BACnet® TESTING LABORATORIES

INTERIM TEST SPECIFICATION

To Be Used with Test Package 18.0
Version 1
January 26, 2021

Approved by the BTL Working Group on October 30, 2020.
Approved by the BTL Working Group Voting Members on January 20, 2021.
Published on January 27, 2021

Foreward

The purpose of this document is to define interim tests and other test package changes made to support testing of a device that supports functionality currently not covered in the released BTL Test Package. This document shall be applied and used with BTL Test Package 18.0.

Vendors who are planning to submit a device for testing and who implement Protocol_Revision 19 and higher, or which contain functionality not covered by the Official Test Package, should use this Interim Test document.

Please note that if the device contains functionality not yet covered by the official Test Package, nor by the Interim Tests document, development of new tests may be required for your device. Please contact the BTL Manager before submitting your device for testing to ensure you are aware of all tests that will need to be applied to your device.

The changes in this document are for interim use only and may or may not be used as documented here when the final changes are applied to the next Test Package revision. Devices tested using this interim test document shall be recalled for updated testing when the next revision of test package is released that includes the topics covered here.

In the following document, language to be added to existing clauses of ANSI/ASHRAE 135.1-2019 or any part of the Test Package 18.0 are indicated through the use of *italics*, while deletions are indicated by ~~strikethrough~~. Where entirely new sections are proposed to be added, plain type is used throughout.

Table of Contents

BTL Checklist and BTL Test Plan Changes

This section of the document contains interim changes to the BTL Checklist and the BTL Test Plan documents to support testing of products with functionality outside the scope of the official test plan.

This section is ordered the same as the BTL Checklist and BTL Test Plan documents to allow easy navigation of the material.

All test changes can be found in the next major section.

1.2 Testing Virtual Network Gateways

The BTL Test Package does not provide adequate direction on testing of virtual network gateways. These changes direct the tester to develop 2 separate Checklists, one for the functionality in the virtual router, and another for the superset of functionality that I supported in virtual devices.

Checklist Changes

[Modify clause 1 in the BTL Functionality Checklist]

1 Introduction

The ***BTL Functionality Checklist*** identifies the testable options implemented by the IUT. The table is divided out into sections by functionality. In general, each section maps onto a BIBB, object type, or functional category. Each section has a Base Requirements option and if the BIBB, object type or functional category is supported by the IUT, this item must be selected. In addition, any other option in the section that has a Listing Code of R or BTL-R must be selected.

There are some items in the table that are already marked with an X in the 'Support' column. These are items that all BACnet devices must implement.

The Listing column indicates whether the option is required or not. The codes in the table are:

R = Required. Items marked with this listing code are required for a listing if the IUT implements the associated BIBB, object type, or functional category.

BTL-R = Required by BTL. Items marked with this listing code are required for a listing if the IUT implements the associated BIBB, object type, or functional category.

C = Conditionally Required. Items marked with this listing code may be required for a listing if the IUT implements the associated BIBB, object type, or functional category. The conditions under which the item will be required are identified in a footnote in the Checklist table.

BTL-C = Conditionally Required by BTL. Items marked with this listing code may be required for a listing if the IUT implements the associated BIBB, object type, or functional category. The conditions under which the item will be required are identified in a footnote in the Checklist table.

S = Suggested. The BTL suggests that all IUTs implement this option if they implement the associated BIBB, object type, or functional category.

O = Optional. Items marked with this listing code are optional.

N = Not recommended. The BTL recommends against IUTs implementing this option due to possible interoperability or performance problems related with the option.

The 'Option' column names the functional item. For each item there is a corresponding item of the same name in the ***BTL Test Plan***. The corresponding item in the ***BTL Test Plan*** provides a more detailed description of the option.

Once filled out, this document will be used to identify the tests to apply to the IUT. By relating the selected items in this table to items in the ***BTL Test Plan***, the tester will have a list of all tests that must be applied to the IUT.

If the IUT supports GW-VN-B, then a separate BTL Checklist shall be filled out describing the functionality of the virtual devices. The virtual device checklist shall document all of the functionality that is supported in the virtual devices even if it cannot all be supported in a single virtual device.

Test Plan Changes

[Add section 1.2 into BTL Test Plan]

1.2 Testing Virtual Network Gateways

This test plan was developed to test a single BACnet device but BACnet virtual gateways are different from other BACnet devices in that they represent 2 or more devices: the virtual router and one or more virtual devices. The functionality of the virtual router device might be very different than the functionality of the virtual devices and thus warrants separate testing.

The Test Plan shall be applied to the virtual router based on its BTL Checklist and on a virtual device based on its BTL Checklist.

4.21 Data Sharing - WriteGroup - A

Devices claiming support for Data Sharing - WriteGroup - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - WriteGroup - A]

Data Sharing - WriteGroup - A		
	R[1]	Base Requirements
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.43 Data Sharing - WriteGroup - A]

4.21 Data Sharing - WriteGroup - A

4.21.1 Base Requirements

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

BTL - 8.X2.1 - Broadcasting to a Group of Channel Objects		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	

4.27 Data Sharing - Life Safety View - A

Devices claiming support for Data Sharing - Life Safety View - A must comply with the following section.

Checklist Changes

[In BTL Checlist, modify section Data Sharing - Life Safety View - A]

Data Sharing - Life Safety View - A		
	R[1]	Base Requirements
	R	*Supports DS-RP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan replace section 4.27 Data Sharing - Life Safety View - A]

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.
	Test Directives	Repeat the test for <u>each</u> of the standard object types and associated properties specified by DS-LSV-A.
	Testing Hints	

4.27.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties for presentation.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.28 Data Sharing - Life Safety Advanced View - A

Devices claiming support for Data Sharing - Life Safety Advanced View - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section DS-LSAV-A]

Data Sharing - Life Safety Advanced View - A		
	R[1]	Base Requirements
	R	*Supports DS-RP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace 4.28 Data Sharing - Life Safety Advanced View - A]

4.28 Data Sharing - Life Safety Advanced View - A

4.28.1 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.
	Test Directives	Repeat the test for all standard objects and properties identified in DS-LSAV-A. 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-LSAV-A are met.
	Testing Hints	

4.28.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties for presentation.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.29 Data Sharing - Life Safety Modify - A

Devices claiming support for Data Sharing - Life Safety Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Life Safety Modify - A]

Data Sharing - Life Safety Modify - A		
	R[1]	Base Requirements
	R	*Supports DS-WP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.29 Data Sharing - Life Safety Modify - A]

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.
	Test Directives	Repeat the test for <u>each</u> of the required object types listed in the BIBB definition. Repeat for <u>each</u> 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.
	Test Directives	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.29.2 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.30 Data Sharing - Life Safety Advanced Modify - A

Devices claiming support for Data Sharing - Life Safety Advanced Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Life Safety Advanced Modify - A]

Data Sharing - Life Safety Advanced Modify - A		
	R[‡]	Base Requirements
	R	*Supports DS-WP-A*
[‡]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[Replace Test Plan Entry 4.30 Data Sharing - Life Safety Advanced Modify - A]

