BSR/ASHRAE Addendum *da* to
ANSI/ASHRAE Standard 135-2024

First Public Review Draft

Proposed Addendum *da* to Standard 135-2024, BACnet® - A Data Communication Protocol for Building Automation and Control Networks

First Publication Public Review (November 2026)
(Draft shows Proposed Changes to Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

This standard is under continuous maintenance. To propose a change to the current standard, use the change submittal form available on the ASHRAE website, www.ashrae.org.

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHARE of any product, service, process, procedure, or design, and ASHRAE expressly disclaims such.

© 2026 ASHRAE. This draft is covered under ASHRAE copyright. Permission to reproduce or redistribute all or any part of this document must be obtained from the ASHRAE Manager of Standards, 180 Technology Parkway NW, Peachtree Corners, GA 30092. Phone: 404-636-8400, Ext. 1125. Fax: 404-321-5478. E-mail: standards.section@ashrae.org.

ASHRAE, 180 Technology Parkway NW, Peachtree Corners, GA 30092

(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD
This addendum adds language to allow an object to support just intrinsic reporting of first-stage faults. Update each object with event related properties to explicitly not require the property if only first stage faulting is supported

Note: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.

Addendum da to Standard 135-2024

Modify Section 12.2 as shown.

Change Property Requirement to Support Just First Stage Fault Eventing

Problem **5**
12.2 Analog Input Object Type 5
12.3 Analog Output Object Type 6
12.4 Analog Value Object Type 7
12.6 Binary Input Object Type 9
12.7 Binary Output Object Type 10
12.8 Binary Value Object Type 11
12.10 Command Object Type 13
12.11 Device Object Type 13
12.15 Life Safety Point Object Type 13
12.16 Life Safety Zone Object Type 14
12.17 Loop Object Type 15
12.18 Multi-state Input Object Type 17
12.19 Multi-state Output Object Type 18
12.20 Multi-state Value Object Type 19
12.21 Notification Class Object Type 20
12.22 Program Object Type 20
12.23 Pulse Converter Object Type 20
12.24 Schedule Object Type 22
12.25 Trend Log Object Type 22
12.26 Access Door Object Type 23
12.27 Event Log Object Type 25
12.28 Load Control Object Type 26
12.30 Trend Log Multiple Object Type 27
12.31 Access Point Object Type 28
12.32 Access Zone Object Type 30
12.36 Credential Data Input Object Type 31
12.37 CharacterString Value Object Type 32
12.38 DateTime Value Object Type 33
12.39 Large Analog Value Object Type 33
12.40 BitString Value Object Type 34
12.42 Time Value Object Type 36
12.43 Integer Value Object Type 36
12.44 Positive Integer Value Object Type 37
12.45 Date Value Object Type 38
12.46 DateTime Pattern Value Object Type 39
12.47 Time Pattern Value Object Type 39
12.48 Date Pattern Value Object Type 39
12.50 Global Group Object Type 39
12.53 Channel Object Type 40
12.54 Lighting Output Object Type 40

12.55 Binary Lighting Output Object Type 41
12.56 Network Port Object Type 41
12.57 Timer Object Type 41
12.59 Lift Object Type 42
12.60 Escalator Object Type 43
12.61 Accumulator Object Type 44
12.62 Staging Object Type 46
12.63 Audit Reporter Object Type 46
12.64 Audit Log Object Type 46
13.3.17 NONE Event Algorithm 46

History of Revisions

V1	2024-03-28	Initial draft.
V3	2024-06-06	Added 'at least one of' to every object type.
V4	2024-06-23	Cleaned up NONE algorithm Change all references to NONE algorithm. Check if FAULT algorithm. Use 12.1.8 as a reference
V7	2024-10-23	Update all with event and fault algorithms to follow 12.2. Update all with event algorithms to follow 12.3. Add all NONE algorithm objects and follow 12.10. Removed 13.3.17, NONE Event Algorithm and the instance from Table 13-7. All objects now reference 12.1.8. Removed 13.4.1, NONE Fault Algorithm and the instance from Table 13-8. Added ‘shall’ instead of ‘may’ or ‘can’. If the device supports fault generation it shall support the algorithm or internal.
V9	2025-02-04	From last meeting: Revisit Intrinsic Reporting. Think about documenting Reliability Reporting. The title does indicate the potential severity. Changes: Change the title of the proposal. The original purpose of this proposal was to add language because of an IR (Object can support just first stage fault eventing). The proposal now changes the requirements for eventing properties. Thought about documenting Reliability Reporting as a concept. Seems unnecessary as 12.1.8 handles it. Decided to simplify all fault eventing references to first stage and second stage in the objects and reference 12.1.8.

Problem

IC 135-2020-16 clarified that objects that support intrinsic reporting can support just CHANGE_OF_RELIABILITY.

Proposed Solution:

This proposal adds language to allow an object to support just intrinsic reporting of first-stage faults.
Update each object with event related properties to explicitly not require the property if only first stage faulting is supported. (Substantive)

Rationale:

IC135-2020-16 clarifies that objects that support intrinsic reporting can support the object's event algorithm or first stage reporting of faults or both.

This change adds language to allow an object, that supports intrinsic reporting, to support the object's event algorithm or first stage reporting of faults or both. Properties specific to the object's event algorithm are no longer required if only first stage reporting of faults is supported.

[Change Clause 12.2, p. 166]

12.2 Analog Input Object Type

…
Analog Input objects that support intrinsic reporting shall apply the OUT_OF_RANGE event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_OUT_OF_RANGE fault algorithm *shall*~~may~~ be applied. *See Clause 12.1.8.*

…

Table 12-2. Properties of the Analog Input Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	REAL	R[1]
Description	CharacterString	O
Device_Type	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O[8]
Out_Of_Service	BOOLEAN	R
Update_Interval	Unsigned	O
Units	BACnetEngineeringUnits	R
Min_Pres_Value	REAL	O
Max_Pres_Value	REAL	O
Resolution	REAL	O
COV_Increment	REAL	O[2]
Time_Delay	Unsigned	O[3,5,x]
Notification_Class	Unsigned	O[3,5]
High_Limit	REAL	O[3,5,x]
Low_Limit	REAL	O[3,5,x]
Deadband	REAL	O[3,5,x]
Limit_Enable	BACnetLimitEnable	O[3,5,x]
Event_Enable	BACnetEventTransitionBits	O[3,5]

Acked_Transitions	BACnetEventTransitionBits	O[3,5]
Notify_Type	BACnetNotifyType	O[3,5]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,5]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[5]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[5]
Event_Detection_Enable	BOOLEAN	O[3,5]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[5]
Event_Algorithm_Inhibit	BOOLEAN	O[5,6]
Time_Delay_Normal	Unsigned	O[5,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O[7]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Interface_Value	BACnetOptionalREAL	O
Fault_High_Limit	REAL	O[8]
Fault_Low_Limit	REAL	O[8]
Audit_Level	BACnetAuditLevel	O[9]
Auditable_Operations	BACnetAuditOperationFlags	O[9]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] This property is required to be writable when Out_Of_Service is TRUE.
[2] This property is required if, and shall be present only if, the object supports COV reporting for the Present_Value property.
[3] These properties are required if the object supports intrinsic reporting.
[4] Footnote removed.
[5] These properties shall be present only if the object supports intrinsic reporting.
[6] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[7] If this property is present, then the Reliability property shall be present.
[8] These properties are required if the object supports the FAULT_OUT_OF_RANGE fault algorithm.
[9] This property shall be present only if the device supports audit reporting.
[*x*] *These properties are required if the object supports the OUT_OF_RANGE event algorithm.*

