



**BACnet® TESTING LABORATORIES
ADDENDA**

**Addendum imp1 to
BTL Test Package 23.3**

**Revision v2
Revised 3/19/2024**

Approved by the BTL Working Group on March 7, 2024;
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[This foreword and the “Overview” on the following pages are not part of this Test Package. They are merely informative and do not contain requirements necessary for conformance to the Test Package.]

FOREWORD

The purpose of this addendum is to present current changes being made to the BTL Test Package. These modifications are the result of change proposals made pursuant to the continuous maintenance procedures and of deliberations within the BTL-WG Committee. The changes are summarized below.

BTL-23.3 imp1-1: Improve SubscribeCOV Testing [BTLWG-450]2

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In the following document, language to be added to existing clauses within the BTL Test Package 23.3 is indicated through the use of *italics*, while deletions are indicated by ~~strike through~~. Where entirely new subclauses are proposed to be added, plain type is used throughout.

In contrast, changes to BTL Specified Tests also contain a **yellow** highlight to indicate the changes made by this addendum. When this addendum is applied, all highlighting will be removed. Change markings on tests will remain to indicate the difference between the new test and an existing 135.1 test. If a test being modified has never existed in 135.1, the applied result should not contain any change markings. When this is the case, square brackets will be used to describe the changes required for this test.

Each addendum can stand independently unless specifically noted via dependency within the addendum. If multiple addenda change the same test or section, each future released addendum that changes the same test or section will note in square brackets whether or not those changes are reflected.

BTL-23.3 imp1-1: Improve SubscribeCOV Testing [BTLWG-450]

Overview:

Devices that do not support segmentation might not be able to have their Active_COV_Subscriptions read so the test cannot be completed. Remove the requirement to read Active_COV_Subscriptions.

Changes:

Checklist Changes

None

Test Plan Changes

None

Specified Test Changes

[Move 9.10.2.3 from 135.1-2023 into BTL Specified Tests and modify as shown.]

9.10.2.3 There Is No Space For A Subscription

Reason for Change: Remove requirement to read Active_COV_Subscriptions property so that devices that do not support segmentation can be tested.

Purpose: To verify that the IUT correctly responds to a SubscribeCOV request to establish a subscription when there is no space for a subscription.

Test Concept: Repeatedly subscribe to the same object each time with a different Process Identifier until the device runs out of resources and returns the appropriate error. This test only applies to IUTs that claim a Protocol_Revision of 10 or higher.

Test Conditionality: If the device cannot be configured such that the maximum number of subscriptions the IUT can accept is less than 10000, then this test may be skipped.

Test Steps:

REPEAT PID = (1 through the maximum number of subscriptions the IUT can accept plus 1, or until the IUT returns an Error-PDU) {

1. TRANSMIT SubscribeCOV-Request,
 - 'Subscriber Process Identifier' = PID,
 - 'Monitored Object Identifier' = (any object of that supports COV),
 - 'Issue Confirmed Notifications' = TRUE,
 - 'Lifetime' = 6000
 2. RECEIVE BACnet-SimpleACK-PDU |
 - (BACnet-Error-PDU,
 - 'Error Class' = RESOURCES,
 - 'Error Code' = NO_SPACE_TO_ADD_LIST_ELEMENT)
 3. READ ACS = (Active_COV_Subscriptions)
 4. IF (a BACnet SimpleACK BACnet SimpleACK PDU was received in step 2) THEN
 - CHECK (that the subscription is in ACS)
 - ELSE
 - CHECK (that the subscription is not in ACS)
- }

[Note: 9.11.2.5 changes have already been applied in 135.1-2023 so no additional changes are needed in this Addendum.]

BTL-23.3 imp1-2: Add new MS/TP Response Queue Test Due to Field Defect [BTLWG-556]

Overview:

A field defect was reported to BACnet International where:

Device A, an MS/TP device, which has a Max_Info_Frames of 36, sends, back-to-back, to device B, an MS/TP device on the same network, a whoIs and a ReadProperty.

In response to the ReadProperty request, which has Data_Expecting_Reply set to True allowing an immediate response, instead of sending the ReadProperty-ACK, device B sends the queued up IAM message.

Changes:

Checklist Changes

None

Test Plan Changes

[Add new test to Base Requirements for MS/TP Data Link]

9 Data Link Layer - MS/TP - Master Node

9.1 Base Requirements

Base requirements for all MS/TP master devices.

...		
BTL - 12.1.3.X1 - Verify MSTP Response Queue Test		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	

Specified Test Changes

[Add Test 12.1.3.X1]

12.1.3.X1 Verify MSTP Response Queue Test

Reason for Change: No test for this functionality.

Purpose: To verify the IUT can correctly respond to back-to-back requests where the second request contains Data_Expecting_Reply equal to TRUE.