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 <u>each</u> of the required object types listed in the BIBB definition. Repeat for <u>each</u> 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	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.30.2 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.31 Data Sharing - Access Control View - A

Devices claiming support for Data Sharing - Access Control View - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Access Control View - A]

Data Sharing - Access Control View - A		
	R[1]	Base Requirements
	R	*Supports DS-RP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.31 Data Sharing - Access Control View - A]

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.
	Test Directives	Repeat the test for <u>each</u> of the standard object types and associated properties specified by DS-ACV-A.
	Testing Hints	

4.31.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties for presentation.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.32 Data Sharing - Access Control Advanced View - A

Devices claiming support for Data Sharing - Access Control Advanced View - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Access Control Advanced View - A]

Data Sharing - Access Control Advanced View - A		
	R[‡]	Base Requirements
	R	*Supports DS-RP-A*
	[‡]~~Contact BTL for interim tests for this BIBB.~~	

Test Plans Changes

[In BTL Test Plan, replace section 4.32 Data Sharing - Access Control Advanced View - A]

4.32 Data Sharing - Access Control Advanced View - A

4.32.1 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.
	Test Directives	Repeat the test for <u>all</u> standard objects and properties identified in DS-ACAV-A. 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-ACAV-A are met.
	Testing Hints	

4.32.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties for presentation.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.33 Data Sharing - Access Control Modify - A

Devices claiming support for Data Sharing - Access Control Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Access Control Modify - A]

Data Sharing - Access Control Modify - A		
	R[1]	Base Requirements
	R	*Supports DS-WP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plans Changes

[In BTL Test Plan, replace section 4.32 Data Sharing - Access Control Advanced View - A]

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.
	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.
	Test Directives	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.33.2 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.34 Data Sharing - Life Safety Advanced Modify - A

Devices claiming support for Data Sharing - Access Control Advanced Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Access Control Advanced Modify - A]

Data Sharing - Access Control Advanced Modify - A		
	R[‡]	Base Requirements
	R	*Supports DS-WP-A*
~~[‡]Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.34 Data Sharing - Life Safety Advanced Modify - A]

4.34 Data Sharing - Life Safety 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 <u>each</u> of the required object types listed in the BIBB definition. Repeat for <u>each</u> 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	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.34.2 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.35 Data Sharing - Access Control User Configuration - A

Devices claiming support for Data Sharing - Access Control User Configuration - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Access Control User Configuration - A]

Data Sharing - Access Control User Configuration - A		
	R[‡]	Base Requirements
	R	*Supports DS-RP-A*
	R	*Supports DS-WP-A*
	R	*Supports DM-OCD-A*
[‡]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.35 Data Sharing - Access Control User Configuration - A]

4.35 Data Sharing - Access Control User Configuration - A

4.35.1 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.
	Test Directives	Repeat the test for <u>each</u> of the standard object types and associated properties specified by DS-ACUC-A.
	Testing Hints	
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for <u>each</u> of the required object types listed in the BIBB definition. Repeat for <u>each</u> 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	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.35.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties of Access Control objects.

Verify Checklist

	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.35.3 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.35.2 Supports DM-OCD-A

The IUT shall support DM-OCD-A in order to create and delete Access Control objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DM-OCD-A, and that all object types required by DS-ACUC-A are claimed within DM-OCD-A.
	Testing Hints	

4.37 Data Sharing - Access Control Site Configuration - A

Devices claiming support for Data Sharing - Access Control Site Configuration - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Access Control Site Configuration - A]

Data Sharing - Access Control Site Configuration - A		
	R[‡]	Base Requirements
	R	*Supports DS-RP-A*
	R	*Supports DS-WP-A*
	R	*Supports DM-OCD-A*
[‡]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.37 Data Sharing - Access Control Site Configuration - A]

4.37 Data Sharing - Access Control Site Configuration - A

4.37.1 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.
	Test Directives	Repeat the test for <u>each</u> of the standard object types and associated properties specified by DS-ACSC-A.
	Testing Hints	
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for <u>each</u> of the required object types listed in the BIBB definition. Repeat for <u>each</u> 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	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.37.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties of Access Control objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.37.3 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.37.2 Supports DM-OCD-A

The IUT shall support DM-OCD-A in order to create and delete Access Control objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DM-OCD-A, and that all object types required by DS-ACSC-A are claimed within DM-OCD-A.
	Testing Hints	

4.40 Data Sharing - Access Control Access Door - A

Devices claiming support for Data Sharing - Access Control Access Door - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Access Control Access Door - A]

Data Sharing - Access Control Access Door - A		
	R[‡]	Base Requirements
	R	*Supports DS-RP-A*
	R	*Supports DS-WP-A*
	[‡]~~Contact BTL for interim tests for this BIBB.~~	

Test Plan Changes

[In BTL Test Plan, replace section 4.40 Data Sharing - Access Control Access Door - A]

4.40 Data Sharing - Access Control Access Door - A

4.40.1 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.
	Test Directives	Repeat the test for <u>each</u> of the standard object types and associated properties specified by DS-ACAD-A.
	Testing Hints	
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for <u>each</u> of the required object types listed in the BIBB definition. Repeat for <u>each</u> 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	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.40.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties of Access Door objects.

Verify Checklist		
	Test Conditionality	Must be executed.

	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.40.3 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update Access Door properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.41 Data Sharing - Access Control Credential Data Input - A

Devices claiming support for Data Sharing - Access Control Credential Data Input - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Access Control Credential Data Input - A]

Data Sharing - Access Control Credential Data Input - A		
	R[‡]	Base Requirements
	R	*Supports DS-RP-A*
	R	*Supports DS-WP-A*
	R	*Supports DS-COV-A*
[‡]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.41 Data Sharing - Access Control Credential Data Input - A]

4.41 Data Sharing - Access Control Credential Data Input - A

4.41.1 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.
	Test Directives	Repeat the test for <u>each</u> of the standard object types and associated properties specified by DS-ACCDI-A.
	Testing Hints	
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for <u>each</u> of the required object types listed in the BIBB definition. Repeat for <u>each</u> 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	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.41.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties of Credential Data Input objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.41.3 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update Credential Data Input properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.41.4 Supports DS-COV-A

The IUT shall support DS-COV-A in order to receives COV notifications for Credential Data Input objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-COV-A, and that Credential Data Input is claimed within DM-COV-A.
	Testing Hints	

4.43 Data Sharing - Lighting Output - A

Devices claiming support for Data Sharing - Lighting Output - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Lighting Output - A]

Data Sharing - Lighting Output - A		
	R[1]	Base Requirements
	R	*Supports DS-WP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.43 Data Sharing - Lighting Output - A]

4.43 Data Sharing - Lighting Output - A

4.43.1 Base Requirements

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

135.1-2019 - 8.22.1 - Writing Non-Array Properties		
	Test Conditionality	Must be executed if the IUT does not support DS-ALO-A.
	Test Directives	Repeat the test for each of the object types listed in the BIBB, writing to the Present Value property.
	Testing Hints	

4.43.2 Supports DS-WP-A

The IUT shall support DS-WP-A in order to control objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.44 Data Sharing - Lighting Output Status - A

