



ADDENDA

**BSR/ASHRAE Addendum bc to
ANSI/ASHRAE Standard 135-2012**



Data Communication Protocol for Building Automation and Control Networks

Approved by ASHRAE on April 29, 2016, and by the American National Standards Institute on April 29, 2016.

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[This foreword and the “rationales” on the following pages are not part of this standard. They are merely informative and do not contain requirements necessary for conformance to the standard.]

FOREWORD

The purpose of this addendum is to present changes to ANSI/ASHRAE Standard 135-2012 and Addenda. These modifications are the result of change proposals made pursuant to the ASHRAE continuous maintenance procedures and of deliberations within Standing Standard Project Committee 135. The changes are summarized below.

- 135-2012bc-1. Extend BIBBs for Primitive Value Objects, p. 2**
- 135-2012bc-2. Add New BIBBs for Event Enrollment and Subscription, p. 6**
- 135-2012bc-3. Amend B-AWS Related BIBBs for Revised Event Reporting, p. 8**
- 135-2012bc-4. Add Life Safety BIBBs and Device Profiles, p. 12**
- 135-2012bc-5. Add Physical Access Control BIBBs and Device Profiles, p. 24**
- 135-2012bc-6. Add an All-Domain Advanced Workstation Profile, p. 41**

In the following document, language to be added to existing clauses is indicated through the use of *italics*, while deletions are indicated by ~~strike through~~. Where entirely new subclauses are added, plain type is used throughout. All other material in this addendum is provided for context only.

135-2012bc-1. Extend BIBBs for Primitive Value Objects.

Rationale

The tables K-1 and K-5 currently list properties only in objects that were defined in the standard up through protocol revision 9.

BIBBs DS-V-A and DS-M-A are extended to include support for the primitive value objects, lighting related objects, and the Timer object.

[Change **Table K-1**, p. 878]

Table K-1. Properties for which Presentation Is Required

Analog Objects, Integer Value, Large Analog Value, Positive Integer Value	Binary Objects, Binary Lighting Output, BitString Value, CharacterString Value, Date Pattern Value, Date Value, Multi-state Objects, OctetString Value, Time Pattern Value, Time Value	Accumulator	Averaging
Object_Name Present_Value Status_Flags Units	Object_Name Present_Value Status_Flags	Object_Name Present_Value Status_Flags Value_Before_Change Value_Set Pulse_Rate	Object_Name Minimum_Value Average_Value Maximum_Value
Command	Device	Event Enrollment	Load Control
Object_Name Present_Value In_Process All_Writes_Successful	Object_Name System_Status	Object_Name Event_State Object_Property_Reference	Object_Name Present_Value Status_Flags State_Description
Loop	Multi-state Objects DateTime Pattern Value, DateTime Value	Program	Pulse Converter
Object_Name Present_Value Status_Flags Setpoint	Object_Name Present_Value Status_Flags Is_UTC	Object_Name Program_State	Object_Name Present_Value Status_Flags Adjust_Value Units
Channel	Lighting Output	Timer	
Object_Name Present_Value ¹ Write_Status Status_Flags	Object_Name Present_Value Status_Flags In_Progress	Present_Value Timer_State Timer_Running	

¹ Support for the 'Lighting Command' choice option is not required.

[Change Clause K.1.18, p. 879]

K.1.18 BIBB - Data Sharing - Advanced View - A (DS-AV-A)

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In order to ensure that products that claim support for DS-AV-A are capable of presenting accurate data values across the full range of values for each data type, devices claiming support for DS-AV-A shall be able to meet the requirements described in Table K-3.

Table K-3. Presentation Requirements by Datatype

Enumerated	Present the complete range of standard values defined for all standard enumeration types for the Protocol_Revision claimed by the A device. The actual presentation of the values is unrestricted (text, numeric, iconic, etc) as long as the individual values are distinguishable.
NULL	Present NULL values. The format is unrestricted as long as NULL is distinguishable from other values.
BOOLEAN	Present all valid values. The format is unrestricted as long as each valid value is distinguishable.
Unsigned, Unsigned8, Unsigned16, Unsigned32	Present the complete value range, unless specifically restricted by the standard for the property being displayed. The minimum displayable range for Unsigned by DS-AV-A devices is the same as Unsigned32 with the exception of array indexes, which shall have a minimum displayable range of Unsigned16. In addition, any Unsigned property whose value is also used as an array index, such as a Multi-state object's Present_Value, shall have a minimum displayable range of Unsigned16.
INTEGER	Present the complete value range, unless specifically restricted by the standard for the property being displayed. The minimum displayable range for INTEGER shall be -2147483648...2147483647.
REAL, Double	Present the complete value range, including special values such as +-INF and NaN, unless specifically restricted by the standard for the property being displayed.
OCTET STRING	<i>Present octet strings up to a length of 8 octets. The actual presentation of the values is unrestricted (text, numeric, iconic, etc.), as long as the individual values are distinguishable.</i>
Character String	<i>Present strings up to the length specified in Table K-4, encoded in any of the character sets supported by the A device.</i>
BIT STRING	<i>Present bit strings up to a length of 64 bits.</i> Present the complete range of standard values defined for all standard bit string types for the Protocol_Revision claimed by the A device. The actual presentation of the values is unrestricted (text, numeric, iconic, etc) as long as the individual values are distinguishable.
Enumerated	<i>Present the standard values defined for all standard enumerated types for the Protocol_Revision claimed by the A device. The actual presentation of the values is unrestricted (text, numeric, iconic, etc.), as long as the individual values are distinguishable.</i>
Date	Present all valid dates, including values that contain unspecified values (0xFF) <i>unspecified octets (X'FF')</i> , or special date values (such as 'even days') <i>which are defined for the Protocol_Revision claimed by the A device.</i> Where the month, day and year fields all contain singular specified values, the content of the DayOfWeek field may be ignored. The format is unrestricted as long as each valid value is uniquely presented.
Time	Present all valid times, including values that contain unspecified values <i>octets (X'FF')</i> . The format is unrestricted as long as each valid value is

	uniquely presented.
BACnetObjectIdentifier	Present all valid values. The format is unrestricted as long as each valid value is distinguishable. It is acceptable that BACnetObjectIdentifier values be replaced with unique object identification values such as the object's name, where available.

For Character String property values, the A device shall be capable of presenting string values for specific BACnet properties with at least the number of characters, independent of their encoding in any of the character sets supported by the A device, specified in Table K-4.

Table K-4. Minimum Character-String Lengths

Action Text	32
Application Software Version	64
Description	255
Description Of Halt	64
Device Type	64
File Type	32
Firmware Revision	64
Inactive Text/Active Text	32
Instance Of	64
Location	64
Model Name	64
Object Name	64
Present Value	64
Profile Name	64
State Text	32
Vendor Name	64
All other character string properties	32

...

[Change Table K-5, p. 881]

[Note: Accumulator and Pulse Converter objects have been moved to a new place in Table K-5]

K.1.19 BIBB - Data Sharing - Modify - A (DS-M-A)

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Table K-5. Standard Properties That DS-M-A Devices Shall Be Capable of Writing

Analog Objects, Binary Objects, Accumulator Averaging, Loop, Multi-state Objects, Pulse Converter, Binary Lighting Output, BitString Value, CharacterString Value, Date Pattern Value, Date Value, DateTime Pattern Value, DateTime Value, Integer Value, Large Analog Value,	Command, Event Enrollment, Program	Program	Loop
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<i>Lighting Output, OctetString Value, Positive Integer Value, Time Pattern Value, Time Value</i>			
Present_Value Out_Of_Service	Present_Value	Program_Change	Present_Value Out_Of_Service Setpoint
Accumulator	Pulse Converter	Channel	Timer
Present_Value Out_Of_Service Value_Before_Change Value_Set Pulse_Rate	Present_Value Out_Of_Service Adjust_Value	Present_Value ¹ Out_Of_Service	Present_Value Timer_State Timer_Running

¹ Support for the 'Lighting Command' choice option is not required.

[Change Table K-6, p. 881]

[Note: Table K-6 is reordered to match the order of appearance of primitive data types in Clause 21. Only the extensions of the table are indicated using the regular change formatting.]

Table K-6. Minimum Writable Value Ranges

Datatype	Value Range
NULL	NULL
Boolean	All valid values.
Unsigned8	The complete value range (0..255).
Unsigned16	The complete value range (0..65535).
Unsigned, Unsigned32	The complete value range (0..4294967295) with the exception of array indexes which shall have a minimum writable range of Unsigned16. In addition, any Unsigned property whose value is also used as an array index, such as a Multi-state object's Present_Value, shall have a minimum writable range of Unsigned16.
INTEGER	The complete value range (-2147483648...2147483647)
REAL, Double	Valid values across the complete range of the datatype except the special values such as INF, -INF, NaN, etc. The precision precision of values that can be written may be restricted.
Double	Valid values across the complete range of the datatype except the special values such as INF, -INF, NaN, etc. The precision of values that can be written may be restricted.
OCTET STRING	Values for octet strings up to a length of 8 octets.
Character String	Strings up to lengths described in Table K-4.
BIT STRING	Values for bit strings up to a length of 64 bits, and all valid values for the complete range of all standard bit string types for the Protocol_Revision claimed by the A device.
Enumerated	The standard values defined for the property being modified as defined by the claimed Protocol_Revision of the A device.
Date	All valid dates, including values that contain unspecified octets (X'FF') or special date values (such as 'even days') which are defined for the Protocol_Revision claimed by the A device.
Time	All valid times, including values that contain unspecified octets (X'FF').
BACnetObjectIdentifier	All valid values.
Character String	Strings up to lengths described in Table K-X4

135-2012bc-2. Add New BIBBs for Event Enrollment and Subscription.

Rationale

The standard currently does not specify requirements for claiming support of configurable event recipient lists, and A-side temporary event subscription through BACnet. These specifications are added to the standard as new Alarm and Event Management BIBBs. All forms of BACnetDestination shall be supported by B-side devices.

The device profiles B-BC and B-AAC are extended to require support of configurable recipient lists (B-side).

Support for A-side temporary event subscription is left optional for any device profile.

[Add new **Clause K.2.X1**, p.890]

K.2.X1 BIBB - Alarm and Event Management-Configurable Recipient Lists-B (AE-CRL-B)

Device B supports configuration of its Recipient_List properties.

