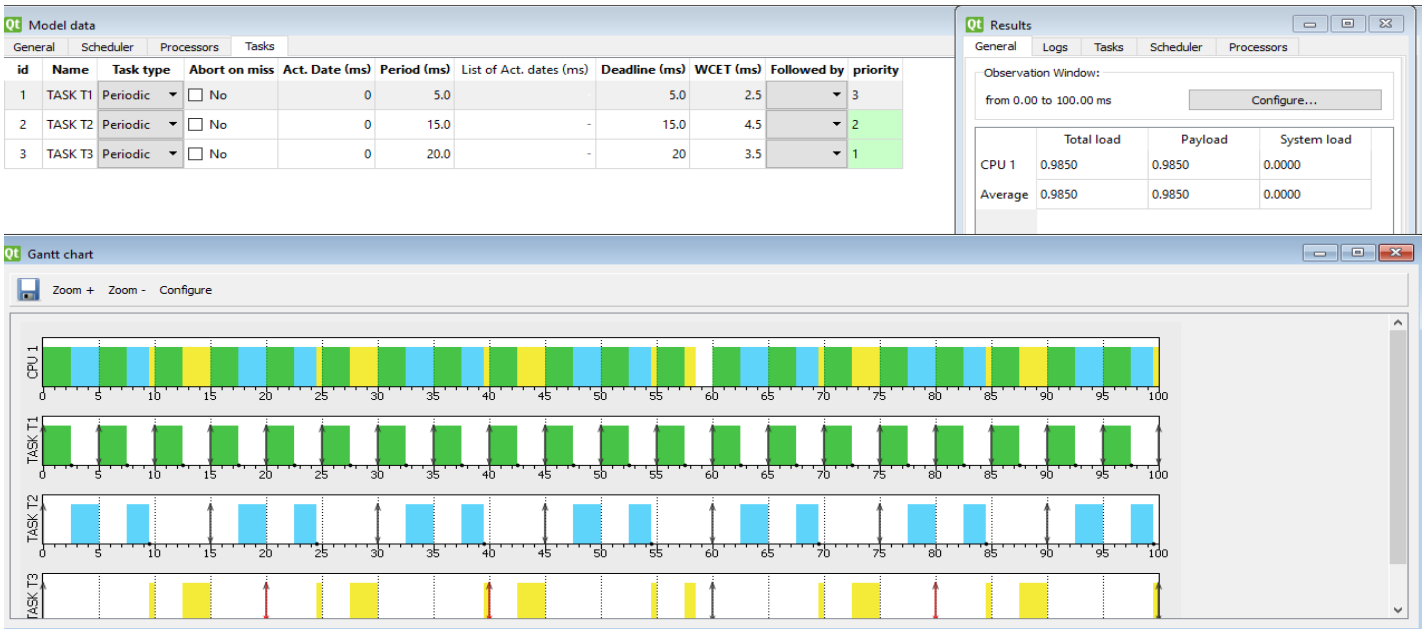
Time Demand Analysis:

- Time demand for T1 (priority = 3)
  - W(1) = 2.5 + 0 = 2.5
  - W(2) = 2.5 + 0 = 2.5
  - W(3) = 2.5 + 0 = 2.5
  - W(4) = 2.5 + 0 = 2.5
  - W(5) = 2.5 + 0 = 2.5
  - W(5) < D = 2.5 < 5 --------> **T1 is schedulable**

- Time demand for T2 (priority = 2)
  - W(1) = 4.5 + (1/5) * 2.5 = 7
  - W(2) = 4.5 + (2/5) * 2.5 = 7
  - W(3) = 4.5 + (3/5) * 2.5 = 7
  - W(4) = 4.5 + (4/5) * 2.5 = 7
  - W(5) = 4.5 + (5/5) * 2.5 = 7
  - W(6) = 4.5 + (6/5) * 2.5 = 9.5
  - W(7) = 4.5 + (7/5) * 2.5 = 9.5
  - W(8) = 4.5 + (8/5) * 2.5 = 9.5
  - W(9) = 4.5 + (9/5) * 2.5 = 9.5
  - W(10) = 4.5 + (10/5) * 2.5 = 9.5
  - W(11) = 4.5 + (11/5) * 2.5 = 12
  - W(12) = 4.5 + (12/5) * 2.5 = 12
  - W(13) = 4.5 + (13/5) * 2.5 = 12
  - W(14) = 4.5 + (14/5) * 2.5 = 12
  - W(15) = 4.5 + (15/5) * 2.5 = 12
  - W(15) < D = 12 < 15 ------> **T2 is schedulable**

- Time demand for T3 (priority = 1)
  - W(1) = 3.5 + 4.5 * (1/15) + (1/5) * 2.5 = 10.5
  - W(2) = 3.5 + 4.5 * (2/15) + (2/5) * 2.5 = 10.5
  - W(3) = 3.5 + 4.5 * (3/15) + (3/5) * 2.5 = 10.5
  - W(4) = 3.5 + 4.5 * (4/15) + (4/5) * 2.5 = 10.5
  - W(5) = 3.5 + 4.5 * (5/15) + (5/5) * 2.5 = 10.5
  - W(6) = 3.5 + 4.5 * (6/15) + (6/5) * 2.5 = 13
  - W(7) = 3.5 + 4.5 * (7/15) + (7/5) * 2.5 = 13
  - W(8) = 3.5 + 4.5 * (8/15) + (8/5) * 2.5 = 13
  - W(9) = 3.5 + 4.5 * (9/15) + (9/5) * 2.5 = 13
  - W(10) = 3.5 + 4.5 * (10/15) + (10/5) * 2.5 = 13
  - W(11) = 3.5 + 4.5 * (11/15) + (11/5) * 2.5 = 15.5
  - W(12) = 3.5 + 4.5 * (12/15) + (12/5) * 2.5 = 15.5
  - W(13) = 3.5 + 4.5 * (13/15) + (13/5) * 2.5 = 15.5
  - W(14) = 3.5 + 4.5 * (14/15) + (14/5) * 2.5 = 15.5
  - W(15) = 3.5 + 4.5 * (15/15) + (15/5) * 2.5 = 15.5
  - W(16) = 3.5 + 4.5 * (16/15) + (16/5) * 2.5 = 22.5
  - W(17) = 3.5 + 4.5 * (17/15) + (17/5) * 2.5 = 22.5
  - W(18) = 3.5 + 4.5 * (18/15) + (18/5) * 2.5 = 22.5
  - W(19) = 3.5 + 4.5 * (19/15) + (19/5) * 2.5 = 22.5
  - W(20) = 3.5 + 4.5 * (20/15) + (20/5) * 2.5 = 22.5
  - W(20) > D = 22.5 > 20 ----------> **T3 is not schedulable**

Simso:



As shown the system is not schedulable, because T3 is not schedulable and miss it's deadline.