Devices claiming support for Data Sharing - Lighting Output Status - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Lighting Output Status - A]

Data Sharing - Lighting Output Status - A		
	R[1]	Base Requirements
	R	*Supports DS-RP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.44 Data Sharing - Lighting Output Status - A]

4.44 Data Sharing - Lighting Output Status - A

4.44.1 Base Requirements

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

135.1-2019 - 8.18.1 - Reading Non-Array Properties		
	Test Conditionality	
	Test Directives	Repeat the test for each of the object types listed in the BIBB, reading the Present_Value and Egress_Active properties from the objects types as required by the BIBB.
	Testing Hints	

4.44.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to retrieve property values from lighting objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A, and claims the ability to read non-array properties, Enumerated, Unsigned, and REAL properties.
	Testing Hints	

4.45 Data Sharing - Advanced Lighting Output - A

Devices claiming support for Data Sharing - Advanced Lighting Output - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Advanced Lighting Output - A]

Data Sharing - Advanced Lighting Output - A		
	R[1]	Base Requirements
	R	*Supports DS-WP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.45 Data Sharing - Advanced Lighting Output - A]

4.45 Data Sharing - Advanced Lighting Output - A

4.45.1 Base Requirements

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

135.1-2019 - 8.22.1 - Writing Non-Array Properties		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for each property of each of the object types listed in the BIBB, except those that are required to be read-only by the standard.
	Testing Hints	

4.45.2 Supports DS-WP-A

The IUT shall support DS-WP-A in order to control objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.48 Data Sharing - Lighting Output Management - A

Devices claiming support for Data Sharing - Lighting Output Management - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Lighting Output Management - A]

Data Sharing - Lighting Output Management - A		
	R[‡]	Base Requirements
	R	*Supports DM-OCD-A*
[‡]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.48 Data Sharing - Lighting Output Management - A]

4.48 Data Sharing - Lighting Output Management - A

4.48.1 Base Requirements

Base requirements must be met by any IUT claiming conformance to this BIBB. There are no base requirements tests for this section.

4.48.2 Supports DM-OCD-A

The IUT shall support DM-OCD-A in order to create and delete Access Control objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DM-OCD-A, and that all object types required by DS-LOM-A are claimed within DM-OCD-A.
	Testing Hints	

4.49 Data Sharing - Lighting View - A

Devices claiming support for Data Sharing - Lighting View - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Lighting View - A]

Data Sharing - Lighting View - A		
	R[1]	Base Requirements
	R	*Supports DS-RP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.49 Data Sharing - Lighting View - A]

4.49 Data Sharing - Lighting View - A

4.49.1 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.
	Test Directives	Repeat the test for each of the standard object types and associated properties specified by DS-LV-A.
	Testing Hints	

4.49.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties for presentation.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.50 Data Sharing - Lighting Advanced View - A

Devices claiming support for Data Sharing - Lighting Advanced View - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Lighting Advanced View - A]

Data Sharing - Lighting Advanced View - A		
	R[1]	Base Requirements
	R	*Supports DS-RP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.50 Data Sharing - Lighting Advanced View - A]

4.50 Data Sharing - Lighting Advanced View - A

4.50.1 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.
	Test Directives	Repeat the test for all standard objects and properties identified in DS-LAV-A. 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-LAV-A are met.
	Testing Hints	

4.50.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties for presentation.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

4.51 Data Sharing - Lighting Modify - A

Devices claiming support for Data Sharing - Lighting Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Lighting Modify - A]

Data Sharing - Lighting Modify - A		
	R[1]	Base Requirements
	R	*Supports DS-WP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.51 Data Sharing - Lighting Modify - A]

4.51 Data Sharing - Lighting 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 if the IUT does not support DS-LAM-A.
	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.
	Test Directives	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.51.2 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

4.52 Data Sharing - Lighting Advanced Modify - A

Devices claiming support for Data Sharing - Lighting Advanced Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Data Sharing - Lighting Advanced Modify - A]

Data Sharing - Lighting Advanced Modify - A		
	R[1]	Base Requirements
	R	*Supports DS-WP-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 4.52 Data Sharing - Lighting Advanced Modify - A]

4.52 Data Sharing - Lighting Advanced Modify - A

4.52.1 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	This test should be executed at priority 8 only, i.e. $PR_1 = 8$.
	Testing Hints	

4.52.2 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

5.27 Alarm and Event Management - Life Safety View Notifications - A

Devices claiming support for Alarm and Event Management - Life Safety View Notification - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Alarm and Event Management - Life Safety View Notifications - A]

Alarm and Event Management - Life Safety View Notifications - A		
	R[1]	Base Requirements
	R	*Supports AE-N-A*
	R	*Supports AE-LS-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 5.27 Alarm and Event Management - Life Safety View Notifications - A]

5.27 Alarm and Event Management - Life Safety View Notifications - A

5.27.1 Base Requirements

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

BTL - 9.4.5 - ConfirmedEventNotification Simple Presentation		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for CHANGE_OF_LIFE_SAFETY, and each of the transitions defined for that event type. Repeat the test for FAULT_LIFE_SAFETY. Execute at least once with a Message_Text 32 or more characters in length.
	Testing Hints	
135.1-2019 - 9.5.1 - UnconfirmedEventNotification Simple Presentation		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	Repeat the test for CHANGE_OF_LIFE_SAFETY, and each of the transitions defined for that event type. Repeat the test for FAULT_LIFE_SAFETY. Execute at least once with a Message_Text 32 or more characters in length.

5.27.2 Supports AE-N-A

The IUT shall support AE-N-A in order to receive and display event notifications.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-N-A.

	Testing Hints	

5.27.3 Supports AE-LS-A

The IUT shall support AE-LS-A in order to silence / unsilence life safety objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-LS-A.
	Testing Hints	

5.28 Alarm and Event Management - Life Safety Advanced View Notifications - A

Devices claiming support for Alarm and Event Management - Life Safety Advanced View Notifications - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Alarm and Event Management - Life Safety Advanced View Notifications - A]

Alarm and Event Management - Life Safety Advanced View Notifications - A		
	R[1]	Base Requirements
	R	Supports AE-AVN-A
	R	Supports AE-LS-A
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 5.28 Alarm and Event Management - Life Safety Advanced View Notifications - A]

5.28 Alarm and Event Management - Life Safety Advanced View Notifications - A

5.28.1 Base Requirements

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

BTL - 9.4.6 - ConfirmedEventNotification Full Presentation		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for CHANGE_OF_LIFE_SAFETY, and each of the transitions defined for that event type. Repeat the test for FAULT_LIFE_SAFETY. Execute at least once with a Message_Text 256 or more characters in length.
	Testing Hints	
135.1-2019 - 9.5.2 - UnconfirmedEventNotification Full Presentation		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	Repeat the test for CHANGE_OF_LIFE_SAFETY, and each of the transitions defined for that event type. Repeat the test for FAULT_LIFE_SAFETY. Execute at least once with a Message_Text 256 or more characters in length.