BACnet Service	Initiate	Execute
WriteProperty		x
Who-Is	x	
I-Am		x

Devices claiming conformance to AE-CRL-B shall support at least one instance of a Notification Class or Notification Forwarder object.

The Recipient_List properties of all Notification Class and Notification Forwarder objects present in the device shall be writeable, support all forms of BACnetDestination, and support a minimum of 8 entries. The Recipient_List property shall be writeable using the WriteProperty service. Support of DM-LM-B to modify the Recipient_List property is optional.

A device claiming support for AE-CRL-B is interoperable with devices that support AE-AVM-A.

[Add new **Clause K.2.X2**, p.890]

[Note: this is an A-side companion BIBB to existing notification forwarding BIBBs AE-NF-B and AE-NF-I-B]

K.2.X2 BIBB - Alarm and Event Management-Temporary Event Subscription-A (AE-TES-A)

Device A subscribes in Notification Forwarder objects for temporary reception of event notifications from Device B, is able to renew the subscription, and to unsubscribe respectively.

BACnet Service	Initiate	Execute
ConfirmedEventNotification		x
UnconfirmedEventNotification		x
AddListElement	x	
RemoveListElement	x	

Devices claiming conformance to AE-TES-A shall provide the ability to add itself as an event notification recipient in the Subscribed_Recipients property of any Notification Forwarder object present in any device, to renew, and to cancel such subscriptions respectively. Devices claiming conformance to this BIBB shall use AddListElement and RemoveListElement to update Notification Forwarder objects' Subscribed_Recipients property for the purpose of self-subscription, renewal, and cancellation.

A device claiming support for AE-TES-A is interoperable with devices that support AE-NF-B or AE-NF-I-B.

[Change Clause L.2, p.907]

L.2 BACnet Building Controller (B-BC)

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Alarm and Event Management

- *Supports configuration of event recipient lists*
- Generation of alarm / event notifications and the ability to direct them to recipients
- Maintain a list of unacknowledged alarms / events
- Notifying other recipients that the acknowledgment has been received
- Adjustment of alarm / event parameters

...

[Change Clause L.3, p.907]

L.3 BACnet Advanced Application Controller (B-AAC)

...

Alarm and Event Management

- *Supports configuration of event recipient lists*
- Generation of limited alarm and event notifications and the ability to direct them to recipients
- Tracking acknowledgments of alarms from human operators
- Adjustment of alarm parameters

...

[Change Clause L.7, p.910]

L.7 Profiles of the Standard BACnet Devices

The following tables indicate which BIBBs shall be supported by each device type for each interoperability area.

...

Alarm & Event Management

B-AWS	B-OWS	B-OD	B-BC	B-AAC	B-ASC	B-SA	B-SS
AE-N-A	AE-N-A		AE-N-I-B	AE-N-I-B			
AE-ACK-A	AE-ACK-A		AE-ACK-B	AE-ACK-B			
			AE-INFO-B	AE-INFO-B			
			AE-ESUM-B				
AE-AS-A	AE-AS-A						
AE-AVM-A	AE-VM-A						
AE-AVN-A	AE-VN-A	AE-VN-A					
AE-ELVM-A ²							
			AE-CRL-B ³	AE-CRL-B ³			

...

¹ Not required if the device is a BACnet MS/TP Slave.

² Not required for devices claiming conformance to a Protocol_Revision less than 7.

³ Not required for devices claiming conformance to a Protocol_Revision less than 19.

135-2012bc-3. Amend B-AWS Related BIBBs for Revised Event Reporting.

Rationale

The current standard does not specify requirements for workstations to support the Notification Forwarder and Alert Enrollment objects, and new event reporting related properties added with addendum 135-2010af.

This change adds support of these new object types to the AE-AVM-A BIBB.

Both AE-VM-A and AE-AVM-A are modified to relate to algorithm parameters, not particular properties of particular objects.

[Change **Clause K.2.16**, pp. 886]

[Note: The fault algorithm FAULT_OUT_OF_RANGE and its configuration parameters were introduced with addendum 135-2012aw]

K.2.16 BIBB - Alarm and Event Management-View and Modify-A (AE-VM-A)

Device A displays and modifies limits and related parameters in ~~alarm-generating~~ *standard event-initiating* objects.

Device A shall support DS-RP-A and DS-WP-A. The A device shall be capable of using ReadProperty to retrieve and WriteProperty to modify any of ~~the properties~~ *the event and fault algorithm parameters* listed ~~below~~ *in Tables K-7 and K-8. Such parameters may be present in individual properties, in event parameter properties, or in fault parameter properties. See the respective property specifications.* Device A may use alternate services where support for execution of the alternate service is supported by Device B.

BACnet Service	Initiate	Execute
ReadProperty	x	
WriteProperty	x	

Devices claiming conformance to AE-VM-A shall be capable of reading, presenting, and writing ~~alarming-related properties from the following standard object types:~~ *all standard properties in standard objects that are configuration parameters of standard event and/or fault algorithms that have high and low numerical limits, as listed in Tables K-7 and K-8.*

Table K-7. Object Types for Which Presentation Is Required

Accumulator	Event Enrollment
Analog Input	Loop
Analog Output	Pulse Converter
Analog Value	

Table K-8. Properties AE-VM-A That Devices Shall Be Capable of Presenting and Modifying

Accumulator	Analog Objects	Event Enrollment	Loop	Pulse Converter
High_Limit	High_Limit	Event_Parameters	Error_Limit	High_Limit
Low_Limit	Low_Limit			Low_Limit
Limit_Monitoring_Interval	Deadband			Deadband

Table K-7. Event Algorithm Parameters That Devices Shall Be Capable of Presenting and Modifying

Event Algorithm	Event Algorithm Parameter
<i>DOUBLE_OUT_OF_RANGE</i>	<i>pLowLimit</i> <i>pHighLimit</i> <i>pDeadband</i>
<i>FLOATING_LIMIT</i>	<i>pLowDiffLimit</i> <i>pHighDiffLimit</i> <i>pDeadband</i>
<i>OUT_OF_RANGE</i>	<i>pLowLimit</i> <i>pHighLimit</i> <i>pDeadband</i>
<i>SIGNED_OUT_OF_RANGE</i>	<i>pLowLimit</i> <i>pHighLimit</i> <i>pDeadband</i>
<i>UNSIGNED_OUT_OF_RANGE</i>	<i>pLowLimit</i> <i>pHighLimit</i> <i>pDeadband</i>
<i>UNSIGNED_RANGE</i>	<i>pLowLimit</i> <i>pHighLimit</i>

Table K-8. Fault Algorithm Parameters That Devices Shall Be Capable of Presenting and Modifying

Fault Algorithm	Fault Algorithm Parameter
<i>FAULT_OUT_OF_RANGE</i>	<i>pMinimumNormalValue</i> <i>pMaximumNormalValue</i>

Devices claiming support for this BIBB shall be capable of writing values within the full range as defined in Tables ~~K-3 and K-4~~ *K-4 and K-6*. Such devices need only be capable of presenting and modifying Event_Parameters for the standard algorithms that have high and low numerical limits, such as *OUT_OF_RANGE*, and *FLOATING_LIMIT*

Devices claiming conformance to this BIBB are not required to support presentation and modification of ~~objects and properties~~ *objects, properties, and parameters of event and fault algorithms* that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for AE-VM-A is interoperable with devices that support AE-N-B.

[Change **Clause K.2.17**, pp. 886]

K.2.17 BIBB - Alarm and Event Management-Advanced View and Modify-A (AE-AVM-A)

Device A configures ~~alarm-generating objects and Notification class objects~~ *standard event-initiating objects, Notification Class objects, and Notification Forwarder objects* in Device B. Device A shall support DS-RP-A, DS-WP-A, and DM-OCD-A. The A device shall be capable of using ReadProperty to retrieve and WriteProperty to modify any of the properties listed below *and all forms of standard properties that contain parameters, or references to parameters, of event and/or fault algorithms*. Device A may use alternate services where support for execution of the alternate service is supported by Device B. Device A shall be capable of creating/deleting ~~Event Enrollment and Notification Class~~ *Event Enrollment, Notification Class, and Notification Forwarder* objects in the B device.

BACnet Service	Initiate	Execute
CreateObject	x	
DeleteObject	x	
ReadProperty	x	
WriteProperty	x	

Devices claiming conformance to AE-AVM-A shall be capable of reading, presenting and writing alarming-related properties from the standard object types as listed in Table K-9.

Devices claiming conformance to AE-AVM-A are not required to perform any of these functions for event and fault algorithms ACCESS_EVENT, BUFFER_READY, CHANGE_OF_LIFE_SAFETY, and FAULT_LIFE_SAFETY.

In addition to being able to interoperate with algorithm parameters, devices claiming conformance to AE-AVM-A shall also be capable of reading, presenting, and writing all standard forms of all common properties related to event-state-detection and alarm-acknowledgement, as listed in Table K-9, and those related to event-distribution as listed in Table K-10, for all standard object types that include these properties, except for objects that only apply ACCESS_EVENT, CHANGE_OF_LIFE_SAFETY, or FAULT_LIFE_SAFETY event and fault algorithms.

Table K-9. Object Types for Which Presentation Is Required

Accumulator	Binary Output	Multi-state Output
Analog Input	Binary Value	Multi-state Value
Analog Output	Event Enrollment	Notification Class
Analog Value	Loop	Pulse Converter
Binary Input	Multi-state Input	

Table K-9. Common Event-State-Detection and Alarm-Acknowledgement Properties

<i>Event-State-Detection Properties</i>	<i>Alarm-Acknowledgement Properties</i>
<i>Event_State¹</i> <i>Event_Enable</i> <i>Event_Time_Stamps¹</i> <i>Notify_Type</i> <i>Event_Detection_Enable</i> <i>Event_Message_Texts¹</i> <i>Event_Message_Texts_Config</i> <i>Event_Algorithm_Inhibit_Ref</i> <i>Event_Algorithm_Inhibit</i> <i>Reliability_Evaluation_Inhibit</i>	<i>Acked_Transitions¹</i>

¹ AE-AVM-A devices need only be capable of presenting these properties; not modifying them.