Test Concept: Set the TD's Max_Info_Frames to a value greater than 1. Without passing the Token, the TD sends a Who-Is request followed immediately by a ReadProperty-Request. The IUT can either respond with a valid ReadProperty-ACK or a Reply Postponed.

Configuration Requirements: None.

Test Steps:

1. TRANSMIT
Who-Is-Request
2. TRANSMIT
ReadProperty-Request,
'Frame Type' = BACnet Data Expecting Reply,

'Object Identifier' = (Device, X),
'Property Identifier' = Object_Identifier

3. RECEIVE

ReadProperty-ACK,
'Frame Type' = BACnet Data Not Expecting Reply,
'Object Identifier' = (Device, X),
'Property Identifier' = Object_Identifier,
'Property Value' = (Device, X) |

RECEIVE

Reply Postponed

BTL-23.3 imp1-3: Improve Object_Name Testing [BTLWG-848]

Overview:

Object_Name must be unique and non-empty for every object in a device. The duplicate object-name testing exists but there are no tests for an empty object-name. This was noted by a user in February 2024 after he found a device with an empty object-name.

This work item introduces two new tests to validate these rules.

Changes:

Checklist Changes

None

Test Plan Changes

[Add these tests to Base Functionality Testing section 2.1.1]

BTL - 7.3.1.X1 - Verify No Objects Contain a Zero Length Object Name		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	
BTL - 7.3.1.X2 - Verify a Zero Length Object Name cannot be Written		
	Test Conditionality	Must be executed, if the IUT contains objects with writable Object Name properties.
	Test Directives	
	Testing Hints	

Specified Test Changes

[In BTL Specified Tests, add tests 7.3.1.X1 and 7.3.1.X2]

7.3.1.X1 Verify No Objects Contain a Zero Length Object_Name

Reason for Change: No test exists.

Purpose: To verify that Object_Name is not blank for any object in the IUT.

Test Concept: Read the Object_List from the IUT and for each object in the IUT, read the Object_Name and verify that its length is not zero.

Configuration Requirements: None.

Notes to Tester: If the whole BACnetARRAY cannot be read because it exceeds the Maximum Transmissible APDU, then the tester shall read it element-by-element to obtain the complete value.

Test Steps:

1. READ OL = Object_List
2. REPEAT O1 = (each object in the content of OL) DO {
 - READ NM = O1, Object_Name
 - CHECK (NM length > 0)

7.3.1.X2 Verify a Zero Length Object_Name cannot be Written

Reason for Change: No test exists.

Purpose: To verify that for every object in the IUT, an empty string value cannot be written to the Object_Name property.

Test Concept: For each object in the IUT, read the Object_Name. Write an empty string to the Object_Name property and verify the name does not change and an appropriate error is returned.

Configuration Requirements: None.

Notes to Tester: If the whole BACnetARRAY cannot be read because it exceeds the Maximum Transmissible APDU, then the tester shall read it element-by-element to obtain the complete value.

Test Steps:

1. READ OL = Device, Object_List
2. REPEAT O1 = (each object in content of OL) DO {
 READ NM = Object, Object_Name
 TRANSMIT WriteProperty-Request,
 'Object Identifier' = O1,
 'Property Identifier' = Object_Name,
 'Property Value' = (empty string)
 RECEIVE BACnet-Error-PDU,
 'Error Class' = PROPERTY,
 'Error Code' = WRITE_ACCESS_DENIED | VALUE_OUT_OF_RANGE
 READ NM2 = O1, Object_Name
 VERIFY NM2 == NM
}

BTL-23.3 imp1-4: Improve Recurring Register-Foreign-Device Test [BTLWG-1107]

Overview:

Purpose of the test "...persistent across reset..." does not match with test steps (no 'reset' in test)

Note: Test number changed from 14.8.X2 to 12.3.8.3 when moved to 135.1-2023

Changes:

Checklist Changes

None

Test Plan Changes

None

Specified Test Changes

[Move test from 135.1-2023 and make change to Purpose shown.]

12.3.8.3 Recurring Register-Foreign-Device Test

Reason for Change: Purpose does not match with intention of test.

~~Purpose: Verify that mode for use of Register-Foreign-Device and setting of 'BBMD Address' parameter are persistent across reset, and that the issuance of Register-Foreign-Device precedes the first issuance of any broadcast, when in that mode.~~

Purpose: Verify that the Register-Foreign-Device is re-sent before 'Time-to-Live' is expired.

Test Concept: IUT is put in a mode to use Register-Foreign-Device requests, and it is observed that Register-Foreign-Device requests are sent sufficiently frequently to prevent expiration of the registration at the BBMD.

Configuration Requirements: The product's setting of 'BBMD Address' parameter is configured as BBMD1. BBMD1 is the TD simulating a correctly functioning BBMD implementation.

