Clarification Request

References: BTL TP 23.0 135.1-2019-7.3.2.20.5

Date of BTL-WG Response: <u>2023-02-16</u>

Background:

7.3.2.20.5 Number_Of_States and State_Text Size Change Test which references 7.3.2.18.5.

7.3.2.18.5 Number_Of_States and State_Text Size Change Test
Dependencies: WriteProperty Service Execution Tests, 9.22

BACnet Reference Clauses: 12.18.11 and 12.18.12

Purpose: This test case verifies that when the value of the Number_Of_States property is changed, the size of the State_Text array is changed accordingly to the same size. If the Number_Of_States and the size of the State_Text arrays cannot be changed, then this test shall not be performed. If Protocol_Revision is not present, or has a value less than 4, then this test shall not be performed.

Configuration Requirements: The IUT shall be configured with a Multi-state Input object with writable Number_Of_States and resizable State_Text arrays.

Test Concept: Number_Of_States and the State_Text array are set to a certain size. They are then increased by writing the Number_Of_States, decreased by writing the State_Text array, increased by writing the State_Text array and decreased by writing Number_Of_States.

Test Steps:

1. TRANSMIT WriteProperty-Request,
        'Object Identifier' =   (the Multi-state Input object being tested),
        'Property Identifier' =   Number_Of_States,
        'Property Value' =   2
2. RECEIVE Simple-ACK-PDU
3. VERIFY Number_Of_States = 2
4. VERIFY State_Text = 2, ARRAY INDEX = 0
5. TRANSMIT WriteProperty-Request,
        'Object Identifier' =   (the Multi-state Input object being tested),
        'Property Identifier' =   Number_Of_States,
        'Property Value' =   (some value greater than 2)
6. RECEIVE Simple-ACK-PDU
7. VERIFY Number_Of_States = (the value written in step 5)
8. VERIFY State_Text = (the value written in step 5), ARRAY INDEX = 0
9. TRANSMIT WriteProperty-Request,
        'Object Identifier' =   (the Multi-state Input object being tested),
        'Property Identifier' =   State_Text,
        'Property Value' =   (State_Text array of length 2)
10. RECEIVE Simple-ACK-PDU
11. VERIFY Number_Of_States = 2
12. VERIFY State_Text = 2, ARRAY INDEX = 0
13. TRANSMIT WriteProperty-Request,
        'Object Identifier' =   (the Multi-state Input object being tested),
        'Property Identifier' =   State_Text,

'Property Value' =   (State_Text array of length greater than 2)
14. RECEIVE Simple-ACK-PDU
15. VERIFY Number_Of_States = (the length of the array written in step 13)
16. VERIFY State_Text = (the length of the array written in step 13), ARRAY INDEX = 0
17. TRANSMIT WriteProperty-Request,
     'Object Identifier' =   (the Multi-state Input object being tested),
     'Property Identifier' =   Number_Of_States,
     'Property Value' =   2
18. RECEIVE Simple-ACK-PDU
19. VERIFY State_Text = (an array consisting of elements 1 & 2 from the array written in step 13)
20. VERIFY Number_Of_States = 2

12.20.10 Number_Of_States
This property, of type Unsigned, defines the number of states the Present_Value may have. The Number_Of_States property shall always have a value greater than zero. If the value of this property is changed, the size of the State_Text array, if present, shall also be changed to the same value. If the Number_of_States property value becomes less than the value of the Present_Value, the object shall have a Reliability of MULTI_STATE_OUT_OF_RANGE as long as this situation remains, unless the object is out of service. It is a local matter whether Priority_Array, Relinquish_Default, Present_Value, Alarm_Values, and Fault_Values properties, if present, are modified when the Number_of_States property value becomes less than their current values. If any of those properties other than Present_Value are out of range, the value of the Reliability property shall remain CONFIGURATION_ERROR, unless the object is out of service.

12.20.11 State_Text
This property, of type BACnetARRAY of CharacterString, contains strings representing descriptions of all possible states of the Present_Value. The number of descriptions matches the number of states defined in the Number_Of_States property. The Present_Value, interpreted as an integer, serves as an index into the array. If the size of this array is changed, the Number_Of_States property shall also be changed to the same value.

Problem:
The Purpose of the test states that this test can be skipped if either Number_Of_States or State_Text is not writable. This allows a device that supports writing either Number_Of_States or State_Text, but not both, to not be fully tested.

Question:

1. Should the test be modified to allow a device that supports writing either Number_Of_States or State_Text but not both to be tested?

RESPONSE:

1. Yes.