Table K-10. Properties That AE-AVM-A Devices Shall Be Capable of Presenting and Modifying

All Object Types¹ (from Table K-X9)	Accumulator	Analog Objects
Acked_Transitions ² Event_State ² Event_Enable Notification_Class Event_Time_Stamps ² Time_Delay	Pulse_Rate High_Limit Low_Limit Limit_Monitoring_Interval	Limit_Enable High_Limit Low_Limit Deadband
Binary Input, Binary Value	Binary Output	Event Enrollment
Alarm_Value	Feedback_Value ²	Object_Property_Reference Event_Parameters Notify_Type
Loop	Multi-state Input, Multi-state Value	Multi-state Output
Error_Limit	Alarm_Values Fault_Values	Feedback_Value ¹
Notification Class	Pulse Converter	
Priority Ack_Required	Limit_Enable High_Limit	

Recipient_List	Low_Limit Deadband	
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¹For object types that include these properties.

²AE-AVM-A devices need only be capable of presenting these properties; not modifying them.

Table K-10. Event-Notification-Distribution Properties

<i>All Standard Object Types</i>	<i>Notification Class</i>	<i>Notification Forwarder</i>
<i>Notification_Class</i>	<i>Priority</i> <i>Ack_Required</i> <i>Recipient_List</i>	<i>Recipient_List</i> <i>Subscribed_Recipients</i> <i>Process_Identifier_Filter</i> <i>Port_Filter</i> <i>Local_Forwarding_Only</i>

Devices claiming support for this BIBB shall be capable of writing the full range of values as defined in Tables K-3 and K-4 and K-6. Such devices shall also be capable of writing any standard form of the Event_Parameters property to any Event_Enrollment object (excluding BUFFER_READY) and any standard form of BACnetDestination to any Notification_Class object's Recipient_List property.

Actions taken by Device A when retrieval of a value for display fails are a local matter.

Devices claiming conformance to this BIBB are not required to support presentation and modification of ~~objects and properties~~ objects, properties, and forms of event and fault algorithms parameters that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for AE-AVM-A is interoperable with devices that support AE-N-I-B or AE-N-E-B and is interoperable with devices that support AE-NF-B or AE-NF-I-B.

135-2012bc-4. Add Life Safety BIBBs and Device Profiles.

Rationale

The current standard does not comprehensively address the need of life safety applications regarding BIBBs and device profiles.

New life safety application specific BIBBs are added. They base on the existing or extended common BIBBs, exclude some requirements not relevant, and add specific requirements for life safety applications.

New life safety device profiles are added in new device profile families for life safety devices. The device profile family concept was introduced with addendum 135-2012a/.

[Change **Annex A**, p. 775]

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BACnet Standardized Device Profile (Annex L):

- BACnet Advanced Operator Workstation (B-AWS)**
- BACnet Operator Workstation (B-OWS)**
- BACnet Operator Display (B-OD)**
- BACnet Advanced Life Safety Workstation (B-ALSWS)***
- BACnet Life Safety Workstation (B-LSWS)***
- BACnet Life Safety Annunciator Panel (B-LSAP)***
- BACnet Building Controller (B-BC)**
- BACnet Advanced Application Controller (B-AAC)**
- BACnet Application Specific Controller (B-ASC)**
- BACnet Smart Sensor (B-SS)**
- BACnet Smart Actuator (B-SA)**
- BACnet Advanced Life Safety Controller (B-ALSC)***
- BACnet Life Safety Controller (B-LSC)***

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[Add new Clause **K.1.Y1**, p. 882]

K.1.Y1 BIBB - Data Sharing-Life Safety View-A (DS-LSV-A)

The A device retrieves values from a minimum set of objects and properties, including life safety objects, and presents them to the user. Devices claiming conformance to this BIBB shall support DS-RP-A. Device A shall be capable of using ReadProperty to retrieve any of the properties listed below. Device A may use alternate services where support for execution of the alternate service is supported by Device B.

BACnet Service	Initiate	Execute
ReadProperty	x	

Devices claiming conformance to this BIBB shall be capable of reading and displaying the object properties listed in Table K-1, excluding properties of Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects, and be capable of reading and displaying the object properties listed in Table K-Y1.

Table K-Y1. Life Safety Properties for Which Presentation Is Required

Life Safety Point	Life Safety Zone	Structured View
Object_Name	Object_Name	Object_Name
Present_Value	Present_Value	Node_Type
Tracking_Value	Tracking_Value	Node_Subtype
Status_Flags	Status_Flags	Subordinate_List
Mode	Mode	Subordinate_Annotations
Silenced	Silenced	
Operation_Expected	Operation_Expected	
Maintenance_Required	Maintenance_Required	
Direct Reading		
Unit		

The format of a presented property value is unrestricted; the intent of this BIBB is not to impose how, or in what form, a device displays data values. For example, enumerated values could be displayed as icons, references could be displayed using the referenced object's name, and numerical values could be displayed graphically.

Actions taken by Device A when retrieval of a value for display fails are a local matter.

Devices claiming conformance to this BIBB are not required to support presentation of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for this BIBB is interoperable with devices that support DS-RP-B and support one or more of the objects listed in Tables K-1 and K-Y1, except the objects excluded from this BIBB.

[Add new Clause **K.1.Y2**, p. 882]

K.1.Y2 BIBB - Data Sharing-Life Safety Advanced View-A (DS-LSAV-A)

The A device retrieves property values and presents them to the user. Device A shall be capable of using ReadProperty to retrieve any standard property of any standard object type listed in Table K-1, excluding Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects, including the properties listed in Table K-Y1, except for those properties listed in Table K-2 and any property defined by the standard as not readable via ReadProperty. Device A may use alternate services where support for execution of the alternate service is supported by Device B.

BACnet Service	Initiate	Execute
ReadProperty	x	

The information conveyed by the properties in Table K-2 can be otherwise determined and as such need not be read and presented by devices claiming conformance to this BIBB.

In order to ensure that products that claim support for this BIBB are capable of presenting accurate data values across the full range of values for each data type, devices claiming support for this BIBB shall be able to meet the requirements described in Table K-3.

For Character String property values, the A device shall be capable of presenting string values for specific BACnet properties with at least the number of characters, independent of their encoding, specified in Table K-4.

The above presentation requirements are not required to be applied in all circumstances, but rather shall be available for every property value in the system. This should allow a product to restrict its presentation under specific conditions yet still allow the user full access to any specific property value.

The A device shall be capable of reading and presenting all standard forms of the datatypes as defined per the A device's claimed Protocol_Revision.

Actions taken by Device A when retrieval of a value for display fails are a local matter.

Devices claiming conformance to this BIBB are not required to support presentation of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for this BIBB is interoperable with devices that support DS-RP-B and support one or more of the objects listed in Table K-Y1.

[Add new Clause **K.1.Y3**, p. 882]

K.1.Y3 BIBB - Data Sharing-Life Safety Modify-A (DS-LSM-A)

The A device writes properties of standard objects that are generally expected to be adjusted during normal operation of the life safety system. Devices claiming support for this BIBB are not expected to be capable of fully configuring life safety BACnet devices, although they are not inherently restricted from doing so.

BACnet Service	Initiate	Execute
WriteProperty	x	

Devices claiming conformance to this BIBB shall be capable of commanding and relinquishing standard commandable properties at priority 8 (other priorities may also be supported) of those objects listed in Table K-5 excluding Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects, and writing the properties listed in Table K-5 and Table K-Y2, excluding Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects.

Table K-Y2. Standard Properties That DS-LSM-A Devices Shall Be Capable of Writing

Life Safety Point	Life Safety Zone
Tracking_Value	Tracking_Value
Mode	Mode
Out_Of_Service	Out_Of_Service

Devices claiming support for this BIBB shall be capable of writing values within the full range as defined in Table K-6.

Devices claiming conformance to this BIBB are not required to support presentation and modification of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for this BIBB is interoperable with devices that support DS-WP-B and support one or more of the objects listed in Table K-Y1.

[Add new Clause **K.1.Y4**, p. 882]

K.1.Y4 BIBB - Data Sharing-Life Safety Advanced Modify-A (DS-LSAM-A)

The A device is able to use WriteProperty to modify any standard property of object types listed in Table K-5 and K-Y2, excluding Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects, where the property is not required to be read-only, or to which access is otherwise restricted by the standard (e.g., Log_Buffer). Device A shall be capable of commanding and relinquishing standard commandable properties at any priority. Device A may use alternate services where support for execution of the alternate service is supported by Device B.

BACnet Service	Initiate	Execute
WriteProperty	x	

Devices claiming support for this BIBB shall be capable of writing values within the full range as defined in Table K-6.

The A device shall be capable of writing all standard forms of the datatypes as defined per the A device's claimed Protocol_Revision.

Devices claiming conformance to this BIBB are not required to support presentation and modification of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for this BIBB is interoperable with devices that support DS-WP-B and support one or more of the objects listed in Table K-Y1.

[Add new Clause **K.2.Y0**, p. 890]

K.2.Y0 BIBB - Alarm and Event Management-Life Safety View Notifications-A (AE-LSVN-A)

Device A presents alarm and event state information for events which the A device is configured to receive, including life safety alarms. Devices claiming conformance to this BIBB shall support AE-N-A and AE-LS-A and shall support presentation of alarm states of event type CHANGE_OF_LIFE_SAFETY.

A device claiming support for AE-LSVN-A is interoperable with devices that support AE-N-I-B, AE-N-E-B or AE-LS-B.

[Add new Clause **K.2.Y1**, p.890]

K.2.Y1 BIBB - Alarm and Event Management-Life Safety Advanced View Notifications-A (AE-LSAVN-A)

Device A presents complete alarm and event notifications to the user, including life safety alarms. Devices claiming conformance to this BIBB shall support AE-AVN-A and AE-LS-A and shall support presentation of complete alarm and event notifications of event type CHANGE_OF_LIFE_SAFETY.

A device claiming support for AE-LSAVN-A is interoperable with devices that support AE-N-I-B, AE-N-E-B or AE-LS-B.

[Add new Clause **K.2.Y2**, p. 890]

[The below changes are shown on the base of section 3 of this addendum]

K.2.Y2 BIBB - Alarm and Event Management-Life Safety View and Modify-A (AE-LSVM-A)

Device A displays and modifies limits and other event parameters in event-initiating objects in Device B, including life safety objects.

Device A shall support DS-RP-A and DS-WP-A. The A device shall be capable of using ReadProperty to retrieve and WriteProperty to modify any of the event and fault algorithm parameters listed below. Such parameters may be present in individual properties, in event parameter properties, or in fault parameter properties. See the respective property specifications. Device A may use alternate services where support for execution of the alternate service is supported by Device B.

