

Clarification Request

References: 9.23.2.21 DateTime Non-Pattern Properties Test using WritePropertyMultiple Service

Date of BTL-WG Response: May 15, 2025

Background:

9.23.2.21 DateTime Non-Pattern Properties Test using WritePropertyMultiple Service

Reason for Change: Update Test Concept to include meaning of O1.

Purpose: To verify that the property being tested does not accept special date field values.

Test Concept: *O1 is the object being tested.* The property being tested, P1, is written with each of the special datetime field values to ensure that the property does not accept them. A datetime DT₁ is selected which is within the range that the IUT will accept for the property. The value, V₁, written to the property is the datetime DT₁ with one of its fields replaced with one of the date or time special values. If the property is a complex datatype, the other fields in the value shall be set within the range accepted by the IUT. This test shall only be applied to devices claiming Protocol_Revision 11 or higher.

Notes to Tester: if P1 is an array, then a non-zero array index may be provided in the TRANSMIT and the same array index observed in the WritePropertyMultiple-Error.

Test Steps:

REPEAT SV = (year unspecified, month unspecified, day of month unspecified, ~~day of week unspecified,~~ unspecified, odd months, even months, last day of month, even days, odd days, hour unspecified, minute unspecified, second unspecified, hundredths unspecified) DO {

1. TRANSMIT WritePropertyMultiple-Request,

'Object Identifier' = O1,

'Property Identifier' = P1,

'Property Value' = (DT₁ updated with the special value SV)

2. RECEIVE WritePropertyMultiple-Error,

'Error Class' = PROPERTY,

'Error Code' = VALUE_OUT_OF_RANGE,

'Object Identifier' = Object1,

'Property Identifier' = P1)

| (BACnet-Reject-PDU

'Reject Reason' = INVALID_PARAMETER_DATATYPE)

| (BACnet-Reject-PDU

'Reject Reason' = INVALID_TAG)

}

Problem:

In the past Delta has encountered BACnet devices in the field that were not able to determine the day-of-week and sent X'FF for the day of the week with an otherwise valid specified date when encoding a date value. For example, the device may send X'7D0404FF' for the date Friday April 4 2025.

As specified in BACnet clause 20.2.12 if the day-of-week cannot be determined the device is permitted to send an incorrect day of week in the date encoding (e.g., X'7D040401'). When this occurs it is a local matter if the date is rejected or fixed and accepted.

In the case where the sending device uses X'FF (or any other invalid value) for the day-of-week, the specified date encoding is incorrect, however the specified date itself is unambiguous and the day-of-week can be corrected by the receiving device. The BACnet standard does not explicitly

prohibit fixing the day-of-week and accepting the write when a day-of-week outside of the range of 1..7 is written for a specified date.

Testing for X'FF as an invalid day-of-week for a specified date encoding only enhances interoperability when the test is applied to the sending device and is unnecessary when applied to the receiving device.

Question:

When a device receives an unambiguous specified date that is encoded with the day-of-week outside of the range 1..7 it is a local matter as to whether the device rejects the write or fixes the day-of-week and accepts the write. Is this correct?

Response:

Yes