

Clarification Request

References: TP 20.0.1 test 7.3.1.X41.Y3

Date of BTL-WG Response: July 14, 2022

Background:

7.3.1.X41.Y3 Blink-Warn WARN_RELINQUISH Command Test

...

Test Steps:

1. VERIFY Priority_Array = V1, ARRAY INDEX = PTY1
2. VERIFY Blink_Warn_Enable = TRUE
3. VERIFY Egress_Time > 0
4. VERIFY Egress_Active = FALSE
5. WRITE PROP_REF = C1, PRIORITY = PTY1
6. T1 = current local time
7. BEFORE **Internal Processing Fail Time**
CHECK (blink-warn occurred)
8. WHILE (Egress_Active = TRUE)
VERIFY Priority_Array = V1, ARRAY INDEX = PTY1
9. T2 = current local time
10. VERIFY Egress_Time \approx (T1 - T2) +/- **Internal Processing Fail Time**
11. VERIFY Priority_Array = NULL, ARRAY INDEX = PTY

Problems:

In **step 8** there is a race condition. In the “while” clause Egress_Active is compared to True. After that the value in the Priority_Array is compared. But Egress_Active could change just before reading the Priority_Array. The chance for the problem to occur in testing is increased by the implied WAIT internal processing time inside the VERIFY statement.

The same pattern can be found at least in test 7.3.1.X41.Y2 also step 8.

Additional erratum like problem in **step 10**. Instead of (T1 - T2) it should rather read (T2 - T1).

Also in step 10 the mentioning of “+/- Internal Processing Fail Time” is misleading because the Check in step 7 can take up arbitrary amount of time, probably well above Internal Processing Fail Time.

Questions:

1. Will the tests be rewritten into a form, that avoids race conditions?
2. Will step 10 be fixed.

Response:

1. Yes
2. Yes

The BTL-WG agrees that the test is incorrect in the way noted above. To resolve the issues, the test will be modified, starting at step 7, as noted below:

```
7. BEFORE Internal Processing Fail Time  
—CHECK (blink warn occurred)  
7.  VERIFY Priority_ Array = V1, ARRAY INDEX = PTY1  
8. WHILE (Egress_Active = TRUE)  
    WAIT 1s  
—VERIFY Priority_ Array = V1, ARRAY INDEX = PTY1  
9. T2 = current local time  
10. CHECK(blink warn occurred)  
11. VERIFY Egress_Time ~= (T2 – T1) (T1 – T2) +/- Internal Processing Fail  
Time  
12. VERIFY Priority_ Array = NULL, ARRAY INDEX = PTY
```

Test 7.3.1.X41.Y2 will be modified in a similar way.