BACnet Service	Initiate	Execute
ReadProperty	x	

WriteProperty	x	
---------------	---	--

Devices claiming conformance to AE-LSVM-A shall be capable of reading, presenting, and writing standard properties that are configuration parameters or references to configuration parameters of standard and life safety event and/or fault algorithms, as listed in Tables K-7, K-8, K-Y3 and K-Y4.

Table K-Y3. Additional Event Algorithm Parameters That Life Safety Devices Shall Be Capable of Presenting and Modifying

Event Algorithm	Event Algorithm Parameter
CHANGE_OF_LIFE_SAFETY	pAlarmValues pLifeSafetyAlarmValues

Table K-Y4. Additional Fault Algorithm Parameters That Life Safety Devices Shall Be Capable of Presenting and Modifying

Fault Algorithm	Fault Algorithm Parameter
FAULT_LIFE_SAFETY	pFaultValues

Devices claiming support for this BIBB shall be capable of writing the full range of values as defined in Table K-6.

Actions taken by Device A when retrieval of a value for display fails are a local matter.

Devices claiming conformance to this BIBB are not required to support presentation and modification of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for AE-LSVM-A is interoperable with devices that support AE-N-I-B, AE-N-E-B, or AE-LS-B.

[Add new Clause **K.2.Y3**, p. 890]

[The below changes are shown on the base of section 3 of this addendum]

K.2.Y3 BIBB - Alarm and Event Management-Life Safety Advanced View and Modify-A (AE-LSAVM-A)

Device A configures standard event-initiating objects, Notification Class objects, and Notification Forwarder objects in Device B. Device A shall support DS-RP-A, DS-WP-A, and DM-OCD-A. The A device shall be capable of using ReadProperty to retrieve and WriteProperty to modify any of the properties listed below and all forms of standard properties that contain parameters, or references to parameters, of event and/or fault algorithms. Device A may use alternate services where support for execution of the alternate service is supported by Device B. Device A shall be capable of creating/deleting Event Enrollment, Notification Class, and Notification Forwarder objects in the B device.

BACnet Service	Initiate	Execute
CreateObject	x	
DeleteObject	x	
ReadProperty	x	
WriteProperty	x	

Devices claiming conformance to AE-LSAVM-A are required to read, present, and modify any properties or particular forms of properties that contain parameters, or references to parameters, related to the event and fault algorithms as required by AE-AVM-A, including CHANGE_OF_LIFE_SAFETY and FAULT_LIFE_SAFETY algorithm parameters.

Devices claiming conformance to AE-LSAVM-A shall be capable of reading, presenting, and writing all standard forms of all common properties related to event-state-detection and alarm-acknowledgement, as listed in Table K-9.

Devices claiming conformance to AE-LSAVM-A shall be capable of reading, presenting, and writing all standard forms of properties that are related to event-notification-distribution, listed in Table K-10.

Devices claiming support for this BIBB shall be capable of writing the full range of values as defined in Table K-6.

Actions taken by Device A when retrieval of a value for display fails are a local matter.

Devices claiming conformance to this BIBB are not required to support presentation and modification of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for AE-LSAVM-A is interoperable with devices that support AE-N-I-B, AE-N-E-B, or AE-LS-B.

[Change ANNEX L, p.905]

[Note: This shows changes to ANNEX L, as if the changes of addendum 135-2012a1 have been incorporated]

ANNEX L - DESCRIPTIONS AND PROFILES OF STANDARDIZED BACnet DEVICES (NORMATIVE)

(This annex is part of this Standard and is required of its use.)

This annex provides descriptions of "standardized" types of BACnet devices. Any device that implements all the required BACnet capabilities for a particular device type and interoperability area may claim to be a device of that particular type. Devices may also provide additional capabilities and shall indicate these capabilities in their PICS.

BACnet device profiles are categorized into families:

- Operator Interfaces. This family is composed of B-AWS, B-OWS, and B-OD.
- *Life Safety Operator Interfaces. This family is composed of B-ALSWs, B-LSWS, and B-LSAP.*
- Controllers. This family is composed of B-BC, B-AAC, B-ASC, B-SA, and B-SS.
- *Life Safety Controllers. This family is composed of B-ALSC, and B-LSC.*
- Miscellaneous. This family is composed of B-RTR, B-GW, and B-BBMD.

Devices may claim to be multiple device types. For example, a device may claim to be both a B-BC and the B-RTR. Devices that claim multiple device profiles shall only combine capabilities from different device families, with the exception that multiple profiles may be selected from the Miscellaneous family. For example, a device may claim the B-BC, B-RTR, and B-BBMD profiles, but a device may not claim both the B-BC and B-SS profiles.

The B-GENERAL device profile is not included in any of the profile families and is never claimed in conjunction with any other device profile, except those from the Miscellaneous family.

[Add new **Clause L.Y1**, before L.7, p.909]

L.Y1 BACnet Advanced Life Safety Workstation (B-ALSWs)

The B-ALSWs is an advanced life safety operator workstation that provides full support of the life-safety features of BACnet.

The B-ALSWs profile is targeted at a life safety operator or technician with a higher level of technical ability. It provides support for limited configuration actions and ongoing commissioning activities.

The B-ALSWs profile enables the specification of the following:

Data Sharing

- Presentation of data (i.e., reports and graphics)
- Presentation of life-safety data
- Ability to monitor the value of BACnet objects relevant for life safety, including all required and optional properties
- Ability to modify setpoints and parameters

Alarm and Event Management

- Operator notification and presentation of event information, including life safety events

- Alarm acknowledgment by operators
- Life-safety silence and reset operations by operators
- Alarm summarization
- Adjustment of alarm limits and conditions, including life safety alarm parameters
- Adjustment of alarm routing
- Ability to create, delete and configure Event Enrollment, Notification Class and Notification Forwarder objects
- Presentation and modification of Event Logs

Scheduling

- Modification of calendars and schedules
- Display of the start and stop times (schedule) of scheduled devices
- Display of calendars
- Creation and deletion of calendars and schedules

Trending

- Modification of the parameters of a trend log
- Display of trend data
- Creation of new Trend Log objects

Device and Network Management

- Ability to find other BACnet devices
- Ability to find all objects in BACnet devices
- Ability to silence a device on the network that is transmitting erroneous data
- Ability to synchronize the time in devices across the BACnet internetwork at the request of the operator
- Ability to cause a remote device to reinitialize itself
- Ability to backup and restore the configuration of other devices
- Ability to command half-routers to establish and terminate connections

[Add new **Clause L.Y2**, before L.7, p. 909]

L.Y2 BACnet Life Safety Workstation (B-LSWS)

The B-LSWS is a life safety operator interface with limited capabilities relative to a B-ALSWS. The B-LSWS is used for monitoring and basic control of a BACnet life safety system, but differs from a B-ALSWS in that it does not support configuration activities, nor does it provide advanced troubleshooting capabilities.

The B-LSWS profile is targeted at the daily life safety operator who needs the ability to monitor basic system status and to perform simple modifications to the operation of the system.

The B-LSWS profile enables the specification of the following:

Data Sharing

- Presentation of data (i.e., reports and graphics)
- Presentation of life-safety data
- Ability to monitor the value of BACnet objects relevant for life safety, including all required and optional properties
- Ability to modify setpoints and parameters

Alarm and Event Management

- Operator notification and presentation of event information, including life safety events
- Alarm acknowledgment by operators
- Life safety silence and reset operations by operators
- Alarm summarization
- Adjustment of alarm limits and conditions, including life safety alarm parameters
- Presentation of Event Logs

Scheduling

- Modification of calendars and schedules
- Display of the start and stop times (schedule) of scheduled devices
- Display of calendars

Trending

- Display and archive of trend data

Device and Network Management

- Ability to find other BACnet devices
- Ability to find all objects in BACnet devices
- Ability to synchronize the time in devices across the BACnet internetwork at the request of the operator
- Ability to cause a remote device to reinitialize itself
- Ability to backup and restore the configuration of other devices
- Ability to command half-routers to establish and terminate connections

[Add new **Clause L.Y3**, before L.7, p.909]

L.Y3 BACnet Life Safety Annunciator Panel (B-LSAP)

The B-LSAP is a life safety operator interface for the indication of life safety events and status. The B-LSAP is used for monitoring and event handling of a BACnet life safety system.

The B-LSAP profile is targeted at the daily life safety operator who needs the ability to monitor basic system status and to perform event handling of life safety events.

The B-LSAP profile enables the specification of the following:

Data Sharing

- Presentation of life safety object data

Alarm and Event Management

- Operator notification and presentation of event information, including life safety events
- Alarm acknowledgment by operators
- Life safety silence and reset operations by operators

Scheduling

- No minimum requirements

Trending

- No minimum requirements

Device and Network Management

- Ability to find other BACnet devices

[Add new **Clause L.Y4**, before L.7, p. 909]

L.Y4 BACnet Advanced Life Safety Controller (B-ALSC)

A B-ALSC device performs life safety alarm detection and control. It supports life safety objects and limited modification of its alarm and event reporting, including event distribution by another device. Also, the device supports scheduling of internal values and event logging.

Data Sharing

- Ability to provide the values of any of its BACnet objects
- Ability to allow modification of some or all of its BACnet objects by another device for control and configuration purposes

Alarm and Event Management

- Generation of alarm / event notifications including life safety alarms and the ability to direct them to recipients
- Execution of all forms of life safety operations
- Maintain a list of unacknowledged alarms / events
- Notifying other recipients that the acknowledgment has been received
- Adjustment of alarm / event parameters including notification distribution
- Logging of event notifications of the local device in an Event Log object

Scheduling

- Ability to schedule actions in the local device for binary, analog, and enumerated values, based on date and time

Trending

- No requirements

Device and Network Management

- Ability to respond to queries about its status
- Ability to respond to requests for information about any of its objects
- Ability to respond to communication control messages
- Ability to synchronize its internal clock upon request
- Ability to perform re-initialization upon request

[Add new **Clause L.Y5**, before L.7, p. 909]

L.Y5 BACnet Life Safety Controller (B-LSC)

A B-LSC device performs life safety alarm detection and control. It supports life safety objects. The B-LSC device is not required to support modification of its alarm and event reporting by another device.