5.28.2 Supports AE-AVN-A

The IUT shall support AE-AVN-A in order to receive and display standard event notifications for most standard object types.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-AVN-A.
	Testing Hints	

5.28.3 Supports AE-LS-A

The IUT shall support AE-LS-A in order to silence / unsilence life safety objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-LS-A.
	Testing Hints	

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

Devices claiming support for Alarm and Event Management - Life Safety View Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Alarm and Event Management - Life Safety View Modify - A]

Alarm and Event Management - Life Safety View Modify - A		
	R[‡]	Base Requirements
	R	*Supports DS-RP-A*
	R	*Supports DS-WP-A*
	R	*Supports AE-VM-A*
[‡]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 5.29 Alarm and Event Management - Life Safety View Modify - A]

5.29 Alarm and Event Management - Life Safety View 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.
	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.
	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	

5.29.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties for presentation.

Verify Checklist		
	Test Conditionality	Must be executed.

	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

5.29.3 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

5.29.4 Supports AE-VM-A

The IUT shall support AE-VM-A in order to facilitate configuration of alarm parameters by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-VM-A.
	Testing Hints	

5.30 Alarm and Event Management - Life Safety Advanced View Modify - A

Devices claiming support for Alarm and Event Management - Life Safety Advanced Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Alarm and Event Management - Life Safety Advanced View Modify - A]

Alarm and Event Management - Life Safety Advanced View Modify - A		
	R[1]	Base Requirements
	R	*Supports DS-RP-A*
	R	*Supports DS-WP-A*
	R	*Supports DM-OCD-A*
	R	*Supports AE-AVM-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 5.30 Alarm and Event Management - Life Safety Advanced View Modify - A]

5.30 Alarm and Event Management - Life Safety Advanced View Modify - A

5.30.1 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.
	Test Directives	
	Testing Hints	Repeat the test for each standard event generating object type which can generate CHANGE_OF_LIFE_SAFETY event notifications, or use the FAULT_LIFE_SAFETY algorithm.
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	Repeat the test for each standard event generating object type which can generate CHANGE_OF_LIFE_SAFETY event notifications, or use the FAULT_LIFE_SAFETY algorithm.

5.30.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties for presentation.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

5.30.3 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

5.30.4 Supports DM-OCD-A

The IUT shall support DM-OCD-A in order to facilitate creation and deletion of life safety objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DM-OCD-A and that all object types required by DS-LSAVM-A are claimed within DM-OCD-A.
	Testing Hints	

5.30.5 Supports AE-AVM-A

The IUT shall support AE-AVM-A in order to facilitate configuration of alarm parameters by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-AVM-A.
	Testing Hints	

5.31 Alarm and Event Management - Access Control - A

Devices claiming support for Alarm and Event Management - Access Control - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Alarm and Event Management - Access Control - A]

Alarm and Event Management - Access Control - A		
	R	Base Requirements
	R	Executes ConfirmedEventNotifications
	R	Executes UnconfirmedEventNotifications
	R	Processes intrinsically generated notifications
	R	Processes algorithmically generated notifications
	R	Processes event notifications with timestamps of the BACnetDateTime form
	R	Processes event notifications with timestamps of the Time form
	R	Processes event notifications with timestamps of the Sequence Number form
	R	Supports AE-ACK-A

Test Plan Changes

[In BTL Test Plan, replace section 5.31 Alarm and Event Management - Access Control - A]

5.31 Alarm and Event Management - Access Control - A

5.31.1 Base Requirements

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

BTL - 9.4.X1 - Unsupported Message Text Character Set ConfirmedEventNotification Test		
	Test Conditionality	If the IUT supports all character sets, this test shall be skipped.
	Test Directives	
	Testing Hints	
BTL - 9.5.X1 - Unsupported Message Text Character Set UnconfirmedEventNotification Test		
	Test Conditionality	If the IUT supports all character sets, this test shall be skipped.
	Test Directives	
	Testing Hints	

5.31.2 Executes ConfirmedEventNotifications

The IUT is capable of executing ConfirmedEventNotifications with an Event Type of ACCESS_EVENT. This functionality will be covered by the testing of the individual algorithms.

No Specific Test		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT's EPICS claims that it supports the ConfirmedEventNotification service.
	Testing Hints	

5.31.3 Executes UnconfirmedEventNotifications

The IUT is capable of executing UnconfirmedEventNotifications with an Event Type of ACCESS_EVENT. There are currently no tests defined for this functional item.

No Specific Test		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT's EPICS claims that it supports the UnconfirmedEventNotification service.
	Testing Hints	

5.31.4 Processes Intrinsically Generated Notifications

The IUT is capable of executing ConfirmedEventNotifications with an Event Type of ACCESS_EVENT that reference an object type other than Event Enrollment.

135.1-2019 - 9.4.1 - ConfirmedEventNotification Using the Time Form of the 'Timestamp' Parameter and Conveying a Text Message, 135.1-2019 - 9.4.2 - ConfirmedEventNotification Using the DateTime Form of the 'Timestamp' Parameter and no Text Message, or 135.1-2019 - 9.4.3 - ConfirmedEventNotification Using the Sequence Number Form of the 'Timestamp' Parameter and no Text Message		
	Test Conditionality	At least one of the tests must be executed with the Event Object Identifier referencing a BACnet object other than an Event Enrollment object.
	Test Directives	Execute using an event type of ACCESS_EVENT.
	Testing Hints	

5.31.5 Processes Algorithmically Generated Notifications

The IUT is capable of executing ConfirmedEventNotifications with an Event Type of ACCESS_EVENT that reference an Event Enrollment object.

135.1-2019 - 9.4.1 - ConfirmedEventNotification Using the Time Form of the 'Timestamp' Parameter and Conveying a Text Message, 135.1-2019 - 9.4.2 - ConfirmedEventNotification Using the DateTime Form of the 'Timestamp' Parameter and no Text Message, or 135.1-2019 - 9.4.3 - ConfirmedEventNotification Using the Sequence Number Form of the 'Timestamp' Parameter and no Text Message		
	Test Conditionality	At least one of the tests must be executed with the Event Object Identifier referencing an Event Enrollment object.
	Test Directives	Execute using an event type of ACCESS_EVENT.
	Testing Hints	

5.31.6 Processes Event Notifications with Timestamps of the BACnetDateTime Form

The IUT is capable of executing ConfirmedEventNotifications that contain a timestamp of the BACnetDateTime form.

135.1-2019 - 9.4.2 - ConfirmedEventNotification Using the DateTime Form of the 'Timestamp' Parameter and no Text Message		
	Test Conditionality	Must be executed.
	Test Directives	Execute using an event type of ACCESS_EVENT.
	Testing Hints	

5.31.7 Processes Event Notifications with Timestamps of the Time Form

The IUT is capable of executing ConfirmedEventNotifications that contain a timestamp of the Time form.

135.1-2019 - 9.4.1 - ConfirmedEventNotification Using the Time Form of the 'Timestamp' Parameter and Conveying a Text Message		
	Test Conditionality	Must be executed.
	Test Directives	Execute using an event type of ACCESS_EVENT.
	Testing Hints	

5.31.8 Processes Event Notifications with Timestamps of the Sequence Number Form

The IUT is capable of executing ConfirmedEventNotifications that contain a timestamp of the Sequence Number form.