[Change Clause 12.3, p. 172]

12.3 Analog Output Object Type

…
Analog Output objects that support intrinsic reporting shall apply the OUT_OF_RANGE event algorithm *or first stage reporting of fault conditions or both. See Clause 12.1.8.*
…

Table 12-3. Properties of the Analog Output Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	REAL	W
Description	CharacterString	O
Device_Type	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Units	BACnetEngineeringUnits	R
Min_Pres_Value	REAL	O
Max_Pres_Value	REAL	O
Resolution	REAL	O
Priority_Array	BACnetPriorityArray	R
Relinquish_Default	REAL	R

COV_Increment	REAL	O[1]
Time_Delay	Unsigned	O[2,4,x]
Notification_Class	Unsigned	O[2,4]
High_Limit	REAL	O[2,4,x]
Low_Limit	REAL	O[2,4,x]
Deadband	REAL	O[2,4,x]
Limit_Enable	BACnetLimitEnable	O[2,4,x]
Event_Enable	BACnetEventTransitionBits	O[2,4]
Acked_Transitions	BACnetEventTransitionBits	O[2,4]
Notify_Type	BACnetNotifyType	O[2,4]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[2,4]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[4]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[4]
Event_Detection_Enable	BOOLEAN	O[2,4]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[4]
Event_Algorithm_Inhibit	BOOLEAN	O[4,5]
Time_Delay_Normal	Unsigned	O[4,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O[6]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Interface_Value	BACnetOptionalREAL	O
Current_Command_Priority	BACnetOptionalUnsigned	R
Value_Source	BACnetValueSource	O[7,9,11]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[8,10]
Last_Command_Time	BACnetTimeStamp	O[8,10]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[10]
Audit_Level	BACnetAuditLevel	O[12]
Auditable_Operations	BACnetAuditOperationFlags	O[12]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[12]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] This property is required if, and shall be present only if, the object supports COV reporting for the Present_Value property.
[2] These properties are required if the object supports intrinsic reporting.
[3] Footnote removed.
[4] These properties shall be present only if the object supports intrinsic reporting.
[5] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[6] If this property is present, then the Reliability property shall be present.
[7] This property is required if the object supports the value source mechanism.
[8] These properties are required if the object supports the value source mechanism and is commandable.
[9] This property shall be present only if the object supports the value source mechanism.
[10] These properties shall be present only if the object supports the value source mechanism and is commandable.
[11] This property shall be writable as described in Clause 19.5.
[12] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the OUT_OF_RANGE event algorithm.*

[Change Clause 12.4, p. 179]

12.4 Analog Value Object Type

…
Analog Value objects that support intrinsic reporting shall apply the OUT_OF_RANGE event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_OUT_OF_RANGE fault algorithm *shall*~~may~~ be applied. *See Clause 12.1.8.*
…

Table 12-4. Properties of the Analog Value Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	REAL	R[4]
Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Units	BACnetEngineeringUnits	R
Priority_Array	BACnetPriorityArray	O[1]
Relinquish_Default	REAL	O[1]
COV_Increment	REAL	O[2]
Time_Delay	Unsigned	O[3,6,x]
Notification_Class	Unsigned	O[3,6]
High_Limit	REAL	O[3,6,x]
Low_Limit	REAL	O[3,6,x]
Deadband	REAL	O[3,6,x]
Limit_Enable	BACnetLimitEnable	O[3,6,x]
Event_Enable	BACnetEventTransitionBits	O[3,6]
Acked_Transitions	BACnetEventTransitionBits	O[3,6]
Notify_Type	BACnetNotifyType	O[3,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,6]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Detection_Enable	BOOLEAN	O[3,6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,7]
Time_Delay_Normal	Unsigned	O[6,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O[8]
Min_Pres_Value	REAL	O
Max_Pres_Value	REAL	O
Resolution	REAL	O
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Fault_High_Limit	REAL	O[9]
Fault_Low_Limit	REAL	O[9]
Current_Command_Priority	BACnetOptionalUnsigned	O[1]
Value_Source	BACnetValueSource	O[10,12,14]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[11,13]
Last_Command_Time	BACnetTimeStamp	O[11,13]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[13]
Audit_Level	BACnetAuditLevel	O[15]
Auditable_Operations	BACnetAuditOperationFlags	O[15]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[15]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] These properties are required if, and shall be present only if, Present_Value is commandable.

[2] This property is required if, and shall be present only if, the object supports COV reporting for the Present_Value property.

[3] These properties are required if the object supports intrinsic reporting.

[4] If Present_Value is commandable, then it is required to be writable. This property is required to be writable when Out_Of_Service is TRUE.

[5] Footnote removed.

[6] These properties shall be present only if the object supports intrinsic reporting.
[7] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[8] If this property is present, then the Reliability property shall be present.
[9] These properties are required if the object supports the FAULT_OUT_OF_RANGE fault algorithm.
[10] This property is required if the object supports the value source mechanism.
[11] These properties are required if the object supports the value source mechanism and is commandable.
[12] This property shall be present only if the object supports the value source mechanism.
[13] These properties shall be present only if the object supports the value source mechanism and is commandable.
[14] This property shall be writable as described in Clause 19.5.
[15] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the OUT_OF_RANGE event algorithm.*

[Change Clause 12.6, p. 190]

12.6 Binary Input Object Type

…
Binary Input objects that support intrinsic reporting shall apply the CHANGE_OF_STATE event algorithm *or first stage reporting of fault conditions or both. See Clause 12.1.8*.
…

Table 12-6. Properties of the Binary Input Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	BACnetBinaryPV	R[1]
Description	CharacterString	O
Device_Type	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Polarity	BACnetPolarity	R
Inactive_Text	CharacterString	O[2]
Active_Text	CharacterString	O[2]
Change_Of_State_Time	BACnetDateTime	O[3]
Change_Of_State_Count	Unsigned	O[3]
Time_Of_State_Count_Reset	BACnetDateTime	O[3]
Elapsed_Active_Time	Unsigned32	O[4]
Time_Of_Active_Time_Reset	BACnetDateTime	O[4]
Time_Delay	Unsigned	O[~~5~~,7,*x*]
Notification_Class	Unsigned	O[5,7]
Alarm_Value	BACnetBinaryPV	O[~~5~~,7,*x*]
Event_Enable	BACnetEventTransitionBits	O[5,7]
Acked_Transitions	BACnetEventTransitionBits	O[5,7]
Notify_Type	BACnetNotifyType	O[5,7]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[5,7]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[7]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[7]
Event_Detection_Enable	BOOLEAN	O[5,7]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[7]
Event_Algorithm_Inhibit	BOOLEAN	O[7,8]
Time_Delay_Normal	Unsigned	O[7,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O[9]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Interface_Value	BACnetOptionalBinaryPV	O