Notes to Tester: There is no need for the recurring request to be sent any more quickly than precisely the 'Time-to-Live' since the standard mandates that the BBMD preserve the registration for 30 seconds past the 'Time-to-Live'.

Test Steps:

1. MAKE (IUT enter mode for use of Register-Foreign-Device requests)
2. RECEIVE DA = BBMD1,
Register-Foreign-Device
3. TRANSMIT BVLC-Result,
'Result Code' = Successful completion
4. BEFORE (the time configured for the 'Time-to-Live' parameter used for Register-Foreign-Device requests)
RECEIVE DA = BBMD1,
Register-Foreign-Device
5. TRANSMIT BVLC-Result,
'Result Code' = Successful completion
6. BEFORE (the time configured for the 'Time-to-Live' parameter used for Register-Foreign-Device requests)
RECEIVE DA = BBMD1,
Register-Foreign-Device
7. TRANSMIT BVLC-Result,
'Result Code' = Successful completion

BTL-23.3 imp1-5: Improve Event_Detection_Enable Test [BTLWG-1285]

Overview:

It was observed that the configuration requirements in test 7.3.1.22.2 are incorrect with regards to the Reliability_Evaluation_Inhibit property. If set to TRUE, as per the current configuration requirements, the test purpose is not met. In addition, the configuration requirements should address the fact that the Reliability_Evaluation_Inhibit is an optional property.

Changes:

Checklist Changes

None

Test Plan Changes

[In BTL Test Plan, modify Test Plan in section 5.2.1 (AE-N-I-B), section 5.22.1 (AE-LS-B)]

...	
135.1-2023 BTL - 7.3.1.22.2 - Event Detection Enable Inhibits FAULT	
Test Conditionality	If Protocol_Revision < 13 or if the IUT doesn't contain any event generating objects which support fault detection <i>and can be configured with an Event_Detection_Enable value of FALSE</i> , then this test shall be skipped.
Test Directives	The objects selected by the tester should include all variants that differ in the set of supported alarming properties, or the writability of any of those properties. At least one instance of each variant should be selected.
Testing Hints	

[In BTL Test Plan, modify Test Plan in section 5.32.1 (AE-AC-B)]

...	
135.1-2023 BTL - 7.3.1.22.2 - Event Detection Enable Inhibits FAULT	
Test Conditionality	If Protocol_Revision < 13; <i>or if the IUT doesn't contain any ACCESS_EVENT objects which support fault detection and can be configured with an Event_Detection_Enable value of FALSE</i> , then this test shall be skipped.
Test Directives	Apply to an object which generates ACCESS_EVENT notifications.
Testing Hints	

Specified Test Changes

[Move test from 135.1-2023 into BTL Specified Tests and change as shown.]

7.3.1.22.2 Event_Detection_Enable Inhibits FAULT

Reason for Change: Fix to address the fact that Reliability_Evaluation_Inhibit is not a required property.

Purpose: To verify that Event_Detection_Enable disables fault reporting.

Test Concept: ~~When the event state detection process is disabled via the Event_Detection_Enable, both the event algorithm and the Reliability value are ignored, and Event_State remains NORMAL. Select an event generating object, O1, that is configured for event reporting, and which can be made to go into FAULT. Set the Event_Detection_Enable property to FALSE. Create a condition which will cause O1 to transition to FAULT, if Event_Detection_Enable is TRUE. An event generating object, O1, is put into a condition that would cause it to go into a FAULT state if Event_Detection_Enable were TRUE.~~ Verify

the Event_State is NORMAL and the Acked_Transitions, Event_Time_Stamps, and Event_Message_Texts are equal to their respective initial conditions, as mandated in the standard, and no notification messages are transmitted.

Configuration Requirements: O1 is an object capable of detecting and reporting an event for a FAULT condition, and the Event_Detection_Enable property ~~is can be~~ set to FALSE. Reliability_Evaluation_Inhibit, *if present*, is equal to ~~TRUE~~ FALSE. For this test, NO_TS equals a BACnetDateTime with all unspecified values, a BACnet Time with all unspecified values, or a sequence number of 0.

Test Steps:

1. VERIFY Event_Detection_Enable = FALSE
2. IF Reliability is writable THEN
3. WRITE Reliability = (any value other than NO_FAULT_DETECTED)
 ELSE
4. MAKE (a condition exist which would cause O1 to transition to FAULT, if Event_Detection_Enable were TRUE)
5. **WAIT Notification Fail Time**
6. CHECK (that the IUT did not send any event notifications due to this condition)
7. VERIFY pCurrentState = NORMAL
8. VERIFY Acked_Transitions = (T,T,T)
9. IF (Protocol_Revision is present AND Protocol_Revision \geq 1) THEN
 VERIFY Event_Time_Stamps = [NO_TS, NO_TS, NO_TS]
10. IF (Event_Message_Texts property exists) THEN
 VERIFY Event_Message_Texts = ["", ""]

BTL-23.3 imp1-6: Exclude Elevator Object in DS-AV-A [BTLWG-1297]

Overview:

ASHRAE 135-2020 / K.1.16 BIBB - Data Sharing-Advanced View-A (DS-AV-A), the 'Elevator objects' should be listed as exceptions in the directives.