135.1-2019 - 9.4.3 - ConfirmedEventNotification Using the Sequence Number Form of the 'Timestamp' Parameter and no Text Message		
	Test Conditionality	Must be executed.
	Test Directives	Execute using an event type of ACCESS_EVENT.
	Testing Hints	

5.31.9 Supports AE-ACK-A

The IUT must support AE-ACK-A if it claims support for AE-AC-A.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-ACK-A in the Checklist.
	Testing Hints	
BTL - 8.1 - AcknowledgeAlarm Service Initiation Tests		
	Test Conditionality	Must be executed.
	Test Directives	Execute using an event type of ACCESS_EVENT. Execute once to acknowledge a ConfirmedEventNotification, and again to acknowledge an UnconfirmedEventNotification.
	Testing Hints	

5.32 Alarm and Event Management - Access Control - B

Devices claiming support for Alarm and Event Management - Access Control - B must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Alarm and Event Management - Access Control - B]

Alarm and Event Management - Access Control - B		
	R	Base Requirements
	R	Supports AE-INFO-B
	R	Supports the Notification Class Object
	C[1]	Supports AE-ACK-B
	C[2]	Implements intrinsic alarming
	C[2]	Supports the Event Enrollment object
	C[3]	Generates Event Notifications with Timestamps of the BacnetDateTime Form
	C[3]	Generates Event Notifications with Timestamps of the Time Form
	C[3]	Generates Event Notifications with Timestamps of the Sequence Number Form
	O	Supports Event_Message_Texts Property
	O	Supports Event_Message_Texts_Config Property
[1] Required if EventNotifications with service parameter AckRequired = True can be issued. [2] At least one of these options must be supported to claim support for this BIBB. [3] At least one of these options must be supported to claim support for this BIBB.		

Test Plan Changes

[In BTL Test Plan, replace section 5.32 Alarm and Event management - Access Control - B]

5.32 Alarm and Event Management - Access Control - B

5.32.1 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 supports Access Point objects.
	Testing Hints	
BTL - 7.3.1.10.2 - Event_Enable Tests for TO_NORMAL only Algorithms		
	Test Conditionality	Must be executed.
	Test Directives	Apply to an object which generates ACCESS_EVENT notifications.
	Testing Hints	
135.1-2019 - 7.3.1.12 - Notify_Type Test		
	Test Conditionality	If the IUT cannot be configured to meet the 135.1-2019 configuration requirements then this test shall be skipped.
	Test Directives	Apply to an object which generates ACCESS_EVENT notifications.
	Testing Hints	
BTL - 7.3.1.X9.1 - Event_Detection_Enable Inhibits Event Generation		
	Test Conditionality	If Protocol_Revision < 13, then this test shall be skipped.

	Test Directives	Apply to an object which generates ACCESS_EVENT notifications.
	Testing Hints	
BTL - 7.3.1.X9.2 - Event_Detection_Enable Inhibits FAULT		
	Test Conditionality	If Protocol_Revision < 13, then this test shall be skipped.
	Test Directives	Apply to an object which generates ACCESS_EVENT notifications.
	Testing Hints	
BTL - 7.3.1.X6.1 - Event_Algorithm_Inhibit Test		
	Test Conditionality	If the IUT has no object which generates ACCESS_EVENT notifications in which the Event_Algorithm_Inhibit property is present and does not support the Event_Algorithm_Inhibit_Ref property.
	Test Directives	Apply to an object which generates ACCESS_EVENT notifications.
	Testing Hints	
BTL - 7.3.1.X7.1 - Event_Algorithm_Inhibit_Ref Test		
	Test Conditionality	If the IUT has no object which generates ACCESS_EVENT notifications in which the Event_Algorithm_Inhibit_Ref property is present, this test shall be skipped.
	Test Directives	
	Testing Hints	
BTL - 7.3.1.X7.2 - Event_Algorithm_Inhibit Writable Test		
	Test Conditionality	If the IUT has no object which generates ACCESS_EVENT notifications in which the Event_Algorithm_Inhibit_Ref property is absent or can be made uninitialized, this test shall be skipped.
	Test Directives	
	Testing Hints	

5.32.2 Supports AE-INFO-B

The IUT must support AE-INFO-B if it claims support for AE-AC-B.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-INFO-B in the Checklist.
	Testing Hints	

5.32.3 Supports the Notification Class Object

The IUT supports the Notification Class object in order to send notifications.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for the Notification Class Object in the Checklist.
	Testing Hints	

5.32.4 Supports AE-ACK-B

The IUT supports AE-ACK-B in order to execute the AcknowledgeAlarm Service Service if the IUT is able to send event-notifications with service parameter AckRequired = True.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-ACK-B in the Checklist.
	Testing Hints	

5.32.5 Supports Intrinsic Alarming

The IUT contains, or can be made to contain, an Access Point object that can generate ConfirmedEventNotifications and UnconfirmedEventNotifications.

BTL - 8.4.X11 - ACCESS_EVENT Test (ConfirmedEventNotification)		
	Test Conditionality	Must be executed unless IUT only supports read-only Recipient_List properties and does not claim Notification Forwarder objects.
	Test Directives	Apply to an Access Point object.
	Testing Hints	
BTL - 8.5.X11 - ACCESS_EVENT Test (UnconfirmedEventNotification)		
	Test Conditionality	Must be executed.
	Test Directives	Apply to an Access Point object.
	Testing Hints	

5.32.6 Supports the Event Enrollment object

The IUT contains, or can be made to contain an Event Enrollment object that can generate ACCESS_EVENT notifications.

BTL - 8.4.X11 - ACCESS_EVENT Test (ConfirmedEventNotification)		
	Test Conditionality	Must be executed unless IUT only supports read-only Recipient_List properties and does not claim Notification Forwarder objects.
	Test Directives	Apply to an Event Enrollment object.
	Testing Hints	
BTL - 8.5.X11 - ACCESS_EVENT Test (UnconfirmedEventNotification)		
	Test Conditionality	Must be executed.
	Test Directives	Apply to an Event Enrollment object.
	Testing Hints	

5.32.7 Generates Event Notifications with Timestamps of the BacnetDateTime Form

The IUT generates ACCESS_EVENT notifications with the Time Stamp parameter taking the BACnetDateTime form.

BTL - 8.4.X11 - ACCESS_EVENT Test (ConfirmedEventNotification)		
	Test Conditionality	Must be executed.
	Test Directives	Execute the test with the IUT configured to generate ACCESS_EVENT notifications with timestamps of the BACnetDateTime form.
	Testing Hints	
BTL - 8.5.X11 - ACCESS_EVENT Test (UnconfirmedEventNotification)		
	Test Conditionality	Must be executed.
	Test Directives	Execute the test with the IUT configured to generate ACCESS_EVENT notifications with timestamps of the BACnetDateTime form.
	Testing Hints	

5.32.8 Generates Event Notifications with Timestamps of the Time Form

The IUT generates ACCESS_EVENT notifications with the Time Stamp parameter taking the Time form.