Audit_Level	BACnetAuditLevel	O[10]
Auditable_Operations	BACnetAuditOperationFlags	O[10]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] This property is required to be writable when Out_Of_Service is TRUE.
[2] If one of the optional properties Inactive_Text or Active_Text is present, then both of these properties shall be present.
[3] If one of the optional properties Change_Of_State_Time, Change_Of_State_Count, or Time_Of_State_Count_Reset is present, then all of these properties shall be present.
[4] If one of the optional properties Elapsed_Active_Time or Time_Of_Active_Time_Reset is present, then both of these properties shall be present.
[5] These properties are required if the object supports intrinsic reporting.
[6] Footnote removed.
[7] These properties shall be present only if the object supports intrinsic reporting.
[8] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[9] If this property is present, then the Reliability property shall be present.
[10] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_STATE event algorithm.*

[Change Clause 12.7, p. 197]

12.7 Binary Output Object Type

…
Binary Output objects that support intrinsic reporting shall apply the COMMAND_FAILURE event algorithm. *or first stage reporting of fault conditions or both. See Clause 12.1.8.*
…

Table 12-8. Properties of the Binary Output Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	BACnetBinaryPV	W
Description	CharacterString	O
Device_Type	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Polarity	BACnetPolarity	R
Inactive_Text	CharacterString	O[1]
Active_Text	CharacterString	O[1]
Change_Of_State_Time	BACnetDateTime	O[2]
Change_Of_State_Count	Unsigned	O[2]
Time_Of_State_Count_Reset	BACnetDateTime	O[2]
Elapsed_Active_Time	Unsigned32	O[3]
Time_Of_Active_Time_Reset	BACnetDateTime	O[3]
Minimum_Off_Time	Unsigned32	O
Minimum_On_Time	Unsigned32	O
Priority_Array	BACnetPriorityArray	R
Relinquish_Default	BACnetBinaryPV	R
Time_Delay	Unsigned	O[4,6]
Notification_Class	Unsigned	O[4,6]
Feedback_Value	BACnetBinaryPV	O[4,X]
Event_Enable	BACnetEventTransitionBits	O[4,6]
Acked_Transitions	BACnetEventTransitionBits	O[4,6]

Notify_Type	BACnetNotifyType	O[4,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[4,6]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Detection_Enable	BOOLEAN	O[4,6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,7]
Time_Delay_Normal	Unsigned	O[6]
Reliability_Evaluation_Inhibit	BOOLEAN	O[8]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Interface_Value	BACnetOptionalBinaryPV	O
Current_Command_Priority	BACnetOptionalUnsigned	R
Value_Source	BACnetValueSource	O[9,11,13]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[10,12]
Last_Command_Time	BACnetTimeStamp	O[10,12]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[12]
Audit_Level	BACnetAuditLevel	O[14]
Auditable_Operations	BACnetAuditOperationFlags	O[14]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[14]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If one of the optional properties Inactive_Text or Active_Text is present, then both of these properties shall be present.
[2] If one of the optional properties Change_Of_State_Time, Change_Of_State_Count, or Time_Of_State_Count_Reset is present, then all of these properties shall be present.
[3] If one of the optional properties Elapsed_Active_Time or Time_Of_Active_Time_Reset is present, then both of these properties shall be present.
[4] These properties are required if the object supports intrinsic reporting.
[5] Footnote removed.
[6] These properties shall be present only if the object supports intrinsic reporting.
[7] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[8] If this property is present, then the Reliability property shall be present.
[9] This property is required if the object supports the value source mechanism.
[10] These properties are required if the object supports the value source mechanism and is commandable.
[11] This property shall be present only if the object supports the value source mechanism.
[12] These properties shall be present only if the object supports the value source mechanism and is commandable.
[13] This property shall be writable as described in Clause 19.5.
[14] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the COMMAND_FAILURE event algorithm.*

[Change Clause 12.8, p. 205]

12.8 Binary Value Object Type

…
Binary Value objects that support intrinsic reporting shall apply the CHANGE_OF_STATE event algorithm *or first stage reporting of fault conditions or both. See Clause 12.1.8*.
…

Table 12-10. Properties of the Binary Value Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	BACnetBinaryPV	R[1]
Description	CharacterString	O

Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Inactive_Text	CharacterString	O[2]
Active_Text	CharacterString	O[2]
Change_Of_State_Time	BACnetDateTime	O[3]
Change_Of_State_Count	Unsigned	O[3]
Time_Of_State_Count_Reset	BACnetDateTime	O[3]
Elapsed_Active_Time	Unsigned32	O[4]
Time_Of_Active_Time_Reset	BACnetDateTime	O[4]
Minimum_Off_Time	Unsigned32	O
Minimum_On_Time	Unsigned32	O
Priority_Array	BACnetPriorityArray	O[5]
Relinquish_Default	BACnetBinaryPV	O[5]
Time_Delay	Unsigned	O[~~6,~~8,*x*]
Notification_Class	Unsigned	O[6,8]
Alarm_Value	BACnetBinaryPV	O[~~6,~~8,*x*]
Event_Enable	BACnetEventTransitionBits	O[6,8]
Acked_Transitions	BACnetEventTransitionBits	O[6,8]
Notify_Type	BACnetNotifyType	O[6,8]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[6,8]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[8]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[8]
Event_Detection_Enable	BOOLEAN	O[6,8]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[8]
Event_Algorithm_Inhibit	BOOLEAN	O[8,9]
Time_Delay_Normal	Unsigned	O[8,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O[10]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Current_Command_Priority	BACnetOptionalUnsigned	O[5]
Value_Source	BACnetValueSource	O[11,13,15]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[12,14]
Last_Command_Time	BACnetTimeStamp	O[12,14]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[14]
Audit_Level	BACnetAuditLevel	O[16]
Auditable_Operations	BACnetAuditOperationFlags	O[16]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[16]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If Present_Value is commandable, then it is required to be writable. This property is required to be writable when Out_Of_Service is TRUE.

[2] If one of the optional properties Inactive_Text or Active_Text is present, then both of these properties shall be present.

[3] If one of the optional properties Change_Of_State_Time, Change_Of_State_Count, or Time_Of_State_Count_Reset is present, then all of these properties shall be present.

[4] If one of the optional properties Elapsed_Active_Time or Time_Of_Active_Time_Reset is present, then both of these properties shall be present.

[5] These properties are required if, and shall be present only if, Present_Value is commandable.

[6] These properties are required if the object supports intrinsic reporting.

[7] Footnote removed.

[8] These properties shall be present only if the object supports intrinsic reporting.

[9] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.

[10] If this property is present, then the Reliability property shall be present.

[11] This property is required if the object supports the value source mechanism.