Changes:

Checklist Changes

None

Test Plan Changes

4.12.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2023 - 8.18.3 - Reading and Presenting Properties	
Test Conditionality	Must be executed.
Test Directives	Repeat the test for <u>all</u> standard objects and properties, excluding the Life Safety, Access Control, and Elevator objects , and the Object_Identifier and Object_Type properties.
Testing Hints	For properties that contain a CHOICE construct, the IUT shall be capable of reading and presenting each of the forms of the datatype as defined in the IUT's claimed protocol revision. Full accuracy presentation is not required throughout the IUT, but there should be at least one place provided by the IUT that allows the presentation of each property to be presented in such a way that the presentation requirements of DS-AV-A are met.

Specified Test Changes

None

BTL-23.3 imp1-7: Expand Log-Status Test to Include LOG_INTERRUPTED Testing [BTLWG-1343]

Overview:

A log-status entry in a Log_Buffer has three different flags: LOG_DISABLED, BUFFER_PURGED, and LOG_INTERRUPTED. The current BTL test package tests the first two but does not test the third. This work item adds testing for the third flag (LOG_INTERRUPTED). There are also some inconsistencies between the test concept and the test steps so that is fixed in this work item as well.

Changes:

Checklist Changes

None

Test Plan Changes

[Modify references to test 7.3.2.24.13 from 135.1-2023 to BTL.]

Specified Test Changes

[Move 135.1-2023 test 7.3.2.24.13 into BTL Specified Tests and change as shown below.]

7.3.2.24.13 Log-Status Test

Reason for Change: The test here supercedes the version in 135.1-2023, with a completely different, less prescriptive approach.

Dependencies: ReadRange Service Execution Tests, 9.21; WriteProperty Service Execution Tests, 9.18.

BACnet Reference Clause: 12.25.14, 12.27.13, 12.30.19

Purpose: To verify proper logging of log-disabled, ~~and~~ buffer-purged, *and log-interrupted* events.

Test Concept: ~~The buffer is cleared. Then the Enable property is changed and it is verified that the Record_Count property is changed and it is verified that the status entry is made correctly in the Log_Buffer. The Record_Count is also set to zero while the Enable property is FALSE and it is verified that the buffer-purged event is recorded into the Log_Buffer.~~

Logging is disabled and the log buffer is purged by writing Record_Count = 0. The Log_Buffer is then checked to verify it has a single record and it is a buffer-purged log entry. Logging is then enabled and disabled and the Log_Buffer is checked to verify the log-disabled events were logged. Logging is enabled and a power cycle (or some other vendor specified action that will generate a log_interrupted entry) is performed on the IUT. After the IUT restarts, the Log_Buffer is checked to verify that a log-interrupted event was logged.

~~Test Configuration:~~ *Configuration Requirements:* The logging object is configured to acquire data by whatever means available. Configure the logging such that the entire test may be run without the trend buffer overflowing.

Notes to Tester: When the IUT's Protocol_Revision < 7, the length of BACnetLogStatus shall be 2; otherwise, it shall be 3.

Test Steps:

- ~~1. WRITE Enable = FALSE~~
- ~~2. WRITE Record_Count = 0~~
- ~~3. VERIFY Record_Count = 1~~
- ~~4. TRANSMIT ReadRange~~
 - ~~'Object Identifier' = 01,~~
 - ~~'Property Identifier' = Log_Buffer,~~
 - ~~'Reference Index' = 1,~~

```

----- 'Count' = ----- 1
5. RECEIVE ReadRange Ack
----- 'Object Identifier' = ----- O1,
----- 'Property Identifier' = ----- Log_Buffer,
----- 'Result Flags' = ----- (True, True, False),
----- 'Item Count' = ----- 1
----- 'Item Data' = ----- ((a buffer purged record))
6. WRITE Enable = TRUE
7. WRITE Enable = FALSE
8. TRANSMIT ReadRange
----- 'Object Identifier' = ----- O1,
----- 'Property Identifier' = ----- Log_Buffer,
----- 'Reference Index' = ----- 1,
----- 'Count' = ----- 2
9. RECEIVE ReadRangeAck
----- 'Object Identifier' = ----- O1,
----- 'Property Identifier' = ----- Log_Buffer,
----- 'Result Flags' = ----- (True, False, False),
----- 'Item Count' = ----- 2
----- 'Item Data' = ----- ((a buffer purged record), (a log enable record))
10. TRANSMIT ReadRange
----- 'Object Identifier' = ----- O1,
----- 'Property Identifier' = ----- Log_Buffer,
----- 'Reference Time' = ----- (2154 12 31, 23:59:59.99),
----- 'Count' = ----- 1
11. RECEIVE ReadRangeAck
----- 'Object Identifier' = ----- O1,
----- 'Property Identifier' = ----- Log_Buffer,
----- 'Result Flags' = ----- (False, True, False),
----- 'Item Count' = ----- 1
----- 'Item Data' = ----- ((a log disable record))