BTL - 8.4.X11 - ACCESS_EVENT Test (ConfirmedEventNotification)		
	Test Conditionality	Must be executed.
	Test Directives	Execute the test with the IUT configured to generate ACCESS_EVENT notifications with timestamps of the Time form.
	Testing Hints	

BTL - 8.5.X11 - ACCESS_EVENT Test (UnconfirmedEventNotification)		
	Test Conditionality	Must be executed.
	Test Directives	Execute the test with the IUT configured to generate ACCESS_EVENT notifications with timestamps of the Time form.
	Testing Hints	

5.32.9 Generates Event Notifications with Timestamps of the Sequence Number Form

The IUT generates ACCESS_EVENT notifications with the Time Stamp parameter taking the Sequence Number form.

BTL - 8.4.X11 - ACCESS_EVENT Test (ConfirmedEventNotification)		
	Test Conditionality	Must be executed.
	Test Directives	Execute the test with the IUT configured to generate ACCESS_EVENT notifications with timestamps of the Sequence Number form.
	Testing Hints	
BTL - 8.5.X11 - ACCESS_EVENT Test (UnconfirmedEventNotification)		
	Test Conditionality	Must be executed.
	Test Directives	Execute the test with the IUT configured to generate ACCESS_EVENT notifications with timestamps of the Sequence Number form.
	Testing Hints	

5.32.10 Supports Event_Message_Texts Property

The IUT supports Access Point objects that support the Event_Message_Texts property.

BTL - 7.3.1.X4 - Event_Message_Texts Tests		
	Test Conditionality	Must be executed.
	Test Directives	Apply to an object which generates ACCESS_EVENT notifications that contains an Event_Message_Texts property.
	Testing Hints	

5.32.11 Supports Event_Message_Texts_Config Property

The IUT supports Access Point objects that support the Event_Message_Texts_Config property.

BTL - 7.3.1.X5 - Event_Message_Texts_Config Test		
	Test Conditionality	Must be executed.
	Test Directives	Apply to an object which generates ACCESS_EVENT notifications. Repeat for each supported transition type (TO_OFFNORMAL, TO_FAULT, TO_NORMAL). Different objects may be selected for different transitions.
	Testing Hints	

5.33 Alarm and Event Management - Access Controls Advanced View Notifications - A

Devices claiming support for Alarm and Event Management - Access Control Advanced View Notifications - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Alarm and Event Management - Access Control Advanced View Notifications - A]

Alarm and Event Management - Access Control Advanced View Notifications - A		
	R[1]	Base Requirements
	R	*Supports AE-AVN-A*
	R	*Supports AE-AC-A*
[1]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 5.33 Alarm and Event Management - Access Controls Advanced View Notifications - A]

5.33 Alarm and Event Management - Access Controls Advanced View Notifications - A

5.33.1 Base Requirements

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

BTL - 9.4.6 - ConfirmedEventNotification Full Presentation		
	Test Conditionality	Must be executed.
	Test Directives	Repeat the test for ACCESS_EVENT, and each of the transitions defined for that event type. Execute at least once with a Message_Text 256 or more characters in length.
	Testing Hints	
135.1-2019 - 9.5.2 - UnconfirmedEventNotification Full Presentation		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	Repeat the test for ACCESS_EVENT, and each of the transitions defined for that event type. Execute at least once with a Message_Text 256 or more characters in length.

5.33.2 Supports AE-AVN-A

The IUT must support AE-AVN-A in order to receive and display standard event notifications for most standard object types.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-AVN-A in the Checklist.

	Testing Hints	

5.33.3 Supports AE-AC-A

The IUT must support AE-AC-A if it claims support for AE-ACAVN-A.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-AC-A in the Checklist.
	Testing Hints	

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

Devices claiming support for Alarm and Event Management - Access Control View Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Alarm and Event Management - Access Control View Modify - A]

Alarm and Event Management - Access Control View Modify - A		
	R‡	Base Requirements
	R	*Supports AE-VM-A*
‡~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 5.34 Alarm and Event Management - Access Control View Modify - A]

5.34 Alarm and Event Management - Access Control View 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.
	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.
	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.

5.34.2 Supports AE-VM-A

The IUT shall support AE-VM-A in order to facilitate configuration of alarm parameters by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-VM-A.
	Testing Hints	

5.35 Alarm and Event Management - Access Control Advanced View Modify - A

Devices claiming support for Alarm and Event Management - Access Control Advanced View Modify - A must comply with the following section.

Checklist Changes

[In BTL Checklist, replace section Alarm and Event Management - Access Control Advanced View Modify - A]

Alarm and Event Management - Access Control Advanced View Modify - A		
	R[‡]	Base Requirements
	R	*Supports DS-RP-A*
	R	*Supports DS-WP-A*
	R	*Supports D-OCD-A*
	R	*Supports AE-AVM-A*
[‡]~~Contact BTL for interim tests for this BIBB.~~		

Test Plan Changes

[In BTL Test Plan, replace section 5.35 Alarm and Event Management - Access Control Advanced View Modify - A]

5.35 Alarm and Event Management - Access Control Advanced View Modify - A

5.35.1 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.
	Test Directives	
	Testing Hints	Repeat the test for each standard event generating object type which can generate ACCESS_EVENT event notifications.
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	Repeat the test for each standard event generating object type which can generate ACCESS_EVENT event notifications.

5.35.2 Supports DS-RP-A

The IUT shall support DS-RP-A in order to read properties for presentation.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-RP-A.
	Testing Hints	

5.35.3 Supports DS-WP-A

The IUT shall support DS-WP-A in order to update properties modified by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DS-WP-A.
	Testing Hints	

5.35.4 Supports DM-OCD-A

The IUT shall support DM-OCD-A in order to facilitate creation and deletion of life safety objects.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for DM-OCD-A and that all object types required by DS-ACAVM-A are claimed within DM-OCD-A.
	Testing Hints	

5.35.5 Supports AE-AVM-A

The IUT shall support AE-AVM-A in order to facilitate configuration of alarm parameters by the user.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AE-AVM-A.
	Testing Hints	

8.30 Device Management – Slave Proxy - B

Devices claiming support for Device Management - Slave Proxy - B must claim support for Protocol_Revision 4 or higher and comply with the following section.

Addendum 135-2001*a* added MS/TP slave proxy functionality. This document makes needed changes in the BTL Test Package to claim the associated BIBB DM-SP-B.

These changes are not contained in any SSPC proposal.

Checklist Changes

[In BTL Checklist, replace Device Management - Slave Proxy - B section]

Device Management - Slave Proxy - B		
	R[1]	Base Requirements
	O	*Supports Automatic Slave Address Binding*
[1]Contact BTL for interim tests for this BIBB.		

Test Plan Changes

[In BTL Test Plan, replace section 8.30 Device Management - Slave Proxy - B]

8.30 Device Management - Slave Proxy - B

8.30.1 Base Requirements

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

135.1-2019 - 13.5.1 Manual Slave Binding Test		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	
135.1-2019 - 13.5.3 Proxy Test		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	

8.30.2 Supports Automatic Slave Address Binding

The IUT support automatic slave address binding.