[12] These properties are required if the object supports the value source mechanism and is commandable.
[13] This property shall be present only if the object supports the value source mechanism.
[14] These properties shall be present only if the object supports the value source mechanism and is commandable.
[15] This property shall be writable as described in Clause 19.5.
[16] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_STATE event algorithm.*

[Change Clause 12.10, p. 216]

12.10 Command Object Type

…
Command objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Command objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.11, p. 221]

12.11 Device Object Type

…
Device objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8*~~Device objects that support intrinsic reporting shall apply the NONE event algorithm~~.
…

[Change Clause 12.15, p. 245]

12.15 Life Safety Point Object Type

…
Life Safety Point objects that support intrinsic reporting shall apply the CHANGE_OF_LIFE_SAFETY event algorithm *or first stage reporting of fault conditions or both*. *See Clause 12.1.8.* ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_LIFE_SAFETY fault algorithm *shall*~~ean~~ be applied.
…

Table 12-18. Properties of the Life Safety Point Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	BACnetLifeSafetyState	R
Tracking_Value	BACnetLifeSafetyState	R[1]
Description	CharacterString	O
Device_Type	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	R[1]
Out_Of_Service	BOOLEAN	R
Mode	BACnetLifeSafetyMode	W
Accepted_Modes	BACnetLIST of BACnetLifeSafetyMode	R
Time_Delay	Unsigned	O[~~2~~,5,*x*]
Notification_Class	Unsigned	O[2,5]
Life_Safety_Alarm_Values	BACnetLIST of BACnetLifeSafetyState	O[~~2~~,5,*x*]
Alarm_Values	BACnetLIST of BACnetLifeSafetyState	O[~~2~~,5,*x*]
Fault_Values	BACnetLIST of BACnetLifeSafetyState	O[*y*]
Event_Enable	BACnetEventTransitionBits	O[2,5]

Acked_Transitions	BACnetEventTransitionBits	O[2,5]
Notify_Type	BACnetNotifyType	O[2,5]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[2,5]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[5]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[5]
Event_Detection_Enable	BOOLEAN	O[2,5]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[5]
Event_Algorithm_Inhibit	BOOLEAN	O[5,6]
Time_Delay_Normal	Unsigned	O[5,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O
Silenced	BACnetSilencedState	R
Operation_Expected	BACnetLifeSafetyOperation	R
Maintenance_Required	BACnetMaintenance	O
Setting	Unsigned8	O
Direct_Reading	REAL	O[3]
Units	BACnetEngineeringUnits	O[3]
Member_Of	BACnetLIST of BACnetDeviceObjectReference	O
Floor_Number	Unsigned8	O
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Value_Source	BACnetValueSource	O[7,8,9]
Audit_Level	BACnetAuditLevel	O[10]
Auditable_Operations	BACnetAuditOperationFlags	O[10]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] These properties are required to be writable when Out_Of_Service is TRUE.
[2] These properties are required if the object supports intrinsic alarming.
[3] If either of these properties is present, then both must be present.
[4] Footnote removed.
[5] These properties shall be present only if the object supports intrinsic reporting.
[6] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[7] This property is required if the object supports the value source mechanism.
[8] This property shall be present only if the object supports the value source mechanism.
[9] This property shall be writable as described in Clause 19.5.
[10] This property shall be present only if the device supports audit reporting.
[*x*] *These properties are required if the object supports the CHANGE_OF_LIFE_SAFETY event algorithm.*
[*y*] *These properties are required if the object supports the FAULT_LIFE_SAFETY fault algorithm.*

[Change Clause 12.16, p. 252]

12.16 Life Safety Zone Object Type

…
Life Safety Zone objects that support intrinsic reporting shall apply the CHANGE_OF_LIFE_SAFETY event algorithm *or first stage reporting of fault conditions or both*. *See Clause 12.1.8.* ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_LIFE_SAFETY fault algorithm *shall*~~can~~ be applied.
…

Table 12-19. Properties of the Life Safety Zone Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	BACnetLifeSafetyState	R
Tracking_Value	BACnetLifeSafetyState	R[1]
Description	CharacterString	O
Device_Type	CharacterString	O
Status_Flags	BACnetStatusFlags	R

Event_State	BACnetEventState	R
Reliability	BACnetReliability	R[1]
Out_Of_Service	BOOLEAN	R
Mode	BACnetLifeSafetyMode	W
Accepted_Modes	BACnetLIST of BACnetLifeSafetyMode	R
Time_Delay	Unsigned	O[2,4,x]
Notification_Class	Unsigned	O[2,4]
Life_Safety_Alarm_Values	BACnetLIST of BACnetLifeSafetyState	O[2,4,x]
Alarm_Values	BACnetLIST of BACnetLifeSafetyState	O[2,4,x]
Fault_Values	BACnetLIST of BACnetLifeSafetyState	O[4,y]
Event_Enable	BACnetEventTransitionBits	O[2,4]
Acked_Transitions	BACnetEventTransitionBits	O[2,4]
Notify_Type	BACnetNotifyType	O[2,4]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[2,4]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[4]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[4]
Event_Detection_Enable	BOOLEAN	O[2,4]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[4]
Event_Algorithm_Inhibit	BOOLEAN	O[4,5]
Time_Delay_Normal	Unsigned	O[4,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O
Silenced	BACnetSilencedState	R
Operation_Expected	BACnetLifeSafetyOperation	R
Maintenance_Required	BOOLEAN	O
Zone_Members	BACnetLIST of BACnetDeviceObjectReference	R
Member_Of	BACnetLIST of BACnetDeviceObjectReference	O
Floor_Number	Unsigned8	O
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Value_Source	BACnetValueSource	O[6,7,8]
Audit_Level	BACnetAuditLevel	O[9]
Auditable_Operations	BACnetAuditOperationFlags	O[9]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] These properties are required to be writable when Out_Of_Service is TRUE.
[2] These properties are required if the object supports intrinsic ~~alarming~~*reporting*.
[3] Footnote removed.
[4] These properties shall be present only if the object supports intrinsic reporting.
[5] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[6] This property is required if the object supports the value source mechanism.
[7] This property shall be present only if the object supports the value source mechanism.
[8] This property shall be writable as described in Clause 19.5.
[9] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_LIFE_SAFETY event algorithm.*
[y] *These properties are required if the object supports the FAULT_LIFE_SAFETY fault algorithm.*

[Change Clause 12.17, p. 259]

12.17 Loop Object Type

…
Loop objects that support intrinsic reporting shall apply the FLOATING_LIMIT event algorithm *or first stage reporting of fault conditions or both. See Clause 12.1.8*.
…

Table 12-20. Properties of the Loop Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R

Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	REAL	R[7]
Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O[7]
Out_Of_Service	BOOLEAN	R
Update_Interval	Unsigned	O
Output_Units	BACnetEngineeringUnits	R
Manipulated_Variable_Reference	BACnetObjectPropertyReference	R
Controlled_Variable_Reference	BACnetObjectPropertyReference	R
Controlled_Variable_Value	REAL	R
Controlled_Variable_Units	BACnetEngineeringUnits	R
Setpoint_Reference	BACnetSetpointReference	R
Setpoint	REAL	R
Action	BACnetAction	R
Proportional_Constant	REAL	O[1]
Proportional_Constant_Units	BACnetEngineeringUnits	O[1]
Integral_Constant	REAL	O[2]
Integral_Constant_Units	BACnetEngineeringUnits	O[2]
Derivative_Constant	REAL	O[3]
Derivative_Constant_Units	BACnetEngineeringUnits	O[3]
Bias	REAL	O
Maximum_Output	REAL	O
Minimum_Output	REAL	O
Priority_For_Writing	Unsigned(1..16)	R
COV_Increment	REAL	O[4]
Time_Delay	Unsigned	O[5,8,x]
Notification_Class	Unsigned	O[5,8]
Error_Limit	REAL	O[5,8,x]
Deadband	REAL	O[5,8,x]
Event_Enable	BACnetEventTransitionBits	O[5,8]
Acked_Transitions	BACnetEventTransitionBits	O[5,8]
Notify_Type	BACnetNotifyType	O[5,8]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[5,8]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[8]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[8]
Event_Detection_Enable	BOOLEAN	O[5,8]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[8]
Event_Algorithm_Inhibit	BOOLEAN	O[8,9]
Time_Delay_Normal	Unsigned	O[8,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O[10]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Low_Diff_Limit	BACnetOptionalREAL	O[8,x]
Audit_Level	BACnetAuditLevel	O[11]
Auditable_Operations	BACnetAuditOperationFlags	O[11]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If one of these optional properties is present, then both of these properties shall be present.
[2] If one of these optional properties is present, then both of these properties shall be present.
[3] If one of these optional properties is present, then both of these properties shall be present.
[4] This property is required if, and shall be present only if, the object supports COV reporting for the Present_Value property.
[5] These properties are required if the object supports intrinsic reporting.

[6] Footnote removed.
[7] These properties are required to be writable when Out_Of_Service is TRUE.
[8] These properties shall be present only if the object supports intrinsic reporting.
[9] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[10] If this property is present, then the Reliability property shall be present.
[11] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the FLOATING_LIMIT event algorithm.*

[Change Clause 12.18, p. 268]

12.18 Multi-state Input Object Type

…
Multi-state Input objects that support intrinsic reporting shall apply the CHANGE_OF_STATE event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_STATE fault algorithm *shall*~~can~~ be applied. *See Clause 12.1.8.*
…

Table 12-21. Properties of the Multi-state Input Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	Unsigned	R[1]
Description	CharacterString	O
Device_Type	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Number_Of_States	Unsigned	R
State_Text	BACnetARRAY[N] of CharacterString	O
Time_Delay	Unsigned	O[3,5,x]
Notification_Class	Unsigned	O[3,5]
Alarm_Values	BACnetLIST of Unsigned	O[3,5,x]
Fault_Values	BACnetLIST of Unsigned	O[7,y]
Event_Enable	BACnetEventTransitionBits	O[3,5]
Acked_Transitions	BACnetEventTransitionBits	O[3,5]
Notify_Type	BACnetNotifyType	O[3,5]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,5]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[5]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[5]
Event_Detection_Enable	BOOLEAN	O[3,5]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[5]
Event_Algorithm_Inhibit	BOOLEAN	O[5,6]
Time_Delay_Normal	Unsigned	O[5,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O[7]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Interface_Value	BACnetOptionalUnsigned	O
Audit_Level	BACnetAuditLevel	O[8]
Auditable_Operations	BACnetAuditOperationFlags	O[8]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] This property is required to be writable when Out_Of_Service is TRUE.
[2] Footnote removed.
[3] These properties are required if the object supports intrinsic reporting.
[4] Footnote removed.

[5] These properties shall be present only if the object supports intrinsic reporting.
[6] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[7] If this property is present, then the Reliability property shall be present.
[8] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_STATE event algorithm.*
[y] *These properties are required if the object supports the FAULT_STATE fault algorithm.*

[Change Clause 12.19, p. 274]

12.19 Multi-state Output Object Type

…
Multi-state Output objects that support intrinsic reporting shall apply the COMMAND_FAILURE event algorithm *or first stage reporting of fault conditions or both. See Clause 12.1.8*.
…

Table 12-22. Properties of the Multi-state Output Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	Unsigned	W
Description	CharacterString	O
Device_Type	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Number_Of_States	Unsigned	R
State_Text	BACnetARRAY[N] of CharacterString	O
Priority_Array	BACnetPriorityArray	R
Relinquish_Default	Unsigned	R
Time_Delay	Unsigned	O[1,3,x]
Notification_Class	Unsigned	O[1,3]
Feedback_Value	Unsigned	O[1,x]
Event_Enable	BACnetEventTransitionBits	O[1,3]
Acked_Transitions	BACnetEventTransitionBits	O[1,3]
Notify_Type	BACnetNotifyType	O[1,3]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[1,3]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[3]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[3]
Event_Detection_Enable	BOOLEAN	O[1,3]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[3]
Event_Algorithm_Inhibit	BOOLEAN	O[3,4]
Time_Delay_Normal	Unsigned	O[3,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O[5]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Interface_Value	BACnetOptionalUnsigned	O
Current_Command_Priority	BACnetOptionalUnsigned	R
Value_Source	BACnetValueSource	O[6,8,10]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[7,9]
Last_Command_Time	BACnetTimeStamp	O[7,9]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[9]
Audit_Level	BACnetAuditLevel	O[11]
Auditable_Operations	BACnetAuditOperationFlags	O[11]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[11]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O

Profile_Name	CharacterString	O

[1] These properties are required if the object supports intrinsic reporting.
[2] Footnote removed.
[3] These properties shall be present only if the object supports intrinsic reporting.
[4] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[5] If this property is present, then the Reliability property shall be present.
[6] This property is required if the object supports the value source mechanism.
[7] These properties are required if the object supports the value source mechanism and is commandable.
[8] This property shall be present only if the object supports the value source mechanism.
[9] These properties shall be present only if the object supports the value source mechanism and is commandable.
[10] This property shall be writable as described in Clause 19.5.
[11] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the COMMAND_FAILURE event algorithm.*

[Change Clause 12.20, p. 281]

12.20 Multi-state Value Object Type

…
Multi-state Value objects that support intrinsic reporting shall apply the CHANGE_OF_STATE event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_STATE fault algorithm *shall*~~can~~ be applied. *See Clause 12.1.8.*
…

Table 12-23. Properties of the Multi-state Value Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	Unsigned	R[1]
Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Number_Of_States	Unsigned	R
State_Text	BACnetARRAY[N] of CharacterString	O
Priority_Array	BACnetPriorityArray	O[3]
Relinquish_Default	Unsigned	O[3]
Time_Delay	Unsigned	O[4,6,x]
Notification_Class	Unsigned	O[4,6]
Alarm_Values	BACnetLIST of Unsigned	O[4,6,x]
Fault_Values	BACnetLIST of Unsigned	O[8,y]
Event_Enable	BACnetEventTransitionBits	O[4,6]
Acked_Transitions	BACnetEventTransitionBits	O[4,6]
Notify_Type	BACnetNotifyType	O[4,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[4,6]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Detection_Enable	BOOLEAN	O[4,6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,7]
Time_Delay_Normal	Unsigned	O[6,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O[8]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Current_Command_Priority	BACnetOptionalUnsigned	O[3]
Value_Source	BACnetValueSource	O[9,11,13]

Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[10,12]
Last_Command_Time	BACnetTimeStamp	O[10,12]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[12]
Audit_Level	BACnetAuditLevel	O[14]
Auditable_Operations	BACnetAuditOperationFlags	O[14]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[14]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If Present_Value is commandable, then it is required to also be writable. This property is required to be writable when Out_Of_Service is TRUE.
[2] Footnote removed.
[3] These properties are required if, and shall be present only if, Present_Value is commandable.
[4] These properties are required if the object supports intrinsic reporting.
[5] Footnote removed.
[6] These properties shall be present only if the object supports intrinsic reporting.
[7] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[8] If this property is present, then the Reliability property shall be present.
[9] This property is required if the object supports the value source mechanism.
[10] These properties are required if the object supports the value source mechanism and is commandable.
[11] This property shall be present only if the object supports the value source mechanism.
[12] These properties shall be present only if the object supports the value source mechanism and is commandable.
[13] This property shall be writable as described in Clause 19.5.
[14] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_STATE event algorithm.*
[y] *These properties are required if the object supports the FAULT_STATE fault algorithm.*

[Change Clause 12.21, p. 288]

12.21 Notification Class Object Type

…
Notification Class objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Notification Class objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.22, p. 294]

12.22 Program Object Type

…
Program objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Program objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.23, p. 301]

12.23 Pulse Converter Object Type

…
Pulse Converter objects that support intrinsic reporting shall apply the OUT_OF_RANGE event algorithm *or first stage reporting of fault conditions or both. See Clause 12.1.8*.
…

Table 12-27. Properties of the Pulse Converter Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R

Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Present_Value	REAL	R[1]
Input_Reference	BACnetObjectPropertyReference	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Units	BACnetEngineeringUnits	R
Scale_Factor	REAL	R
Adjust_Value	REAL	W
Count	Unsigned	R
Update_Time	BACnetDateTime	R
Count_Change_Time	BACnetDateTime	R
Count_Before_Change	Unsigned	R
COV_Increment	REAL	O[2]
COV_Period	Unsigned	O[2]
Notification_Class	Unsigned	O[3,5,*x*]
Time_Delay	Unsigned	O[~~3,~~5,*x*]
High_Limit	REAL	O[~~3,~~5,*x*]
Low_Limit	REAL	O[~~3,~~5,*x*]
Deadband	REAL	O[~~3,~~5]
Limit_Enable	BACnetLimitEnable	O[~~3,~~5,*x*]
Event_Enable	BACnetEventTransitionBits	O[3,5]
Acked_Transitions	BACnetEventTransitionBits	O[3,5]
Notify_Type	BACnetNotifyType	O[3,5]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,5]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[5]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[5]
Event_Detection_Enable	BOOLEAN	O[3,5]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[5]
Event_Algorithm_Inhibit	BOOLEAN	O[5,6]
Time_Delay_Normal	Unsigned	O[5,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O[7]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Audit_Level	BACnetAuditLevel	O[8]
Auditable_Operations	BACnetAuditOperationFlags	O[8]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] This property is required to be writable when Out_Of_Service is TRUE.
[2] These properties are required if, and shall be present only if, the object supports COV reporting for the Present_Value property.
[3] These properties are required if the object supports intrinsic reporting.
[4] Footnote removed.
[5] These properties shall be present only if the object supports intrinsic reporting.
[6] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[7] If this property is present, then the Reliability property shall be present.
[8] This property shall be present only if the device supports audit reporting.
[*x*] *These properties are required if the object supports the OUT_OF_RANGE event algorithm.*

[Change Clause 12.24, p. 308]

12.24 Schedule Object Type

…
Schedule objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Schedule objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.25, p. 315]

12.25 Trend Log Object Type

…
Logging may be enabled and disabled through the Enable property and at dates and times specified by the Start_Time and Stop_Time properties. Trend Log enabling and disabling is recorded in the log buffer.

Trend Log objects that support intrinsic reporting shall apply the BUFFER_READY event algorithm or first stage reporting of fault conditions or both. See Clause 12.1.8.

Trend Log objects optionally support the BUFFER_READY event algorithm~~Event reporting (notification) may be provided~~ to facilitate automatic fetching of log records by processes on other devices such as fileservers. ~~Support is provided for algorithmic reporting; optionally, intrinsic reporting may be provided. Trend Log objects that support intrinsic reporting shall apply the BUFFER_READY event algorithm.~~

~~In intrinsic reporting, when~~*When* the number of log records specified by the Notification_Threshold property have been collected since the previous notification (or startup), a new *BUFFER_READY* notification is sent to recipients enrolled in the respective Notification Class object.

In response to a notification, recipients may fetch all of the new records. If a recipient needs to fetch all of the new log records, it should use the 'By Sequence Number' form of the ReadRange service request.

A missed notification may be detected by a recipient if the 'Current Notification' parameter received in the previous BUFFER_READY notification is different than the 'Previous Notification' parameter of the current BUFFER_READY notification. If the ReadRange-ACK response to the ReadRange request issued under these conditions has the FIRST_ITEM bit of the 'Result Flags' parameter set to TRUE, log records have probably been missed by this recipient.
…

Table 12-29. Properties of the Trend Log Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Enable	BOOLEAN	W
Start_Time	BACnetDateTime	O[1,2]
Stop_Time	BACnetDateTime	O[1,2]
Log_DeviceObjectProperty	BACnetDeviceObjectPropertyReference	O[8]
Log_Interval	Unsigned	O[1,3]
COV_Resubscription_Interval	Unsigned	O
Client_COV_Increment	BACnetClientCOV	O
Stop_When_Full	BOOLEAN	R
Buffer_Size	Unsigned32	R
Log_Buffer	BACnetLIST of BACnetLogRecord	R
Record_Count	Unsigned32	W
Total_Record_Count	Unsigned32	R
Logging_Type	BACnetLoggingType	R
Align_Intervals	BOOLEAN	O[5]
Interval_Offset	Unsigned	O[5]
Trigger	BOOLEAN	O

Status_Flags	BACnetStatusFlags	R
Reliability	BACnetReliability	O
Notification_Threshold	Unsigned32	O[4,7,x]
Records_Since_Notification	Unsigned32	O[4,7,x]
Last_Notify_Record	Unsigned32	O[4,7,x]
Event_State	BACnetEventState	R
Notification_Class	Unsigned	O[4,7]
Event_Enable	BACnetEventTransitionBits	O[4,7]
Acked_Transitions	BACnetEventTransitionBits	O[4,7]
Notify_Type	BACnetNotifyType	O[4,7]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[4,7]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[7]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[7]
Event_Detection_Enable	BOOLEAN	O[4,7]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[7]
Event_Algorithm_Inhibit	BOOLEAN	O[7,9]
Reliability_Evaluation_Inhibit	BOOLEAN	O[10]
Audit_Level	BACnetAuditLevel	O[11]
Auditable_Operations	BACnetAuditOperationFlags	O[11]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] These properties are required if the monitored property is a BACnet property.
[2] If present, these properties are required to be writable.
[3] If present, this property is required to be writable when Logging_Type has the value POLLED or the value COV. Also, if present this property is required to be read-only if Logging_Type has the value TRIGGERED.
[4] These properties are required if the object supports intrinsic reporting.
[5] These properties are required if, and shall be present only if, the object supports clock-aligned logging.
[6] Footnote removed.
[7] These properties shall be present only if the object supports intrinsic reporting.
[8] This property is required if, and shall be present only if, the monitored property is a BACnet property.
[9] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[10] If this property is present, then the Reliability property shall be present.
[11] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the BUFFER_READY event algorithm.*