```

1. *WRITE Enable = FALSE*
2. *WRITE Record_Count = 0*
3. *VERIFY (Log_Buffer contains 1 entries, and it is the buffer-purged event)*
4. *WRITE Enable = TRUE*
5. *WRITE Enable = FALSE*
6. *VERIFY (Record_Count => 3 and the first entry is the buffer-purged event, the second entry is the log-enable TRUE event and the last entry is the log-enable FALSE event)*
7. **IF (Protocol_Revision >= 7) THEN**
WRITE Enable = TRUE
MAKE (power cycle the IUT or take some other vendor specified action as required to generate a Log_Interrupted entry)
VERIFY (Log_Buffer contains an entry for the log-interrupted event)

BTL-23.3 imp1-8: Change NM-BBMDC-B to Reference the Correct DataLink [BTLWG-1348]

Overview:

In NM-BBMDC-B, the Test Plan directs the user to verify section ‘Support for BACnet/IP - Annex J - BBMD’ is selected. This section no longer exists. We have DataLink IPv4 and DataLink IPv6. Do we now verify that at least one of those is selected?

Changes:

Checklist Changes

None

Test Plan Changes

[Modify the Test Directives for 10.7.1]

10.7 Network Management - BBMD Configuration - B

10.7.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

Verify Checklist	
Test Conditionality	Must be executed.
Test Directives	Verify that the IUT claims support for BACnet/IP - Annex J - BBMD Data Link Layer (IPv4 or IPv6) and ‘Is Able to Operate in BBMD Mode’.
Testing Hints	
BTL - 14.X10.1 - Broadcast-Distribution-Table Holds at Least 5 Entries	
Test Conditionality	Must be executed.
Test Directives	
Testing Hints	
BTL - 14.X10.4 - Broadcast Distribution Table Configuration via Hostname Entries	
Test Conditionality	If the IUT claims Protocol Revision ≥ 17 , this test shall be executed.
Test Directives	
Testing Hints	

Specified Test Changes

None

BTL-23.3 imp1-9: AWS/OWS BIBB Testing Improvements [BTLWG-1352]

Overview:

Jira item BTLWG-1352. This work item changes the language in the Test Conditionality of A side BIBB’s (M/AM/V/AV/VM/AVM) for testing to allow skipping of the tests if already applied by another BIBB. Also, this work item changes the Test Directives for commanding & relinquishing tests to have the IUT apply to all object types listed in the BIBB.

Changes:

Checklist Changes

None

Test Plan Changes

[Modify the Test Conditionality for tests under section 4.11.1, 4.13.1, 4.27.1, 4.29.1, 4.31.1, 4.33.1, 4.48.1, 4.50.1, 4.52.1, 4.54.1, 5.17.1, 5.29.1, 5.34.1, 5.38.1, 6.2.1]

[Modify the Test directives for tests under section 4.13.1, 4.14.1, 4.29.1, 4.30.1, 4.33.1, 4.34.1, 4.50.1, 4.51.1, 4.54.1, 4.55.1]

4.11 Data Sharing - View - A

4.11.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties		
	Test Conditionality	Must be executed, unless the IUT also claims support for DS-AV-A. <i>If the IUT claims DS-AV-A, this test may be omitted otherwise, this test must be executed.</i>
	Test Directives	Repeat the test for each of the standard object types and associated properties defined for the claimed Protocol_Revision and described in table K-1 in the DS-V-A BIBB definition of the BACnet standard.
	Testing Hints	

4.13 Data Sharing - Modify - A

4.13.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed, unless the IUT also claims support for DS-AM-A. <i>If the IUT claims DS-AM-A, this test may be omitted otherwise, this test must be executed.</i>
	Test Directives	Repeat the test for each of the required object types and associated properties defined for the claimed Protocol_Revision and described in table K-5 in the DS-M-A BIBB definition of the BACnet standard except for those properties which are commandable. Repeat the test for a variety of values that cover the range of values required by the "Minimum Writable Value Ranges" table (table K-6) in the DS-M-A BIBB definition.
	Testing Hints	
135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties		
	Test Conditionality	Must be executed, unless the IUT also claims support for DS-AM-A. <i>If the IUT claims DS-AM-A, this test may be omitted otherwise, this test must be executed.</i>