135.1-2019 - 13.5.2 Automatic Slave Discovery Test		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	

11.1 Gateway - Virtual Network - B

There are no tests in the BTL Test Package for the GW-VN-B BIBB.

These changes are not contained in any SSPC proposal.

Checklist Changes

[There are no Checklist changes]

Test Plan Changes

[In BTL Test Plan, replace section 11.1.1 Gateway - Virtual Network - B, Base Requirements]

11.1.1 Base Requirements

Verify Virtual Devices		
	Test Conditionality	Must be executed
	Test Directives	Test the virtual devices as per their BTL Checklist.
	Testing Hints	Similar to testing derivative products, the functionality supported might need to be spread over 2 or more virtual devices. In such cases, to which of the virtual devices any particular test is applied is left up to the test as long as all applicable tests are executed.
Verify Checklist		
	Test Conditionality	Must be executed
	Test Directives	Verify that the IUT claims the Network Management - Routing option "Routes Packets Between a Physical LAN and One or More Virtual LANs"
	Testing Hints	

13.5 Audit Reporting - View - A

Addendum 135-2016*bi* added Audit Reporting. This section adds support to the BTL Test Package for claiming AR-V-A.

These changes are not contained in any SSPC proposal.

Checklist Changes

[In BTL Checklist, replace Audit Reporting sections]

Audit Reporting - View - A		
	R[+]	Base Requirements
	C[1]	Supports initiation of AuditLogQuery by Target
	C[1]	Supports initiation of AuditLogQuery by Source
	C[1]	Supports initiation of ReadRange
[1] At least one of these must be supported.		
Audit Reporting - Advanced View and Modify - A		
	R[+]	Base Requirements
	C[1]	Supports initiation of AuditLogQuery by Target
	C[1]	Supports initiation of AuditLogQuery by Source
[1] At least one of these must be supported.		

Test Plan Changes

[In BTL Test Plan, replace section 13.5 Audit Reporting-View-A]

13.5 Audit Reporting-View-A

13.5.1 Base Requirements

Base requirements must be met by any IUT that supports AR-V-A.

13.5.2 Supports Initiation of AuditLogQuery By Target

BTL - 8.X.2 - Query and Present Audit Log Records By Target		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	

13.5.3 Supports Initiation of AuditLogQuery By Source

BTL - 8.X.1 - Query and Present Audit Log Records By Source		
	Test Conditionality	Must be executed.
	Test Directives	
	Testing Hints	

13.5.4 Supports Initiation of ReadRange

BTL - 8.18.X1 - Reading and Presenting Large List Properties		
	Test Conditionality	Must be executed.
	Test Directives	Apply on Log_Buffer property of an AuditLog and verify that each record is completely presented.
	Testing Hints	

13.6 Audit Reporting-Advanced View and Modify-A

13.6.1 Base Requirements

Base requirements must be met by any IUT that supports AR-AVM-A.

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims AR-V-A
	Testing Hints	
Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims DS-RP-A
	Testing Hints	
Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims DS-WP-A
	Testing Hints	
Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims DM-OCD-A and is able to create Audit Reporter and Audit Log objects.
	Testing Hints	
135.1-2019 - 8.18.3 - Reading and Presenting Properties		
	Test Conditionality	Must be executed.
	Test Directives	Repeat for all properties of the Audit Reporter and Audit Log objects specified by AR-AVM-A, and for all audit related properties in a randomly chosen set of other standard object types.
	Testing Hints	
135.1-2019 - 8.22.4 - Accepting Input and Modifying Properties		
	Test Conditionality	Must be executed.
	Test Directives	Repeat for all properties of the Audit Reporter and Audit Log objects specified by AR-AVM-A, and for all audit related properties in a randomly chosen set of other standard object types.
	Testing Hints	

13.6.2 Supports Initiation of AuditLogQuery By Target

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AuditLogQuery by Target for AR-V-A.
	Testing Hints	

13.6.3 Supports Initiation of AuditLogQuery By Source

Verify Checklist		
	Test Conditionality	Must be executed.
	Test Directives	Verify that the IUT claims support for AuditLogQuery by Source for AR-V-A.
	Testing Hints	

BTL Specified Tests Changes

This section contains all of the new and changed tests required by the interim test BTL Checklist and BTL Test Plan changes.

[Alarm and Event Management - Access Control - B Tests]
[In BTL Specified Tests, add clause 8.4.X11]

8.4.X11 ACCESS_EVENT Test (ConfirmedEventNotification)
Reason for Change: Add testing for ACCESS_EVENT algorithm.

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

Test Concept: The object, O1, begins the test in a NORMAL state. An access event, of a type listed in pAccessEvents is made to occur. It is verified that the IUT sends a confirmed notification of type ACCESS_EVENT. A second access event, of a type not listed in pAccessEvents, is made to occur, if such is supported by the IUT. It is verified that no notification is generated. A third access event, of a type listed in pAccessEvents is made to occur. It is verified that the IUT sends a confirmed notification of type ACCESS_EVENT.

Configuration Requirements: The IUT shall be configured such that the Event_Enable property has a value of TRUE for TO-NORMAL transitions. The Issue_Confirmed_Notifications property shall have a value of TRUE. The event-generating object shall be in a NORMAL state at the start of the test. pAccessEvents shall be configured with at least 1 access event type that can be made to occur. If possible, at least access event type that can be made to occur shall not be included in pAccessEvents.

Test Steps:

-- Cause an access-event to occur that should be reported
1. VERIFY O1, Event_State = NORMAL
2. MAKE(an access event occur which is listed in pAccessEvents)
3. BEFORE **Notification Fail Time**
   RECEIVE ConfirmedEventNotification-Request,
   'Process Identifier' = (the configured process ID),
   'Initiating Device Identifier' = IUT,
   'Event Object Identifier' = O1,
   'Time Stamp' = (Tnormal1: the current local time),
   'Notification Class' = (the configured notification class),
   'Priority' = (the value configured for a TO-NORMAL transition),
   'Event Type' = ACCESS_EVENT,
   'Notify Type' = EVENT | ALARM,
   'AckRequired' = TRUE | FALSE,
   'From State' = NORMAL,
   'To State' = NORMAL,
   'Event Values' = { pMonitoredValue, pStatusFlags, pAccessEventTag, pAccessEventType, pAccessCredential
   -- and optionally pAuthenticationFactor
   }
6. TRANSMIT BACnet-SimpleACK-PDU
7. VERIFY O1, Status_Flags = (FALSE, FALSE,?,?)
8. VERIFY O1, Event_State = NORMAL
9. VERIFY O1, Event_Time_Stamps = (*, *, Tnormal1)

-- Cause an access-event to occur that should not be reported
10. IF (the IUT can detect access events which are not in pAccessEvents) THEN {
    MAKE(an access event occur which is not listed in pAccessEvents)
    CHECK(no notification is generated)
    }
11. VERIFY O1, Status_Flags = (FALSE, FALSE,?,?)