Data Sharing

- Ability to provide the values of any of its BACnet objects
- Ability to allow modification of a limited set of its properties by another device for control purposes

Alarm and Event Management

- Generation of alarm / event notifications, including life safety alarms and the ability to direct them to recipients
- Execution of all forms of life safety operations
- Maintain a list of unacknowledged alarms / events
- Notifying other recipients that the acknowledgment has been received

Scheduling

- No requirement

Trending

- No requirement

Device and Network Management

- Ability to respond to queries about its status
- Ability to respond to requests for information about any of its objects
- Ability to respond to communication control messages

[Add the following columns to the profile table in **Clause L.7**, p. 910]

Data Sharing

B-ALSWS	B-LSWS	B-LSAP
DS-RP-A,B	DS-RP-A,B	DS-RP-A,B
DS-RPM-A	DS-RPM-A	
DS-WP-A	DS-WP-A	DS-WP-A
DS-WPM-A	DS-WPM-A	
DS-LSAV-A	DS-LSV-A	DS-LSV-A
DS-LSAM-A	DS-LSM-A	

Alarm & Event Management

B-ALSWS	B-LSWS	B-LSAP
AE-N-A	AE-N-A	AE-N-A
AE-LS-A	AE-LS-A	AE-LS-A
AE-ACK-A	AE-ACK-A	AE-ACK-A
AE-AS-A	AE-AS-A	
AE-LSAVM-A	AE-LSVM-A	
AE-LSAVN-A	AE-LSAVN-A	AE-LSVN-A
AE-ELVM-A ²	AE-ELV-A	

Scheduling

B-ALSWS	B-LSWS	B-LSAP
SCHED-AVM-A	SCHED-VM-A	

Trending

B-ALSWS	B-LSWS	B-LSAP
T-AVM-A	T-V-A	

Device & Network Management

B-ALSWS	B-LSWS	B-LSAP
DM-DDB-A,B	DM-DDB-A,B	DM-DDB-A,B
DM-ANM-A		
DM-ADM-A		
DM-DOB-B	DM-DOB-B	DM-DOB-B
DM-DCC-A	DM-DCC-A	
DM-MTS-A	DM-MTS-A	
DM-OCD-A		
DM-RD-A	DM-RD-A	
DM-BR-A	DM-BR-A	
NM-CE-A	NM-CE-A	

¹ ...

² Not required for devices claiming conformance to a Protocol_Revision less than 7

[Add the following columns to the profile table in **Clause L.7**, p. 910]

Data Sharing

B-ALSC	B-LSC
DS-RP-B	DS-RP-B
DS-RPM-B	
DS-WP-B	DS-WP-B
DS-WPM-B	
DS-COV-B	DS-COV-B

Alarm & Event Management

B-ALSC	B-LSC
AE-LS-B	AE-LS-B
AE-ACK-B	AE-ACK-B
AE-INFO-B	AE-INFO-B
AE-EL-I-B ²	

Scheduling

B-ALSC	B-LSC
SHED-I-B	-

Trending

B-ALSC	B-LSC
-	-

Device & Network Management

B-ALSC	B-LSC
DM-DDB-A,B	DM-DDB-A,B
DM-DOB-B	DM-DOB-B
DM-DCC-B	DM-DCC-B
DM-TS-B or DM-UTC-B	
DM-RD-B	

¹ ...

² Not required for devices claiming conformance to a Protocol_Revision less than 7

135-2012bc-5. Add Physical Access Control BIBBs and Device Profiles.

Rationale

Addendum 135-2004f and addendum 135-2008j added new object types and a new event type to the standard for the representation of physical access control systems (PACS).

The standard is extended in its interoperability specifications (PICS, BIBBs, and Device Profiles) to cover the functionality of PACS.

New access control application specific BIBBs are added. They base on the existing or extended common BIBBs, exclude some requirements not relevant, and add specific requirements for access control applications.

New access control device profiles are added in new device profile families for access control devices, and some in the Miscellaneous family. The device profile family concept was introduced with addendum 135-2012a.

[Change Annex A, p.775]

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BACnet Standardized Device Profile (Annex L):

- BACnet Advanced Operator Workstation (B-AWS)
- BACnet Operator Workstation (B-OWS)
- BACnet Operator Display (B-OD)
- BACnet Advanced Access Control Workstation (B-AACWS)*
- BACnet Access Control Workstation (B-ACWS)*
- BACnet Access Control Security Display (B-ACSD)*
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)
- BACnet Advanced Access Control Controller (B-AACC)*
- BACnet Access Control Controller (B-ACC)*
- BACnet Access Control Door Controller (B-ACDC)*
- BACnet Access Control Credential Reader (B-ACCR)*

...

[Add new Clause K.1.Z1, p. 882]

K.1.Z1 BIBB - Data Sharing-Access Control View-A (DS-ACV-A)

The A device retrieves values from a minimum set of objects and properties, including access control objects, and presents them to the user. Devices claiming conformance to this BIBB shall support DS-RP-A. Device A shall be capable of using ReadProperty to retrieve any of the properties listed below. Device A may use alternate services where support for execution of the alternate service is supported by Device B.

BACnet Service	Initiate	Execute
ReadProperty	x	

Devices claiming conformance to this BIBB shall be capable of reading and displaying the object properties listed in Table K-1, excluding properties of Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects, and be capable of reading and displaying the object properties listed in Table K-Z1.

Table K-Z1. Properties for Which Presentation Is Required

Access Door	Access Point	Access Zone	Access User
Object_Name Present_Value Status_Flags Secured_Status Door_Alarm_State Out_Of_Service Maintenance_Required Masked_Alarm_Values	Object_Name Status_Flags Authentication_Status Access_Event Access_Event_Time Out_Of_Service Active_Authentication_Policy Authorization_Mode Failed_Attempts Threat_Level	Object_Name Global_Identifier Occupancy_State Status_Flags Occupancy_Count Out_Of_Service Occupancy_Count_Upper_Limit Occupancy_Count_Lower_Limit Credentials_In_Zone Passback_Mode Occupancy_Count_Enable Adjust_Value	Object_Name Global_Identifier Status_Flags User_Name User_Type
Access Rights	Access Credential	Credential Data Input	
Object_Name Global_Identifier Status_Flags Enable	Object_Name Global_Identifier Status_Flags Credential_Status Reason_For_Disable Credential_Disable Trace_Flag	Object_Name Present_Value Status_Flags Update_Time Out_Of_Service	

The format of a presented property value is unrestricted; the intent of this BIBB is not to impose how, or in what form, a device displays data values. For example, enumerated values could be displayed as icons, references could be displayed using the referenced object's name, and numerical values could be displayed graphically.

Actions taken by Device A when retrieval of a value for display fails are a local matter.

Devices claiming conformance to this BIBB are not required to support presentation of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for this BIBB is interoperable with devices that support DS-RP-B and support one or more of the objects listed in Table K-1 and K-Z1, except the objects excluded from this BIBB.

[Add new Clause **K.1.Z2**, p. 882]

K.1.Z2 BIBB - Data Sharing-Access Control Advanced View-A (DS-ACAV-A)

The A device retrieves property values and presents them to the user. Device A shall be capable of using ReadProperty to retrieve any standard property of any standard object types listed in Table K-1, excluding Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects, including the properties listed in Table K-Z1, except for those properties listed in Table K-2 and any property defined by the standard as not readable via ReadProperty. Device A may use alternate services where support for execution of the alternate service is supported by Device B.

BACnet Service	Initiate	Execute
ReadProperty	x	

The information conveyed by the properties in Table K-2 can be otherwise determined and as such need not be read and presented by devices claiming conformance to this BIBB.

In order to ensure that products that claim support for this BIBB are capable of presenting accurate data values across the full range of values for each data type, devices claiming support for this BIBB shall be able to meet the requirements described in Table K-3.

For Character String property values, the A device shall be capable of presenting string values for specific BACnet properties with at least the number of characters, independent of their encoding, specified in Table K-4.

The above presentation requirements are not required to be applied in all circumstances, but rather shall be available for every property value in the system. This should allow a product to restrict its presentation under specific conditions yet still allow the user full access to any specific property value.

The A device shall be capable of reading and presenting all standard forms of the datatypes as defined per the A device's claimed Protocol_Revision.

Actions taken by Device A when retrieval of a value for display fails are a local matter.

Devices claiming conformance to this BIBB are not required to support presentation of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for this BIBB is interoperable with devices that support DS-RP-B and support one or more of the objects listed in Table K-Z1.

[Add new Clause **K.1.Z3**, p. 882]

K.1.Z3 BIBB - Data Sharing-Access Control Modify-A (DS-ACM-A)

The A device writes properties of standard objects that are generally expected to be adjusted during normal operation of the physical access control system. Devices claiming support for this BIBB are not expected to be capable of fully configuring access control BACnet devices, although they are not inherently restricted from doing so.

BACnet Service	Initiate	Execute
WriteProperty	x	

Devices claiming conformance to this BIBB shall be capable of commanding and relinquishing standard commandable properties at priority 8 (other priorities may also be supported) of those objects listed in Table K-5 excluding Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects, and writing the properties listed in Table K-5 and Table K-Z2, excluding Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects.

Table K-Z2. Standard Properties That DS-ACM-A Devices Shall Be Capable of Writing

Access Door	Access Point	Access Zone
Present_Value Out_Of_Service Maintenance_Required Masked_Alarm_Values	Out_Of_Service Active_Authentication_Policy Authorization_Mode Failed_Attempts Threat_Level	Occupancy_Count Out_Of_Service Occupancy_Count_Enable Adjust_Value Credentials_In_Zone Passback_Mode

Access Credential	Credential Data Input	
Credential_Disable	Present_Value	
Trace_Flag	Out_Of_Service	

Devices claiming support for this BIBB shall be capable of writing values within the full range as defined in Table K-6.

Devices claiming conformance to this BIBB are not required to support presentation and modification of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for this BIBB is interoperable with devices that support DS-WP-B and support one or more of the objects listed in Table K-Z1.

[Add new Clause **K.1.Z4**, p.882]

K.1.Z4 BIBB - Data Sharing-Access Control Advanced Modify-A (DS-ACAM-A)

The A device is able to use WriteProperty to modify any standard property of object types listed in Table K-5 and K-Z2, excluding Averaging, Loop, Accumulator, Pulse Converter, Channel, Lighting Output, and Binary Lighting Output objects, where the property is not required to be read-only, or to which access is otherwise restricted by the standard (e.g. Log_Buffer). Device A shall be capable of commanding and relinquishing standard commandable properties at any priority. Device A may use alternate services where support for execution of the alternate service is supported by Device B.