Test Directives	Repeat the test for all <i>object types specified in the BIBB that contain commandable properties defined for the claimed Protocol_Revision.</i> This test should be executed at priority 8 only, i.e. PR1 = 8.
Testing Hints	

4.14 Data Sharing - Advance Modify - A

4.14.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	
Test Conditionality	Must be executed.
Test Directives	Repeat the test for all standard objects and properties, excluding the Life Safety and Access Control objects, and the Object_Identifier and Object_Type properties. Also exclude any properties that are required to be read-only by the BACnet standard, and exclude properties which are commandable because those are covered by a different test. Repeat the test for a variety of values that cover the range of values required by the “Minimum Writable Value Ranges” table in the DS-M-A BIBB definition.
Testing Hints	
135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties	
Test Conditionality	Must be executed.
Test Directives	<i>Repeat the test for all object types specified in the BIBB that contain commandable properties defined for the claimed Protocol_Revision.</i> Repeat the test for all priority values, 1 through 16.
Testing Hints	

4.27 Data Sharing - Life Safety View - A

4.27.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties	
Test Conditionality	Must be executed if the IUT does not support DS-LSAV-A. <i>If the IUT claims DS-LSAV-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each of the standard object types and associated properties specified by DS-LSV-A.
Testing Hints	

4.29 Data Sharing - Life Safety Modify - A

4.29.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	
Test Conditionality	Must be executed if the IUT does not support DS-LSAM-A. <i>If the IUT claims DS-LSAM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each of the required object types listed in the BIBB definition. Repeat for each of the required properties listed in the BIBB definition, except for those properties which are commandable. Repeat the test for a variety of values that cover the range of values required by the “Minimum Writable Value Ranges” table in the DS-M-A BIBB definition.
Testing Hints	

135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties		
	Test Conditionality	Must be executed if the IUT does not support DS-LSAM-A. <i>If the IUT claims DS-LSAM-A, this test may be omitted otherwise, this test must be executed.</i>
	Test Directives	<i>Repeat the test for all object types specified in the BIBB that contain commandable properties defined for the claimed Protocol Revision. This test should be executed at priority 8 only, i.e. PR1 = 8.</i>
	Testing Hints	

4.30 Data Sharing - Life Safety Advanced Modify - A

4.30.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for each of the required object types listed in the BIBB definition. Repeat for each of the required properties listed in the BIBB definition, except for those properties which are commandable. Repeat the test for a variety of values that cover the range of values required by the “Minimum Writable Value Ranges” table in the DS-M-A BIBB definition.
	Testing Hints	
135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties		
	Test Conditionality	Must be executed.
	Test Directives	<i>Repeat the test for all object types specified in the BIBB that contain commandable properties defined for the claimed Protocol Revision. Repeat the test for all priority values, 1 through 16.</i>
	Testing Hints	

4.31 Data Sharing - Access Control View - A

4.31.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties		
	Test Conditionality	Must be executed if the IUT does not support DS-ACAV-A. <i>If the IUT claims DS-ACAV-A, this test may be omitted otherwise, this test must be executed.</i>
	Test Directives	Repeat the test for each of the standard object types and associated properties specified by DS-ACV-A.
	Testing Hints	

4.33 Data Sharing - Access Control Modify - A

4.33.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed if the IUT does not support DS-ACAM-A. <i>If the IUT claims DS-ACAM-A, this test may be omitted otherwise, this test must be executed.</i>

Test Directives	Repeat the test for each of the required object types listed in the BIBB definition. Repeat for each of the required properties listed in the BIBB definition, except for those properties which are commandable. Repeat the test for a variety of values that cover the range of values required by the “Minimum Writable Value Ranges” table in the DS-M-A BIBB definition.
Testing Hints	
135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties	
Test Conditionality	Must be executed if the IUT does not support DS-ACAM-A. <i>If the IUT claims DS-ACAM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for all object types specified in the BIBB that contain commandable properties defined for the claimed Protocol_Revision. This test should be executed at priority 8 only, i.e. PR1 = 8.
Testing Hints	

4.34 Data Sharing - Access Control Advanced Modify - A

4.34.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	
Test Conditionality	Must be executed.
Test Directives	Repeat the test for each of the required object types listed in the BIBB definition. Repeat for each of the required properties listed in the BIBB definition, except for those properties which are commandable. Repeat the test for a variety of values that cover the range of values required by the “Minimum Writable Value Ranges” table in the DS-M-A BIBB definition.
Testing Hints	
135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties	
Test Conditionality	Must be executed.
Test Directives	Repeat the test for all object types specified in the BIBB that contain commandable properties defined for the claimed Protocol_Revision. Repeat the test for all priority values, 1 through 16.
Testing Hints	

4.48 Data Sharing - Lighting View - A

4.48.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties	
Test Conditionality	Must be executed if the IUT does not support DS-LAV-A. <i>If the IUT claims DS-LAV-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each of the standard object types and associated properties specified by DS-LV-A.
Testing Hints	