12. VERIFY O1, Event_State = NORMAL
13. VERIFY O1, Event_Time_Stamps = (*, *, Tnormal1)

-- Cause an access-event to occur that should be reported
2. MAKE(an access event occur which is listed in pAccessEvents, and if possible different from the first access event)
3. BEFORE **Notification Fail Time**
   RECEIVE ConfirmedEventNotification-Request,
   'Process Identifier' = (the configured process ID),
   'Initiating Device Identifier' = IUT,
   'Event Object Identifier' = O1,
   'Time Stamp' = (Tnormal2: the current local time),
   'Notification Class' = (the configured notification class),
   'Priority' = (the value configured for a TO-NORMAL transition),
   'Event Type' = ACCESS_EVENT,
   'Notify Type' = EVENT | ALARM,
   'AckRequired' = TRUE | FALSE,
   'From State' = NORMAL,
   'To State' = NORMAL,
   'Event Values' = { pMonitoredValue, pStatusFlags, pAccessEventTag, pAccessEventType, pAccessCredential
   -- and optionally pAuthenticationFactor
   }
6. TRANSMIT BACnet-SimpleACK-PDU
7. VERIFY O1, Status_Flags = (FALSE, FALSE,?,?)
8. VERIFY O1, Event_State = NORMAL
9. VERIFY O1, Event_Time_Stamps = (*, *, Tnormal2)

Notes to Tester: The 'Message Text' parameter is omitted in the test description because it is optional. The IUT may include this parameter in the notification messages. The time stamps indicated by "*" can have a value that indicates an unspecified time or a time that precedes the timestamp of the first received notification.

[Alarm and Event Management - Access Control - B Tests]
[In BTL Specified Tests, add clause 8.5.X11]

8.5.X11 ACCESS_EVENT Test (UnconfirmedEventNotification)
Reason for Change: Add testing for ACCESS_EVENT algorithm.

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

Test Concept: The object, O1, begins the test in a NORMAL state. An access event, of a type listed in pAccessEvents is made to occur. It is verified that the IUT sends a confirmed notification of type ACCESS_EVENT. A second access event, of a type not listed in pAccessEvents, is made to occur, if such is supported by the IUT. It is verified that no notification is generated. A third access event, of a type listed in pAccessEvents is made to occur. It is verified that the IUT sends a confirmed notification of type ACCESS_EVENT.

Configuration Requirements: The IUT shall be configured such that the Event_Enable property has a value of TRUE for TO-NORMAL transitions. The Issue_Confirmed_Notifications property shall have a value of TRUE. The event-generating object shall be in a NORMAL state at the start of the test. pAccessEvents shall be configured with at least 1 access event type that can be made to occur. If possible, at least access event type that can be made to occur shall not be included in pAccessEvents.

Test Steps: The test steps for this test case are identical to the test steps in 8.4.X11 except that the event notification requests are UnconfirmedEventNotification requests and the TD does not acknowledge receiving the notifications.

Notes to Tester: The passing results for this test case are identical to the ones in 8.4.X11 except that the event notifications shall be conveyed using an UnconfirmedEventNotification service request.

[Audit Reporting Tests]
[Insert clause 8.X]

8.X AuditLogQuery Initiation Tests

This clause defines the tests necessary to demonstrate support for initiating AuditLogQuery service requests.

8.X.1 Query and Present Audit Log Records By Source

Reason for Change: no tests exist for the functionality.

Purpose: To verify that the IUT correctly initiates AuditLogQuery requests and presents the results.

Test Concept: The TD is setup with an AuditLog containing content from multiple sources and for multiple targets. The audit log contains example entries of all possible operations (see clause 19.Y.5) for audit source S1 with a mix of success and failure entries. The IUT is made to request and display the contents of the Audit Log for source S1. The results are verified that they match the content of the log.

Test Configuration:

<move the log description here>

Test Steps:

1. WHILE (the IUT has not retrieved and displayed all entries for S1)
   MAKE (the IUT request more content from the Audit Log)
   RECEIVE AuditLogQuery-Request
   'Audit Log' = (the audit log in the TD),
   'Query Parameters' = (a valid Audit Query by Source query including S1 as the source),
   'Start At Sequence Number' = (any valid value)
   'Requested Count' = (any valid value)
   TRANSMIT AuditLogQuery-Result
   'Audit Log' = (the audit log in the TD),
   'Records' = (the set of audit log records which match the query and which fit within the accepted response size),
   'No More Items' = (TRUE if the last item is included, FALSE otherwise)
2. CHECK(that the displayed content matches audit records returned and that the complete records are presented)

Notes to Tester: If manual interaction is required between subsequent AuditLogQuery requests, checking of the displayed content might need to be performed before the manual interaction is taken instead of at the end of retrieving all of the items.

8.X.2 Query and Present Audit Log Records By Target

Reason for Change: no tests exist for the functionality.

Purpose: To verify that the IUT correctly initiates AuditLogQuery requests and presents the results.

Test Concept: TD is setup as an audit logger with an Audit Log. The IUT is made to request and display the contents of the Audit Log for target T1. The results are verified that they match the content of the log.

Test Configuration: The TD is setup with an AuditLog containing content from multiple sources and for multiple targets. The audit log contains example entries of all possible operations (see clause 19.Y.5) for audit target T1 with a mix of success and failure entries.

Test Steps:

1. WHILE (the IUT has not retrieved and displayed all entries for T1)
   MAKE (the IUT request more content from the Audit Log)
   RECEIVE AuditLogQuery-Request
   'Audit Log' = (the audit log in the TD),
   'Query Parameters' = (a valid Audit Query by Target query including T1 as the target),
   'Start At Sequence Number' = (any valid value)
   'Requested Count' = (any valid value)
   TRANSMIT AuditLogQuery-Result
   'Audit Log' = (the audit log in the TD),
   'Records' = (the set of audit log records which match the query and which fit within the accepted response size),
   'No More Items' = (TRUE if the last item is included, FALSE otherwise)
2. CHECK(that the displayed content matches audit records returned and that the complete records are presented)

Notes to Tester: If manual interaction is required between subsequent AuditLogQuery requests, checking of the displayed content might need to be performed before the manual interaction is taken instead of at the end of retrieving all of the items.

[WriteGroup Tests]
[In BTL Specified Tests, add clause 8.X WriteGroup Service Initiation Tests]

8.X2 WriteGroup Service Initiation Tests

This clause defines the tests necessary to demonstrate support for initiating WriteGroup service requests.

BACnet Reference Clause: 15.11.

8.X2.1 Broadcasting to a Group of Channel Objects

Purpose: Verify that the IUT can initiate a WriteGroup request to an arbitrary group with an arbitrary channel number.

Test Concept: Make the IUT perform a WriteGroup request to a tester selected group and channel. Verify that the request is generated.

Test Steps:

1. MAKE(the IUT initiate a WriteGroup request to group G and Channel C)
2. RECEIVE WriteGroup-Request
   DESTINATION = GLOBAL_BROADCAST | LOCAL_BROADCAST | REMOTE_BROADCAST | TD,
   'Group Number' = G,
   'Write Priority' = (any valid value),
   'Change List' = (a valid list of 1 or more changes which impact channel C),
   'Inhibit Delay' = (absent or TRUE or FALSE)