BACnet Service	Initiate	Execute
WriteProperty	x	

Devices claiming support for this BIBB shall be capable of writing values within the full range as defined in Table K-6.

The A device shall be capable of writing all standard forms of the datatypes as defined per the A device's claimed Protocol_Revision.

Devices claiming conformance to this BIBB are not required to support presentation and modification of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for this BIBB is interoperable with devices that support DS-WP-B and support one or more of the objects listed in Table K-Z1.

[Add new Clause **K.1.Z5**, p. 882]

K.1.Z5 BIBB – Data Sharing-Access Control User Configuration-A (DS-ACUC-A)

The A device is able to configure device B for access control. Device A shall support DS-RP-A, DS-WP-A, and DM-OCD-A for the standard access control object types Access Rights, Access User, and Access Credential, related to user configuration. The A device shall be capable of using ReadProperty to retrieve any standard property from those objects. The A device shall be capable of using WriteProperty to modify any standard property of those objects, except those properties whose write access is restricted by the standard. Device A may use alternate services to read or modify properties in Device B where support for execution of the alternate service is supported by Device B. Device A shall be capable of creating/deleting user configuration access control objects in Device B that supports creation/deletion of those object types.

BACnet Service	Initiate	Execute
CreateObject	x	
DeleteObject	x	
ReadProperty	x	
WriteProperty	x	

[Add new Clause **K.1.Z6**, p. 882]

K.1.Z6 BIBB – Data Sharing-Access Control User Configuration-B (DS-ACUC-B)

The B device responds to requests to read or write standard properties of the supported user configuration access control object types Access Rights, Access User, and Access Credential.

BACnet Service	Initiate	Execute
ReadProperty		x
WriteProperty		x

[Add new Clause **K.1.Z7**, p. 882]

K.1.Z7 BIBB – Data Sharing-Access Control Site Configuration-A (DS-ACSC-A)

The A device is able to configure device B for access control. Device A shall support DS-RP-A, DS-WP-A, and DM-OCD-A for the standard access control object types Access Point, Access Zone, Access Door, and Credential Data Input, related to site configuration. The A device shall be capable of using ReadProperty to retrieve any supported standard property from those objects. The A device shall be capable of using WriteProperty to modify any standard property of those objects, except those properties whose write access is restricted by the standard. Device A may use alternate services to read or modify properties in Device B where support for execution of the alternate service is supported by Device B. Device A shall be capable of creating/deleting site configuration access control objects in a B device that supports creation/deletion of those object types.

BACnet Service	Initiate	Execute
CreateObject	x	
DeleteObject	x	
ReadProperty	x	
WriteProperty	x	

[Add new Clause **K.1.Z8**, p.882]

K.1.Z8 BIBB – Data Sharing-Access Control Site Configuration-B (DS-ACSC-B)

The B device responds to requests to read or write standard properties of the supported site configuration access control object types Access Point, Access Zone, Access Door, and Credential Data Input.

BACnet Service	Initiate	Execute
ReadProperty		x
WriteProperty		x

[Add new Clause **K.1.Z9**, p. 882]

K.1.Z9 BIBB - Data Sharing-Access Control Access Door-A (DS-ACAD-A)

The A device is able to configure and command Access Door objects. Devices claiming conformance to DS-ACAD-A shall support reading and writing all forms of all standard properties of Access Door objects. Support of DS-RP-A and DS-WP-A is required.

[Add new Clause **K.1.Z10**, p. 882]

K.1.Z10 BIBB - Data Sharing-Access Control Access Door-B (DS-ACAD-B)

The B device provides door control functionality for physical access control. Devices claiming conformance to DS-ACAD-B shall support at least one Access Door object. Support of DS-RP-B and DS-WP-B is required.

[Add new Clause **K.1.Z11**, p. 882]

K.1.Z11 BIBB - Data Sharing-Access Control Credential Data Input-A (DS-ACCDI-A)

The A device is able to configure and command Credential Data Input objects. Devices claiming conformance to DS-ACCDI-A shall support reading and writing all forms of all standard properties of Credential Data Input objects. Devices claiming conformance to DS-ACCDI-A shall be able to subscribe for COV notifications in Credential Data Input objects and receive all forms of BACnetAuthenticationFactor values conveyed in COV notifications. Support of DS-RP-A, DS-WP-A, and DS-COV-A is required.

[Add new Clause **K.1.Z12**, p. 882]

K.1.Z12 BIBB - Data Sharing-Access Control Credential Data Input-B (DS-ACCDI-B)

The B device provides credential data input functionality for physical access control. Devices claiming conformance to DS-ACAD-B shall support at least one Credential Data Input object that supports COV reporting of its Present_Value property. Support of DS-RP-B, DS-WP-B, and DS-COV-B is required.

[Change Clause **K.2.1**, p. 882]

K.2.1 BIBB - Alarm and Event *Management*-Notification-A (AE-N-A)

The A device processes notifications about alarms and other events.

BACnet Service	Initiate	Execute
ConfirmedEventNotification		x
UnconfirmedEventNotification		x

Devices claiming conformance to AE-N-A shall be able to process notifications from any standard or proprietary event-generating object of any standard or proprietary event type (excluding the ~~CHANGE_OF_LIFE_SAFETY~~ *CHANGE_OF_LIFE_SAFETY*, *ACCESS_EVENT*, and/or *BUFFER_READY* event types).

[Change Clause **K.2.2**, p. 883]

K.2.2 BIBB - Alarm and Event *Management*-Notification Internal-B (AE-N-I-B)

Device B generates notifications about alarms and other events.

BACnet Service	Initiate	Execute
ConfirmedEventNotification	x	
UnconfirmedEventNotification	x	

Devices claiming conformance to AE-N-I-B shall also support either Intrinsic or Algorithmic reporting. Any device that supports the generation of event notifications that require operator acknowledgment shall support AE-ACK-B and AE-INFO-B. Any device that supports the generation of TO-FAULT or TO-OFFNORMAL event notifications shall support AE-INFO-B.

Devices that only support generation of ~~CHANGE_OF_LIFE_SAFETY~~ *CHANGE_OF_LIFE_SAFETY*, *ACCESS_EVENT*, and/or *BUFFER_READY* notifications shall not claim support for this BIBB.

[Change Clause **K.2.3**, p. 883]

K.2.3 BIBB - Alarm and Event Management-Notification External-B (AE-N-E-B)

Device B contains an Event Enrollment object that monitors values in another device. Device B is capable of generating event notifications for alarm conditions based on value(s) in another device. Devices conforming to this BIBB shall conform to DS-RP-A, AE-N-I-B, and shall support at least 1 Event Enrollment object with an Object_Property_Reference property that supports references to properties in objects contained in other devices. Any device that supports the generation of event notifications that require operator acknowledgment shall support AE-ACK-B and AE-INFO-B. Any device that supports the generation of TO-FAULT or TO-OFFNORMAL event notifications shall support AE-INFO-B.

Devices that only support Event Enrollment objects that only support generation of ~~CHANGE_OF_LIFE_SAFETY~~ *CHANGE_OF_LIFE_SAFETY*, *ACCESS_EVENT*, and/or *BUFFER_READY* notifications shall not claim support for this BIBB.

[Add new Clause **K.2.Z1**, p. 890]

K.2.Z1 BIBB - Alarm and Event Management-Access Control-A (AE-AC-A)

Access control device A is able to process and acknowledge *ACCESS_EVENT* event notifications.

BACnet Service	Initiate	Execute
ConfirmedEventNotification		x
UnconfirmedEventNotification		x
AcknowledgeAlarm	x	

[Add new Clause **K.2.Z2**, p.890]

K.2.Z2 BIBB - Alarm and Event Management-Access Control-B (AE-AC-B)

Access control device B is able to generate *ACCESS_EVENT* event notifications.

BACnet Service	Initiate	Execute
ConfirmedEventNotification	x	
UnconfirmedEventNotification	x	

Devices claiming conformance to AE-AC-B shall support at least one instance of an Access Point object and shall be able to generate ConfirmedEventNotification and UnconfirmedEventNotification service requests describing ACCESS_EVENT event transitions.

Any device that supports the generation of event notifications that require operator acknowledgment shall support AE-ACK-B and AE-INFO-B. Any device that supports the generation of TO-FAULT or TO-OFFNORMAL event notifications shall support AE-INFO-B.

[Add new Clause **K.2.Z3**, p. 890]

K.2.Z3 BIBB - Alarm and Event Management-Access Control Advanced View Notifications-A (AE-ACAVN-A)

Device A presents complete alarm and event notifications to the user, including access control events. Devices claiming conformance to this BIBB shall support AE-AVN-A and AE-AC-A and shall support presentation of complete alarm and event notifications of event type ACCESS_EVENT.

A device claiming support for AE-ACAVN-A is interoperable with devices that support AE-N-I-B, AE-N-E-B, or AE-AC-B.

[Note: The below changes are shown on the base of section 3 of this addendum]

[Add new Clause **K.2.Z4**, p. 890]

K.2.Z4 BIBB - Alarm and Event Management-Access Control View and Modify-A (AE-ACVM-A)

Device A displays and modifies limits and other event parameters in event-initiating objects in Device B, including access control objects.

Device A shall support DS-RP-A and DS-WP-A. The A device shall be capable of using ReadProperty to retrieve and WriteProperty to modify any of the event and fault algorithm parameters listed below. Such parameters may be present in individual properties, in event parameter properties, or in fault parameter properties. See the respective property specifications. Device A may use alternate services where support for execution of the alternate service is supported by Device B.

BACnet Service	Initiate	Execute
ReadProperty	x	
WriteProperty	x	

Devices claiming conformance to AE-ACVM-A shall be capable of reading, presenting, and writing standard properties that are configuration parameters or references to configuration parameters of standard and access control event and/or fault algorithms, as listed in Tables K-7, K-8, K-Z3, and K-Z4.