4.50 Data Sharing - Lighting Modify - A

4.50.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed if the IUT does not support DS-LAM-A. If the IUT claims DS-LAM-A, this test may be omitted otherwise, this test must be executed.
	Test Directives	Repeat the test for each of the required object types listed in the BIBB definition. Repeat for each of the required properties listed in the BIBB definition, except for those properties which are commandable. Repeat the test for a variety of values that cover the range of values required by the “Minimum Writable Value Ranges” table in the DS-M-A BIBB definition.
	Testing Hints	
135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties		
	Test Conditionality	Must be executed if the IUT does not support DS-LAM-A. If the IUT claims DS-LAM-A, this test may be omitted otherwise, this test must be executed.
	Test Directives	<i>Repeat the test for all object types specified in the BIBB that contain commandable properties defined for the claimed Protocol_Revision.</i> This test should be executed at priority 8 only, i.e. PR1 = 8.
	Testing Hints	

4.51 Data Sharing - Lighting Advanced Modify - A

4.51.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for each of the required object types listed in the BIBB definition. Repeat for each of the required properties listed in the BIBB definition, except for those properties which are commandable. Repeat the test for a variety of values that cover the range of values required by the “Minimum Writable Value Ranges” table in the DS-M-A BIBB definition.
	Testing Hints	
135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties		
	Test Conditionality	Must be executed.
	Test Directives	<i>Repeat the test for all object types specified in the BIBB that contain commandable properties defined for the claimed Protocol_Revision.</i> Repeat the test for all priority values, 1 through 16.
	Testing Hints	

4.52 Data Sharing - Elevator View - A

4.52.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties		
	Test Conditionality	Must be executed if the IUT does not support DS-EAV-A. If the IUT claims DS-EAV-A, this test may be omitted otherwise, this test must be executed.
	Test Directives	Repeat the test for each of the standard object types and associated properties specified by DS-EV-A.
	Testing Hints	

4.54 Data Sharing - Elevator Modify - A

4.54.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	
Test Conditionality	Must be executed, unless the IUT also claims support for DS-EAM-A. <i>If the IUT claims DS-EAM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each of the required object types and associated properties defined for the claimed Protocol_Revision and described in table K-5 in the DS-EM-A BIBB definition of the BACnet standard except for those properties which are commandable. Repeat the test for a variety of values that cover the range of values required by the "Minimum Writable Value Ranges" table (table K-6) in the DS-M-A BIBB definition.
Testing Hints	
135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties	
Test Conditionality	Must be executed, unless the IUT also claims support for DS-EAM-A. <i>If the IUT claims DS-EAM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for all <i>object types specified in the BIBB that contain commandable properties defined for the claimed Protocol_Revision.</i> This test should be executed at priority 8 only, i.e. PR = 8.
Testing Hints	

4.55 Data Sharing - Elevator Advanced Modify - A

4.55.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	
Test Conditionality	Must be executed.
Test Directives	Repeat the test for each of the required object types listed in the BIBB definition. Repeat for each of the required properties listed in the BIBB definition, except for those properties which are commandable. Repeat the test for a variety of values that cover the range of values required by the "Minimum Writable Value Ranges" table in the DS-M-A BIBB definition.
Testing Hints	
135.1-2019 - 8.22.5 - Accepting Input and Commanding/Relinquishing Properties	
Test Conditionality	Must be executed, unless the IUT also claims support for DS-EAM-A.
Test Directives	<i>Repeat the test for all object types specified in the BIBB that contain commandable properties defined for the claimed Protocol_Revision.</i> Repeat the test for all priority values, 1 through 16.
Testing Hints	

5.17 Alarm and Event Management - View Modify - A

5.17.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties	
Test Conditionality	Must be executed. If the IUT also claims support for AE-AVM-A, this test may be omitted. <i>If the IUT claims AE-AVM-A, this test may be omitted otherwise, this test must be executed.</i>

Test Directives	Repeat for each standard property, in each standard object type, which represent parameters to an event or fault algorithm, listed in tables K-15 and K-16 of the BACnet standard.
Testing Hints	
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	
Test Conditionality	Must be executed. <i>If the IUT claims AE-AVM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat for each standard property, in each standard object type, which represent parameters to an event or fault algorithm, listed in tables K-15 and K-16 of the BACnet standard. For each parameter, exercise the full range requirements as defined by table K-6.
Testing Hints	

