



Testing and Conformance Clarification-Request No.: 20071109-21

(Request-Nr, assigned by moderator: yyyyymmxx where xx=sequence# within the month)

Request from: rene.kaelin@siemens.com

Stage:

- Request
- Listed by moderator
- Analysis by (TGTC or individual):.....
- Resolved

Reference: [referenced document(s) with number and revision]

7.3.2.22.X1.2 Internally Written Datatypes Test, NULL Values and Priority_Arrays

7.3.2.22.X1.4 Externally Written Datatypes Test, NULL values and Priority_Arrays

Background:

Both:

This test specifications are wrong. With NULL as a Value in the weekly schedule the consequence is that schedule-default will be written to present-value and to the referenced object.

- With V1=nonNull and V2=NULL then in Step 5 and 6 the Value is not V2 but schedule-default
- NULL is only written when schedule-default is NULL

7.3.2.22.X1.4 Externally Written Datatypes Test, NULL values and Priority_Arrays

The Configuration Requirement 'The TD shall be configured to support the WriteProperty-Request service but not WritePropertyMultiple-Request in the Protocol_Services_Supported property of its Device object.' is quite strange. The receive of writes is not easy and implies that the writes are somehow sent to the TD. I propose to check the writes with the resulting present-value of the referenced external object.

Question / proposed solution:

Proposed solution:

Rework of test specification with BTL-wg.

Check actual implementation of test script.

Response:

[By BIG-EU TGTC or by BTL-WG]

[BTL-WG]:

Tests BTL-7.3.2.22.X1.4 and BTL-7.3.2.22.X1.2 have been modified to allow execution on revision 4 schedules. The tests are included below for your reference.

Test BTL-7.3.2.22.X1.4, the configuration requirements and step 5 include the reference to the TD and therefore no change is required.

7.3.2.22.X1.2 Internally Written Datatypes Test, NULL Values and Priority_Arrays

Reason for Change: Originally submitted to SSPC in SED-004. Additional changes have been made to allow for UTCTimeSynchronization and handle schedules of protocol-revision 4 and beyond. There is no new SSPC proposal.

Dependencies: TimeSynchronization Service Execution Tests, 9.30; UTCTimeSynchronization Service Execution Tests, 9.31

BACnet Reference Clauses: 12.24, 12.24.10

Purpose: This test verifies that the Schedule object writes NULLs to priority arrays (via Present_Value) within the same device.

Test Concept: Two Date/Time values, D_1 and D_2 , are chosen by the TD based on the criteria in Table 7-X2 such that D_1 is sufficiently different from current time to cause a Schedule evaluation when the time is changed to D_1 , and setting the time to D_2 from D_1 will cause a Schedule evaluation that will cause it to write value V_2 . These values may be chosen based on the Schedule object's existing configuration, or the Schedule object, S, may be configured with such values, and either V_1 or V_2 , but not both, has datatype NULL. The values are written to a Present_Value property with the priority designated by the Schedule object's Priority_For_Writing property, X. *For devices of protocol revision 4 or higher, the Schedule_Default shall be set to NULL and the schedule shall be configured such that at time D_1 or D_2 , but not both, the schedule shall take on the value of Schedule_Default.*

Configuration Requirements: The IUT shall be configured with a Schedule object, S, such that the time periods defined in Table 7-X2 can be configured with uniquely scheduled values. The Schedule object shall be configured with a List_Of_Object_Property_References including at least one reference, R, within the device to a in an object containing a Priority_Array property, PA. If the IUT cannot be configured to these requirements then this test shall be omitted.

Table 7-X2. Criteria for Test Date and Times

Date and Time:	Value:
D_1	V_1
D_2	V_2 different from V_1 .