Table K-Z3. Additional Event Algorithm Parameters That Devices Shall Be Capable of Presenting and Modifying

Event Algorithm	Event Algorithm Parameter
ACCESS_EVENT	pAccessEvents pAccessEventTime

Table K-Z4. Additional Fault Algorithm Parameters That Devices Shall Be Capable of Presenting and Modifying

Fault Algorithm	Fault Algorithm Parameter
<none at this time>	

Devices claiming support for this BIBB shall be capable of writing the full range of values as defined in Table K-6.

Actions taken by Device A when retrieval of a value for display fails are a local matter.

Devices claiming conformance to this BIBB are not required to support presentation and modification of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for AE-ACVM-A is interoperable with devices that support AE-N-I-B, AE-N-E-B, or AE-AC-B.

[Add new Clause **K.2.Z5**, p. 890]

K.2.Z5 BIBB - Alarm and Event Management-Access Control Advanced View and Modify-A (AE-ACAVM-A)

Device A configures standard event-initiating objects, Notification Class objects, and Notification Forwarder objects in Device B. Device A shall support DS-RP-A, DS-WP-A, and DM-OCD-A. The A device shall be capable of using ReadProperty to retrieve and WriteProperty to modify any of the properties listed below and all forms of standard properties that contain parameters, or references to parameters, of event and/or fault algorithms. Device A may use alternate services where support for execution of the alternate service is supported by Device B. Device A shall be capable of creating/deleting Event Enrollment, Notification Class, and Notification Forwarder objects in the B device.

BACnet Service	Initiate	Execute
CreateObject	x	
DeleteObject	x	
ReadProperty	x	
WriteProperty	x	

Devices claiming conformance to AE-ACAVM-A are required to read, present, and modify any properties or particular forms of properties that contain parameters, or references to parameters, related to the event and fault algorithms as required by AE-AVM-A, including ACCESS_EVENT algorithm parameters.

Devices claiming conformance to AE-ACAVM-A shall be capable of reading, presenting, and writing all standard forms of all common properties related to event-state-detection and alarm-acknowledgement, as listed in Table K-9.

Devices claiming conformance to AE-ACAVM-A shall be capable of reading, presenting, and writing all standard forms of properties that are related to event-notification-distribution, listed in Table K-10.

Devices claiming support for this BIBB shall be capable of writing the full range of values as defined in Table K-6.

Actions taken by Device A when retrieval of a value for display fails are a local matter.

Devices claiming conformance to this BIBB are not required to support presentation and modification of objects and properties that are introduced in a Protocol_Revision newer than that claimed by the A device.

A device claiming support for AE-ACAVM-A is interoperable with devices that support AE-N-I-B, AE-N-E-B, or AE-AC-B.

[Change Clause **K.3.2**, p. 890]

K.3.2 BIBB - Scheduling-Internal-B (SCHED-I-B)

The B device provides date and time scheduling of the values of specific properties of specific objects within the device. In addition to supporting the DS-RP-B and DS-WP-B BIBBs, each device claiming conformance to SCHED-I-B shall also be capable of possessing at least one Calendar and one Schedule object. Devices claiming conformance to SCHED-I-B shall also support either DM-TS-B or DM-UTC-B.

The Schedule object shall support a writable `Weekly_Schedule` property and at least 6 entries per day. The Schedule object shall support a non-empty `Exception_Schedule` property. *If the `List_Of_Object_Property_Reference` is writable, the `Priority_For_Writing` property in the Schedule object shall also be writable.*

[Change ANNEX L, p. 905]

[Note: This shows changes to ANNEX L, as if the changes of addendum 135-2012*al* had been incorporated]

ANNEX L - DESCRIPTIONS AND PROFILES OF STANDARDIZED BACnet DEVICES (NORMATIVE)

(This annex is part of this Standard and is required of its use.)

This annex provides descriptions of "standardized" types of BACnet devices. Any device that implements all the required BACnet capabilities for a particular device type and interoperability area may claim to be a device of that particular type. Devices may also provide additional capabilities and shall indicate these capabilities in their PICS.

BACnet device profiles are categorized into families:

- Operator Interfaces. This family is composed of B-AWS, B-OWS, and B-OD.
- *Access Control Operator Interfaces. This family is composed of B-AACWS, B-ACWS, and B-ACSD.*
- Controllers. This family is composed of B-BC, B-AAC, B-ASC, B-SA, and B-SS.
- *Access Control Controllers. This family is composed of B-AACC and B-ACC.*
- Miscellaneous. This family is composed of B-RTR, B-GW, ~~and~~ B-BBMD, B-ACDC, and B-ACCR.

Devices may claim to be multiple device types. For example, a device may claim to be both a B-BC and the B-RTR. Devices that claim multiple device profiles shall only combine capabilities from different device families, with the exception that multiple profiles may be selected from the Miscellaneous family. For example, a device may claim the B-BC, B-RTR, and B-BBMD profiles, but a device may not claim both the B-BC and B-SS profiles.

The B-GENERAL device profile is not included in any of the profile families and is never claimed in conjunction with any other device profile, except those from the Miscellaneous family.

[Add new **Clause L.Z1**, before L.7, p. 909]

L.Z1 BACnet Advanced Access Control Workstation (B-AACWS)

The B-AACWS workstation is an advanced operator workstation for physical access control systems that is able to enroll and manage access control users and their credentials and rights. It is able to create, delete, and configure access points, access zones, access doors, and credential data inputs. In addition, it provides all functions required for a security operator who operates the physical access control system.

The B-AACWS profile is targeted at an access control administrator who has the maximum privileges on the physical access control system, including operation of the access control system.

The B-AACWS profile enables the specification of the following:

Data Sharing

- Presentation of data (i.e., reports and graphics)
- Ability to monitor the value of BACnet objects relevant for access control, including all required and optional properties
- Ability to modify setpoints and parameters
- Ability to create, delete, and configure Access User, Access Credential, and Access Rights objects
- Ability to create, delete, and configure Access Zone and Access Point objects
- Ability to create, delete, and configure Access Door and Credential Data Input objects

Alarm and Event Management

- Operator notification and presentation of event information, including access events

- Alarm acknowledgment by operators
- Alarm summarization
- Adjustment of alarm limits and conditions
- Adjustment of alarm routing
- Ability to create, delete, and configure Event Enrollment, Notification Class, and Notification Forwarder objects
- Presentation and modification of Event Logs

Scheduling

- Modification of calendars and schedules
- Display of the start and stop times (schedule) of scheduled devices
- Display of calendars
- Creation and deletion of calendars and schedules

Trending

- No requirements

Device and Network Management

- Ability to find other BACnet devices
- Ability to find all objects in BACnet devices
- Ability to silence a device on the network that is transmitting erroneous data
- Ability to synchronize the time in devices across the BACnet internetwork at the request of the operator
- Ability to cause a remote device to reinitialize itself
- Ability to backup and restore the configuration of other devices
- Ability to command half-routers to establish and terminate connections

[Add new **Clause L.Z2**, before L.7, p. 909]

L.Z2 BACnet Access Control Workstation (B-ACWS)

The B-ACWS workstation is an operator workstation for physical access control systems that is able to enroll and manage access control users and their credentials. It is able to create, delete, and configure access users, access credentials, and access rights. In addition, it provides all functions required for a security operator who operates the physical access control system.

The B-ACWS profile is targeted at an access control user administrator who has the privileges to enroll and manage users in the physical access control system and to operate the access control system.

The B-ACWS profile enables the specification of the following:

Data Sharing

- Presentation of data (i.e., reports and graphics)
- Ability to monitor the value of BACnet objects relevant for access control, including all required and optional properties
- Ability to modify setpoints and parameters
- Ability to create, delete, and configure Access User, Access Credential, and Access Rights objects

Alarm and Event Management

- Operator notification and presentation of event information, including access events
- Alarm acknowledgment by operators
- Alarm summarization
- Adjustment of alarm limits and conditions
- Presentation of Event Logs

Scheduling

- Modification of calendars and schedules
- Display of the start and stop times (schedule) of scheduled devices
- Display of calendars

Trending

- No requirements

Device and Network Management

- Ability to find other BACnet devices
- Ability to find all objects in BACnet devices
- Ability to silence a device on the network that is transmitting erroneous data
- Ability to synchronize the time in devices across the BACnet internetwork at the request of the operator
- Ability to cause a remote device to reinitialize itself
- Ability to backup and restore the configuration of other devices
- Ability to command half-routers to establish and terminate connections

[Add new **Clause L.Z3**, before L.7, p. 909]

L.Z3 BACnet Access Control Security Display (B-ACSD)

The B-ACSD device is a security operator display device. It is able to monitor and control the access control devices. Some minimal level of configuration support is considered a capability of such devices, e.g., setting threat levels, etc. It is also able to receive and handle access events and retrieve and present event logs from access control controllers.

The B-ACSD profile is targeted at security personnel to monitor and control the devices of a physical access control system.

The B-ACSD profile enables the specification of the following:

Data Sharing

- Presentation of basic data of BACnet object types relevant for access control
- Ability to modify setpoints and parameters

Alarm and Event Management

- Operator notification and presentation of event information, including access events
- Alarm acknowledgment by operators
- Alarm summarization
- Adjustment of alarm limits and conditions
- Presentation of Event Logs

Scheduling

- Modification of calendars and schedules
- Display of the start and stop times (schedule) of scheduled devices
- Display of calendars

Trending

- No requirements

Device and Network Management

- Ability to find other BACnet devices
- Ability to synchronize the time in devices across the BACnet internetwork at the request of the operator

[Add new **Clause L.Z4**, before L.7, p. 909]

L.Z4 BACnet Advanced Access Control Controller (B-AACC)

A B-AACC device performs physical access control authentication and authorization for physical access. It supports the modification of its Access User, Access Credential, and Access Rights objects by another device. It also supports the modification by another device of its Access Point and Access Zone objects. It is capable to use remote Access Control Door Controller devices and remote Access Control Credential Reader devices.