[Change Clause 12.26, p. 325]

12.26 Access Door Object Type

…
Access Door objects that support intrinsic reporting shall apply the CHANGE_OF_STATE event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_STATE fault algorithm *shall*~~ean~~ be applied. *See Clause 12.1.8.*
…

Table 12-30. Properties of the Access Door Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	BACnetDoorValue	W
Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	R

Out_Of_Service	BOOLEAN	R
Priority_Array	BACnetPriorityArray	R
Relinquish_Default	BACnetDoorValue	R
Door_Status	BACnetDoorStatus	O[1,2]
Lock_Status	BACnetLockStatus	O[1]
Secured_Status	BACnetDoorSecuredStatus	O
Door_Members	BACnetARRAY[N] of BACnetDeviceObjectReference	O
Door_Pulse_Time	Unsigned	R
Door_Extended_Pulse_Time	Unsigned	R
Door_Unlock_Delay_Time	Unsigned	O
Door_Open_Too_Long_Time	Unsigned	R
Door_Alarm_State	BACnetDoorAlarmState	O[1,~~3~~,*x,y*]
Masked_Alarm_Values	BACnetLIST of BACnetDoorAlarmState	O[*x,y*]
Maintenance_Required	BACnetMaintenance	O
Time_Delay	Unsigned	O[~~3~~,5,*x*]
Notification_Class	Unsigned	O[3,5]
Alarm_Values	BACnetLIST of BACnetDoorAlarmState	O[~~3~~,5,*x*]
Fault_Values	BACnetLIST of BACnetDoorAlarmState	O[*y*]
Event_Enable	BACnetEventTransitionBits	O[3,5]
Acked_Transitions	BACnetEventTransitionBits	O[3,5]
Notify_Type	BACnetNotifyType	O[3,5]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,5]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[5]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[5]
Event_Detection_Enable	BOOLEAN	O[3,5]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[5]
Event_Algorithm_Inhibit	BOOLEAN	O[5,6]
Time_Delay_Normal	Unsigned	O[5,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Current_Command_Priority	BACnetOptionalUnsigned	R
Value_Source	BACnetValueSource	O[7,9,11]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[8,10]
Last_Command_Time	BACnetTimeStamp	O[8,10]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[10]
Audit_Level	BACnetAuditLevel	O[12]
Auditable_Operations	BACnetAuditOperationFlags	O[12]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[12]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] These properties, when present, shall be writable when Out_Of_Service is TRUE.
[2] This property is required if the property Secured_Status is present.
[3] These properties are required if the object supports intrinsic reporting.
[4] Footnote removed.
[5] These properties shall be present only if the object supports intrinsic reporting.
[6] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[7] This property is required if the object supports the value source mechanism.
[8] These properties are required if the object supports the value source mechanism and is commandable.
[9] This property shall be present only if the object supports the value source mechanism.
[10] These properties shall be present only if the object supports the value source mechanism and is commandable.
[11] This property shall be writable as described in Clause 19.5.
[12] This property shall be present only if the device supports audit reporting.
[*x*] *These properties are required if the object supports the CHANGE_OF_STATE event algorithm.*
[*y*] *These properties are required if the object supports the FAULT_STATE fault algorithm.*

[Change Clause 12.27, p. 334]

12.27 Event Log Object Type

…
Logging may be enabled and disabled through the Enable property and at dates and times specified by the Start_Time and Stop_Time properties. Event Log enabling and disabling is recorded in the log buffer.

Event Log objects that support intrinsic reporting shall apply the BUFFER_READY event algorithm or first stage reporting of fault conditions or both. See Clause 12.1.8.

Event Log objects optionally support the BUFFER_READY event algorithm~~Event reporting (notification) may be provided~~ to facilitate automatic fetching of log records by processes on other devices such as fileservers. ~~Support is provided for algorithmic reporting; optionally, intrinsic reporting may be provided. Event Log objects that support intrinsic reporting shall apply the BUFFER_READY event algorithm.~~

~~In intrinsic reporting, when~~*When* the number of records specified by the Notification_Threshold property has been collected since the previous notification (or startup), a new *BUFFER_READY* notification is sent to all recipients enrolled in the respective Notification Class object.

In response to a notification, recipients may fetch all of the new log records. If a recipient needs to fetch all of the new log records, it should use the 'By Sequence Number' form of the ReadRange service request.

A missed notification may be detected by a recipient if the 'Current Notification' parameter received in the previous BUFFER_READY notification is different than the 'Previous Notification' parameter of the current BUFFER_READY notification. If the ReadRange-ACK response to the ReadRange request issued under these conditions has the FIRST_ITEM bit of the 'Result Flags' parameter set to TRUE, log records have probably been missed by this recipient.
…

Table 12-31. Properties of the Event Log Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Enable	BOOLEAN	W
Start_Time	BACnetDateTime	O[1, 2]
Stop_Time	BACnetDateTime	O[1, 2]
Stop_When_Full	BOOLEAN	R
Buffer_Size	Unsigned32	R
Log_Buffer	BACnetLIST of BACnetEventLogRecord	R
Record_Count	Unsigned32	W
Total_Record_Count	Unsigned32	R
Notification_Threshold	Unsigned32	O[~~3~~,5,*x*]
Records_Since_Notification	Unsigned32	O[~~3~~,5,*x*]
Last_Notify_Record	Unsigned32	O[~~3~~,5,*x*]
Notification_Class	Unsigned	O[3,5]
Event_Enable	BACnetEventTransitionBits	O[3,5]
Acked_Transitions	BACnetEventTransitionBits	O[3,5]
Notify_Type	BACnetNotifyType	O[3,5]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,5]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[5]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[5]

Event_Detection_Enable	BOOLEAN	O[3,5]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[5]
Event_Algorithm_Inhibit	BOOLEAN	O[5,6]
Reliability_Evaluation_Inhibit	BOOLEAN	O[7]
Audit_Level	BACnetAuditLevel	O[8]
Auditable_Operations	BACnetAuditOperationFlags	O[8]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If present, these properties are required to be writable.
[2] If one of these properties is present, then all shall be present.
[3] These properties are required if the object supports intrinsic reporting.
[4] Footnote removed.
[5] These properties shall be present only if the object supports intrinsic reporting.
[6] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[7] If this property is present, then the Reliability property shall be present.
[8] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the BUFFER_READY event algorithm.*

[Change Clause 12.28, p. 341]

12.28 Load Control Object Type

…

Load Control objects that support intrinsic reporting shall apply the CHANGE_OF_STATE event algorithm *or first stage reporting of fault conditions or both. See Clause 12.1.8*.

