<center>**Clarification Request**</center>

References: 135-2016 / Test Package 16.1

Date of BTL-WG Response: <u>13-February-2020</u>

    ☒All Actions Necessitated have been Completed

Background: BTL Specified Tests-16.1.Final Test 8.4.X9 / 8.5.X9.15

- ***8.4.X9 CHANGE_OF_RELIABILITY with the FAULT_OUT_OF_RANGE Algorithm***

Purpose: To verify the correct operation of the FAULT_OUT_OF_RANGE event algorithm.

Test Concept: Select a fault detecting object O1 which is configured to use the FAULT_OUT_OF_RANGE algorithm. Ensure that no other fault conditions exist in the object. Set pMonitoredValue to outside the range of values considered to be normal for the object. Verify the correct transition is generated. The fault condition is then removed. It is verified that O1 generates the correct notifications.

Test Configuration: O1 is configured to detect and report faults, to have no fault conditions present. The Issue_Confirmed_Notifications property shall have a value of TRUE. The event-generating objects shall be in a NORMAL state at the start of the test.

Test Steps:
1. *VERIFY pCurrentReliability = NO_FAULT_DETECTED*
2. *VERIFY pCurrentState = NORMAL*
3. *IF (pMonitoredValue is writable) THEN*
   WRITE pMonitoredValue = (a value less than pMinimumNormalValue | a value greater than

                          pMaximumNormalValue)
   ELSE
   MAKE (pMonitoredValue = a value less than pMinimumNormalValue | a value greater than

                          pMaximumNormalValue)
4. *BEFORE **Notification Fail Time**,*
   RECEIVE ConfirmedEventNotification-Request,
      'Process Identifier' =   (any valid process identifier),
      'Initiating Device Identifier' =   IUT,
      'Event Object Identifier' =   O1,
      'Time Stamp' =   (any valid time stamp),
      'Notification Class' =   (the class corresponding to the object O1 being tested),
      'Priority' =   (the value configured to correspond to a TO_FAULT transition),
      'Event Type' =   CHANGE_OF_RELIABILITY,
      'Message Text' =   (optional, any valid message text),
      'Notify Type' =   EVENT | ALARM,
      'AckRequired' =   TRUE | FALSE,

       'From State' =   NORMAL,
       'To State' =   FAULT,
       'Event Values' =   (pCurrentReliability,   pStatusFlags,
pMonitoredValue,
                <mark>*pMinimumNormalValue | pMaximumNormalValue)*</mark>

5. *TRANSMIT BACnet-SimpleACK-PDU*
6. *VERIFY pCurrentReliability = UNDER_RANGE | OVER_RANGE*
7. *VERIFY pCurrentState = FAULT*
8. *VERIFY pStatusFlags = (TRUE, TRUE,?,?)*
9. *IF (pMonitoredValue is writable) THEN*
    *WRITE pMonitoredValue = (a value greater than or equal to pMinimumNormalValue,
and pMonitoredValue*
           is less than or equal to pMaximumNormalValue)
  ELSE
    *MAKE (pMonitoredValue = a value, greater than or equal to pMinimumNormalValue,
and pMonitoredValue*
           is less than or equal to pMaximumNormalValue)
10. *BEFORE **Notification Fail Time**,*
    RECEIVE ConfirmedEventNotification-Request,
       'Process Identifier' =   (any valid process identifier),
       'Initiating Device Identifier' =   IUT,
       'Event Object Identifier' =   O1,
       'Time Stamp' =   (any valid time stamp),
       'Notification Class' =   (the class corresponding to the object O1 being
tested),
       'Priority' =   (the value configured to correspond to a TO_FAULT
transition),
       'Event Type' =   CHANGE_OF_RELIABILITY,
       'Message Text' =   (optional, any valid message text),
       'Notify Type' =   EVENT | ALARM
       'AckRequired' =   TRUE | FALSE,
       'From State' =   FAULT,
       'To State' =   NORMAL,
       'Event Values' =   (pCurrentReliability,   pStatusFlags,
pMonitoredValue,
                <mark>*pMinimumNormalValue |*</mark>
<mark>*pMaximumNormalValue)*</mark>

11. *TRANSMIT BACnet-SimpleACK-PDU*
12. *VERIFY pCurrentReliability = NO_FAULT_DETECTED*
13. *VERIFY pCurrentState = NORMAL*
14. *VERIFY pStatusFlags = (FALSE, FALSE,?, ?)*

Problem:
The BTL Specified Tests 16.1.Final tests 8.4.X9 / 8.5.X9.15 request that 'event value' include the pMinimumNormalValue | pMaximumNormalValue in Step 4 and 10

The problem is that I can't find this requirement in the BACnet Standart
The BACnet Standart 135-2016 define the event parameters in:
13.2.5.3 Fault Event Notifications
The content of the property-values parameter of CHANGE_OF_RELIABILITY event notifications depends on the type of the event-initiating object. The property values required to be conveyed are specified in Table 13-5, and shall be included in the order shown in the table. Object types that are not included in Table 13-5 are not required to include any extra properties in CHANGE_OF_RELIABILITY notifications.

Question:
1. Should the tests be fixed by modifying the 'Event Values' *in Step 4 and 10?*
    Replace

    'Event Values' = (pCurrentReliability, pStatusFlags, pMonitoredValue, pMinimumNormalValue | pMaximumNormalValue)

    by

    'Event Values' = (pCurrentReliability, pStatus, Flags, (A list of valid values for properties required to be reported for O1, and 0 or more other properties of O1))

2. In TEST PLAN Revision 16.1, the test designation is different from Specified Tests 16.1.
    Replace

    BTL - 8.5.X9 - CHANGE_OF_RELIABILITY with the
    FAULT_OUT_OF_RANGE Algorithm (UnconfirmedEventNotification)

    by

    BTL - 8.5.X9.15 - CHANGE_OF_RELIABILITY with the
    FAULT_OUT_OF_RANGE Algorithm (UnconfirmedEventNotification)

Response:
1. **YES**

2. **There are inconsistencies of test numbering between confirmed and unconfirmed tests for change of reliability. The inconsistencies will be fixed.**