Data Sharing

- Ability to provide the values of any of its BACnet objects
- Ability to retrieve the values of BACnet objects from other devices
- Ability to allow creation, deletion, and modification of some or all of its BACnet objects by another device
- Ability to modify some BACnet objects in other devices

Alarm and Event Management

- Generation of alarm / event notifications, including access events and the ability to direct them to recipients
- Maintain a list of unacknowledged alarms / events
- Notifying other recipients that the acknowledgment has been received
- Adjustment of alarm / event parameters
- Logging of event notifications of the local device in an Event Log object

Scheduling

- Ability to schedule values, based on date and time

Trending

- No requirements

Device and Network Management

- Ability to respond to queries about its status
- Ability to respond to requests for information about any of its objects
- Ability to respond to communication control messages
- Ability to synchronize its internal clock upon request
- Ability to perform re-initialization upon request
- Ability to upload its configuration and allow it to be subsequently restored
- Ability to command half-routers to establish and terminate connections

[Add new **Clause L.Z5**, before L.7, p.909]

L.Z5 BACnet Access Control Controller (B-ACC)

A B-ACC device performs authentication and authorization for physical access. It supports the modification of its Access Credential and Access Rights objects by another device. The support of Access User objects is optional. It also supports the modification by another device of its Access Point and Access Zone objects for and at which the authentication and authorization is performed.

Data Sharing

- Ability to provide the values of any of its BACnet objects
- Ability to allow modification of some or all of its BACnet objects by another device

Alarm and Event Management

- Generation of alarm / event notifications, including access events and the ability to direct them to recipients
- Maintain a list of unacknowledged alarms / events
- Notifying other recipients that the acknowledgment has been received
- Adjustment of alarm / event parameters

Scheduling

- Ability to schedule values, based on date and time

Trending

- No requirements

Device and Network Management

- Ability to respond to queries about its status
- Ability to respond to requests for information about any of its objects
- Ability to respond to communication control messages
- Ability to synchronize its internal clock upon request
- Ability to perform re-initialization upon request

[Add new **Clause L.Z6**, before L.7, p. 909]

L.Z6 BACnet Access Control Door Controller (B-ACDC)

A B-ACDC is a device that controls doors. It represents the doors that it controls through the respective Access Door objects. It does not itself perform authentication and authorization for physical access.

Data Sharing

- Ability to provide the values of any of its BACnet objects
- Ability to allow modification of some or all of its BACnet objects by another device

Alarm and Event Management

- No requirement

Scheduling

- No requirement

Trending

- No requirement

Device and Network Management

- Ability to respond to queries about its status
- Ability to respond to requests for information about any of its objects
- Ability to respond to communication control messages

[Add new **Clause L.Z7**, before L.7, p. 909]

L.Z7 BACnet Access Control Credential Reader (B-ACCR)

This is a device that performs credential data reading and provides access to credential reader elements and functions. It represents its credential data reading functionality through Credential Data Input objects, and may use any other objects to represent additional credential reader device functions. Support of COV reporting of its Credential Data Input objects is required.

Data Sharing

- Ability to provide the values of any of its BACnet objects
- Ability to provide authentication factors through COV reporting
- Ability to allow modification of some or all of its BACnet objects by another device

Alarm and Event Management

- No requirement

Scheduling

- No requirement

Trending

- No requirement

Device and Network Management

- Ability to respond to queries about its status
- Ability to respond to requests for information about any of its objects
- Ability to respond to communication control messages

[Add the following columns to the profile table in **Clause L.7**, p. 910]

Data Sharing

B-AACWS	B-ACWS	B-ACSD
DS-RP-A,B	DS-RP-A,B	DS-RP-A,B
DS-RPM-A	DS-RPM-A	DS-RPM-A
DS-WP-A	DS-WP-A	DS-WP-A
DS-WPM-A	DS-WPM-A	DS-WPM-A
DS-ACAV-A	DS-ACAV-A	DS-ACV-A
DS-ACAM-A	DS-ACM-A	DS-ACM-A
DS-ACUC-A	DS-ACUC-A	
DS-ACSC-A		

Alarm & Event Management

B-AACWS	B-ACWS	B-ACSD
AE-N-A	AE-N-A	AE-N-A
AE-AC-A	AE-AC-A	AE-AC-A
AE-ACK-A	AE-ACK-A	AE-ACK-A
AE-AS-A	AE-AS-A	AE-AS-A
AE-ACAVM-A	AE-ACVM-A	-
AE-ACAVN-A	AE-ACAVN-A	AE-ACAVN-A
AE-ELVM-A ²	AE-ELV-A	AE-ELV-A

Scheduling

B-AACWS	B-ACWS	B-ACSD
SCHED-AVM-A	SCHED-VM-A	SCHED-VM-A

Trending

B-AACWS	B-ACWS	B-ACSD
-	-	-

Device & Network Management

B-AACWS	B-ACWS	B-ACSD
DM-DDB-A,B	DM-DDB-A,B	DM-DDB-A,B
DM-ANM-A		
DM-ADM-A		
DM-DOB-B	DM-DOB-B	DM-DOB-B
DM-DCC-A	DM-DCC-A	
DM-MTS-A	DM-MTS-A	
DM-OCD-A	DM-OCD-A	
DM-RD-A		
DM-BR-A		
NM-CE-A		

¹ ...

² Not required for devices claiming conformance to a Protocol_Revision less than 7

[Add the following columns to the profile table in **Clause L.7**, p. 910]

Data Sharing

B-AACC	B-ACC	B-ACDC	B-ACCR
DS-RP-A,B	DS-RP-B	DS-RP-B	DS-RP-B
DS-RPM-A,B	DS-RPM-B		
DS-WP-A,B	DS-WP-B	DS-WP-B	DS-WP-B
DS-WPM-B	DS-WPM-B		
DS-COV-A,B	DS-COV-B		DS-COV-B
DS-ACAD-A		DS-ACAD-B	
DS-ACCDI-A			DS-ACCDI-B
DS-ACUC-B	DS-ACUC-B		
DS-ACSC-B	DS-ACSC-B		

Alarm & Event Management

B-AACC	B-ACC	B-ACDC	B-ACCR
		-	-
AE-AC-B	AE-AC-B		
AE-ACK-B	AE-ACK-B		
AE-INFO-B	AE-INFO-B		
AE-EL-I-B ²			

Scheduling

B-AACC	B-ACC	B-ACDC	B-ACCR
SCHED-I-B	SCHED-I-B	-	-

Trending

B-AACC	B-ACC	B-ACDC	B-ACCR
-	-	-	-

Device & Network Management

B-AACC	B-ACC	B-ACDC	B-ACCR
DM-DDB-A,B	DM-DDB-A,B	DM-DDB-B	DM-DDB-B
DM-DOB-B	DM-DOB-B	DM-DOB-B	DM-DOB-B
DM-DCC-B	DM-DCC-B	DM-DCC-B	DM-DCC-B
DM-TS-B or DM-UTC-B	DM-TS-B or DM-UTC-B		
DM-RD-B	DM-RD-B		
DM-BR-B			
NM-CE-A			

¹ ...

² Not required for devices claiming conformance to a Protocol_Revision less than 7

135-2012bc-6. Add a Cross-Domain Advanced Workstation Profile.

Rationale

With the addition of life safety and physical access control workstation device profiles, there should also be an all-domain workstation device profile that includes the functionality of the B-AWS profile and the B-AACWS profile.

The B-ALSWs device profile introduced with section 4 of this addendum is intentionally excluded to avoid that the Cross-Domain Advanced Workstation becomes subject to life safety specific codes and regulations in its entirety.

[Change ANNEX A, p. 775]

...

BACnet Standardized Device Profile (Annex L):

BACnet Cross-Domain Advanced Operator Workstation (B-XAWS)

BACnet Advanced Operator Workstation (B-AWS)

BACnet Operator Workstation (B-OWS)

BACnet Operator Display (B-OD)

BACnet Building Controller (B-BC)

BACnet Advanced Application Controller (B-AAC)

BACnet Application Specific Controller (B-ASC)

BACnet Smart Sensor (B-SS)

BACnet Smart Actuator (B-SA)

...

[Change ANNEX L, p. 905]

[Note: This shows changes to ANNEX L, as if the changes of addendum 135-2012al had been incorporated]

[Note: This repeats the changes made for the access control profiles introduced in section 5 of this addendum, for clarity]

ANNEX L - DESCRIPTIONS AND PROFILES OF STANDARDIZED BACnet DEVICES (NORMATIVE)

(This annex is part of this standard and is required of its use.)

This annex provides descriptions of "standardized" types of BACnet devices. Any device that implements all the required BACnet capabilities for a particular device type and interoperability area may claim to be a device of that particular type. Devices may also provide additional capabilities and shall indicate these capabilities in their PICS.

BACnet device profiles are categorized into families:

- Operator Interfaces. This family is composed of *B-XAWS*, B-AWS, B-OWS, and B-OD.
- *Access Control Operator Interfaces*. This family is composed of *B-XAWS*, *B-AACWS*, *B-ACWS*, and *B-ACSD*.
- Controllers. This family is composed of B-BC, B-AAC, B-ASC, B-SA, and B-SS.
- *Access Control Controllers*. This family is composed of *B-AACC* and *B-ACC*.
- Miscellaneous. This family is composed of B-RTR, B-GW, ~~and~~ B-BBMD, *B-ACDC*, and *B-ACCR*.

Devices may claim to be multiple device types. For example, a device may claim to be both a B-BC and the B-RTR. Devices that claim multiple device profiles shall only combine capabilities from different device families, with the exception that multiple profiles may be selected from the Miscellaneous family. For example, a device may claim the B-BC, B-RTR, and B-BBMD profiles, but a device may not claim both the B-BC and B-SS profiles.

The B-GENERAL device profile is not included in any of the profile families and is never claimed in conjunction with any other device profile, except those from the Miscellaneous family.

[Add new **Clause L.X1**, before L.7, p. 909]

L.X1 BACnet Cross-Domain Advanced Workstation (B-XAWS)

The B-XAWS workstation is an advanced operator workstation for all building automation domains except life safety that includes the functionality of the following device profiles:

- B-AWS, see Clause L.1.2
- B-AACWS, see Clause L.Z1

[Add a new entry to **History of Revisions**, p. 1027]

(This History of Revisions is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard.)

HISTORY OF REVISIONS

...
1	19	<p>Addendum bc to ANSI/ASHRAE 135-2012 Approved by the ASHRAE Standards Committee on April 29, 2016, and by the American National Standards Institute April 29, 2016.</p> <ol style="list-style-type: none"> 1. Extend BIBBs for Primitive Value Objects. 2. Add New BIBBs for Event Enrollment and Subscription. 3. Amend B-AWS Related BIBBs for Revised Event Reporting. 4. Add Life Safety BIBBs and Device Profiles. 5. Add Physical Access Control BIBBs and Device Profiles. 6. Add an All-Domain Advanced Workstation Profile.

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ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

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