5.29 Alarm and Event Management - Life Safety View and Modify - A

5.29.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties	
Test Conditionality	Must be executed if AE-LSAVM-A is not supported. <i>If the IUT claims AE-LSAVM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each standard object capable of generating CHANGE_OF_LIFE_SAFETY events, reading and displaying the pAlarmValues and pLifeSafetyAlarmValues properties. Repeat the test for each standard object capable of using the FAULT_LIFE_SAFETY algorithm, reading and displaying the pFaultValues property.
Testing Hints	
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	
Test Conditionality	Must be executed if AE-LSAVM-A is not supported. <i>If the IUT claims AE-LSAVM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each standard object capable of generating CHANGE_OF_LIFE_SAFETY events, reading and displaying the pAlarmValues and pLifeSafetyAlarmValues properties. Repeat the test for each standard object capable of using the FAULT_LIFE_SAFETY algorithm, reading and displaying the pFaultValues property.
Testing Hints	

5.34 Alarm and Event Management - Access Control View and Modify - A

5.34.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties	
Test Conditionality	Must be executed if AE-ACAVM-A is not supported. <i>If the IUT claims AE-ACAVM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	
Testing Hints	Repeat the test for each standard object capable of generating ACCESS_EVENT events, reading and displaying the pAccessEvents and pAccessEventTime properties.
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	

Test Conditionality	Must be executed if AE-ACAVM-A is not supported. <i>If the IUT claims AE-ACAVM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	
Testing Hints	Repeat the test for each standard object capable of generating ACCESS_EVENT events, reading and displaying the pAccessEvents and pAccessEventTime properties.

5.38 Alarm and Event Management - Elevator View and Modify - A

5.38.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties	
Test Conditionality	Must be executed if AE-EAVM-A is not supported. <i>If the IUT claims AE-EAVM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each standard object type related to elevators capable of using the FAULT_LISTED algorithm, reading and displaying the pMonitoredList property.
Testing Hints	
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	
Test Conditionality	Must be executed if AE-EAVM-A is not supported. <i>If the IUT claims AE-EAVM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each standard object type related to elevators capable of using the FAULT_LISTED algorithm, reading and displaying the pMonitoredList property.
Testing Hints	

6.2 Scheduling - View Modify - A

6.2.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

135.1-2019 - 8.18.3 - Reading and Presenting Properties	
Test Conditionality	Must be executed unless the IUT also claims support for SCHED-AVM-A. <i>If the IUT claims SCHED-AVM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each of the standard object types, defined in the claimed Protocol_Revision, and associated properties specified by SCHED-VM-A. The reference schedule used during this test should include an Exception_Schedule that contains 255 entries and contain 12 BACnetTimeValue tuples per entry. The reference schedule should also contain a Weekly_Schedule which contains 6 BACnetTimeValue tuples per day. The Calendar Date_List used in this test should contain 32 calendar entries.
Testing Hints	
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties	
Test Conditionality	Must be executed unless the IUT also claims support for SCHED-AVM-A. <i>If the IUT claims SCHED-AVM-A, this test may be omitted otherwise, this test must be executed.</i>
Test Directives	Repeat the test for each of the standard object types, defined in the claimed Protocol_Revision, and associated properties specified by SCHED-VM-A.

	The reference schedule used during this test should include an Exception_Schedule that contains 255 entries and contain 12 BACnetTimeValue tuples per entry. The reference schedule should also contain a Weekly_Schedule which contains 6 BACnetTimeValue tuples per day. The Calendar Date_List used in this test should contain 32 calendar entries.
Testing Hints	

Specified Test Changes

None

BTL-23.3 imp1-10: Checklist DM-RD-B Fix [BTLWG-1384]

Overview:

The DM-RD-B section of the Checklist incorrectly allows for a device to select either WARMSTART or COLDSTART when both are required.

Changes:

Checklist Changes

[Modify the footnotes on DM-RD-B to correctly indicate both COLDSTART and WARMSTART are required.]

Support	Listing	Option
...		
Device Management - Reinitialize Device - B		
	R	Base Requirements
	C ¹	Implements ReinitializeDevice WARMSTART with a password
	C ¹	Implements ReinitializeDevice WARMSTART with no password
	C ²	Implements ReinitializeDevice COLDSTART with a password
	C ²	Implements ReinitializeDevice COLDSTART with no password
¹ At least one of these options is required in order to claim conformance to this BIBB.		
² At least one of these options is required in order to claim conformance to this BIBB.		
...		

Test Plan Changes

[Add new Verify Checklist entries to 8.17.1 and 8.18.1]

8.17 Device Management - Backup and Restore - A

8.17.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DM-RD-A in the checklist.
	Testing Hints	
BTL - 13.8.2.1 - Initiate a Full Backup and Restore		
	Test Conditionality	This test should be repeated in order to cover all of the TD characteristics listed in the definition of the test.
	Test Directives	
	Testing Hints	
...		

8.18 Device Management - Backup and Restore - B

8.18.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DM-RD-B in the checklist.
	Testing Hints	
BTL - 13.8.1.1 - Execution of Full Backup and Restore Procedure		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	
...		

Specified Test Changes

None