Test Steps:

1. (TRANSMIT TimeSynchronization-Request, 'Time' = D_1)
 | (TRANSMIT UTCTimeSynchronization-Request, 'Time' = D_1)
 | MAKE (the local date and time = D_1)
2. VERIFY S, Present_Value = V_1
3. VERIFY PA[x] = V_1
4. (TRANSMIT TimeSynchronization-Request, 'Time' = D_2)
 | (TRANSMIT UTCTimeSynchronization-Request, 'Time' = D_2)
 | MAKE (the local date and time = D_2)
5. VERIFY S, Present_Value = V_2
6. VERIFY PA[x] = V_2

7.3.2.22.X1.4 Externally Written Datatypes Test, NULL values and Priority_Arrays

Reason for Change: Originally submitted to SSPC in SED-004. Additional changes have been made to allow for UTCTimeSynchronization and handle schedules of protocol-revision 4 and beyond. There is no new SSPC proposal.

Dependencies: TimeSynchronization Service Execution Tests, 9.30; UTCTimeSynchronization Service Execution Tests, 9.31

BACnet Reference Clauses: 12.24, 12.24.10

Purpose: This test verifies that the Schedule object writes NULLs to priority arrays (via Present_Value) in other devices.

Test Concept: Two Date/Time values, D_1 and D_2 , are chosen by the TD based on the criteria in Table 7-X4 such that D_1 is sufficiently different from current time to cause a Schedule evaluation when the time is changed to D_1 , and setting the time to D_2 from D_1 will cause a Schedule evaluation that will cause it to write value V_2 . These values may be chosen based on the Schedule object's existing configuration, or the Schedule object may be configured with such values, and either V_1 or V_2 , but not both, has datatype NULL. The values are written to a Present_Value property with the priority designated by the Schedule object's Priority_For_Writing property. **For devices of protocol revision 4 or higher, the Schedule_Default shall be set to NULL and the schedule shall be configured such that at time D_1 or D_2 , but not both, the schedule shall take on the value of Schedule_Default.**

Configuration Requirements: The TD shall be configured to support the WriteProperty-Request service but not WritePropertyMultiple-Request in the Protocol_Services_Supported property of its Device object. The IUT shall be configured with a Schedule object, S, such that the time periods defined in Table 7-X4 can be configured with uniquely scheduled values. The Schedule object shall be configured with a Priority_For_Writing value other than 16, and with a List_Of_Object_Property_References including at least one reference to a Present_Value property in an object in the TD containing a Priority_Array property.

Table 7-X4. Criteria for Test Date and Times

Date and Time:	Value:
D_1	V_1
D_2	V_2 different from V_1 .

Test Steps:

1. (TRANSMIT TimeSynchronization-Request, 'Time' = D_1)
 - | (TRANSMIT UTCTimeSynchronization-Request, 'Time' = D_1)
 - | MAKE (the local date and time = D_1)
2. REPEAT X = (every reference to the TD in List_Of_Object_Property_References) DO {
 - RECEIVE WriteProperty-Request,
 - 'Object Identifier' = (the object identifier of X),
 - 'Property Identifier' = (the property of X),
 - 'Property Value' = V_1 ,
 - 'Priority' = (the value of the Schedule object's Priority_For_Writing property)
 - TRANSMIT BACnet-SimpleACK-PDU
 - }
3. VERIFY S, Present_Value = V_1
4. (TRANSMIT TimeSynchronization-Request, 'Time' = D_2)
 - | (TRANSMIT UTCTimeSynchronization-Request, 'Time' = D_2)
 - | MAKE (the local date and time = D_2)
5. REPEAT X = (every reference to the TD in List_Of_Object_Property_References) DO {
 - RECEIVE WriteProperty-Request,
 - 'Object Identifier' = (the object identifier of X),
 - 'Property Identifier' = (the property of X),
 - 'Property Value' = V_2 ,
 - 'Priority' = (the value of the Schedule object's Priority_For_Writing property)
 - TRANSMIT BACnet-SimpleACK-PDU
 - }
6. VERIFY S, Present_Value = V_2

Note to Tester: The Priority parameter for the WriteProperty-Request may be left out if the Schedule is configured with a value of 16 in its Priority_For_Writing property.