…

Table 12-32. Properties of the Load Control Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Present_Value	BACnetShedState	R
State_Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Requested_Shed_Level	BACnetShedLevel	W
Start_Time	BACnetDateTime	W
Shed_Duration	Unsigned	W
Duty_Window	Unsigned	W
Enable	BOOLEAN	W
Full_Duty_Baseline	REAL	O
Expected_Shed_Level	BACnetShedLevel	R
Actual_Shed_Level	BACnetShedLevel	R
Shed_Levels	BACnetARRAY[N] of Unsigned	W[1]
Shed_Level_Descriptions	BACnetARRAY[N] of CharacterString	R
Notification_Class	Unsigned	O[2,4]
Time_Delay	Unsigned	O[2,4,x]
Event_Enable	BACnetEventTransitionBits	O[2,4]
Acked_Transitions	BACnetEventTransitionBits	O[2,4]
Notify_Type	BACnetNotifyType	O[2,4]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[2,4]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[4]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[4]

Event_Detection_Enable	BOOLEAN	O[2,4]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[4]
Event_Algorithm_Inhibit	BOOLEAN	O[4,5]
Time_Delay_Normal	Unsigned	O[4,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O[6]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Value_Source	BACnetValueSource	O[7,8,9]
Audit_Level	BACnetAuditLevel	O[10]
Auditable_Operations	BACnetAuditOperationFlags	O[10]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] The elements of this array are required to be writable, although the array is not required to be resizable.
[2] These properties are required if the object supports intrinsic reporting.
[3] Footnote removed.
[4] These properties shall be present only if the object supports intrinsic reporting.
[5] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[6] If this property is present, then the Reliability property shall be present.
[7] This property is required if the object supports the value source mechanism.
[8] This property shall be present only if the object supports the value source mechanism.
[9] This property shall be writable as described in Clause 19.5.
[10] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_STATE event algorithm.*

[Change Clause 12.30, p. 356]

12.30 Trend Log Multiple Object Type

…
Logging may be enabled and disabled through the Enable property and at dates and times specified by the Start_Time and Stop_Time properties. The enabling and disabling of log record collection is recorded in the log buffer.

Trend Log Multiple objects that support intrinsic reporting shall apply the BUFFER_READY event algorithm or first stage reporting of fault conditions or both. See Clause 12.1.8.

Trend Log Multiple objects optionally support the BUFFER_READY event algorithm~~Event reporting (notification) may be provided~~ to facilitate automatic fetching of log records by processes on other devices such as fileservers. ~~Mechanisms for both algorithmic and intrinsic reporting are provided. Trend Log Multiple objects that support intrinsic reporting shall apply the BUFFER_READY event algorithm.~~

~~In intrinsic reporting, when~~*When* the number of log records specified by the Notification_Threshold property has been collected since the previous notification (or startup), a new *BUFFER_READY* notification is sent to all recipients enrolled in the respective Notification Class object.

In response to a notification, recipients may fetch all of the new log records. If a recipient needs to fetch all of the new log records, it should use the 'By Sequence Number' form of the ReadRange service request.

A missed notification may be detected by a recipient if the 'Current Notification' parameter received in the previous BUFFER_READY notification is different than the 'Previous Notification' parameter of the current BUFFER_READY notification. If the ReadRange-ACK response to the ReadRange request issued under these conditions has the FIRST_ITEM bit of the 'Result Flags' parameter set to TRUE, log records have probably been missed by this recipient.
…

Table 12-35. Properties of the Trend Log Multiple Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R

Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Enable	BOOLEAN	W
Start_Time	BACnetDateTime	O[1]
Stop_Time	BACnetDateTime	O[1]
Log_DeviceObjectProperty	BACnetARRAY[N] of BACnetDeviceObjectPropertyReference	R
Logging_Type	BACnetLoggingType	R
Log_Interval	Unsigned	R[2]
Align_Intervals	BOOLEAN	O[3]
Interval_Offset	Unsigned	O[3]
Trigger	BOOLEAN	O
Stop_When_Full	BOOLEAN	R
Buffer_Size	Unsigned32	R
Log_Buffer	BACnetLIST of BACnetLogMultipleRecord	R
Record_Count	Unsigned32	W
Total_Record_Count	Unsigned32	R
Notification_Threshold	Unsigned32	O[4,6,*x*]
Records_Since_Notification	Unsigned32	O[4,6,*x*]
Last_Notify_Record	Unsigned32	O[4,6,*x*]
Notification_Class	Unsigned	O[4,6]
Event_Enable	BACnetEventTransitionBits	O[4,6]
Acked_Transitions	BACnetEventTransitionBits	O[4,6]
Notify_Type	BACnetNotifyType	O[4,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[4,6]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Detection_Enable	BOOLEAN	O[4,6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,7]
Reliability_Evaluation_Inhibit	BOOLEAN	O[8]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Audit_Level	BACnetAuditLevel	O[9]
Auditable_Operations	BACnetAuditOperationFlags	O[9]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If present, these properties are required to be writable.
[2] This property is required to be writable when Logging_Type has the value POLLED and is required to be read-only when Logging_Type has the value TRIGGERED.
[3] These properties are required if, and shall be present only if, the object supports clock-aligned logging.
[4] These properties are required if the object supports intrinsic reporting.
[5] Footnote removed.
[6] These properties shall be present only if the object supports intrinsic reporting.
[7] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[8] If this property is present, then the Reliability property shall be present.
[9] This property shall be present only if the device supports audit reporting.
[*x*] *These properties are required if the object supports the BUFFER_READY event algorithm.*

[Change Clause 12.31, p. 365]

12.31 Access Point Object Type

…
Authentication and authorization begins when an access user presents an authentication factor at the access controlled point. The process this object represents consumes the authentication factors from the corresponding Credential Data Input objects

and performs the authentication and authorization functions. The result is to grant or deny access and to generate corresponding access events. If the object is out of service or not reliable, then these functions are not performed.

Access Point objects that support intrinsic reporting shall apply the ACCESS_EVENT event algorithm or first stage reporting of fault conditions or both. See Clause 12.1.8.

The Access Point object generates access events. Access events are stateless (i.e. NORMAL to NORMAL transitions only). A single access transaction, such as a request to enter or an operator action, can result in one or more access events. All access events that belong to the same access transaction have the same access event tag.

~~For intrinsic reporting, the~~*The* ACCESS_EVENT algorithm is applied for both Access Alarm Events and Access Transaction Events:

Access Alarm Events: These are events requiring operator attention and handling, and the Access Point object may request human operator acknowledgment of these events.

Access Transaction Events: These are events that are to be logged, not requiring immediate operator attention. The Access Point object does not request human operator acknowledgment of these events.

…

Table 12-36. Properties of the Access Point Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	R
Out_Of_Service	BOOLEAN	R
Authentication_Status	BACnetAuthenticationStatus	R
Active_Authentication_Policy	Unsigned	R
Number_Of_Authentication_Policies	Unsigned	R
Authentication_Policy_List	BACnetARRAY[N] of BACnetAuthenticationPolicy	O[1]
Authentication_Policy_Names	BACnetARRAY[N] of CharacterString	O[1]
Authorization_Mode	BACnetAuthorizationMode	R
Verification_Time	Unsigned	O
Lockout	BOOLEAN	O[2]
Lockout_Relinquish_Time	Unsigned	O
Failed_Attempts	Unsigned	O
Failed_Attempt_Events	BACnetLIST of BACnetAccessEvent	O
Max_Failed_Attempts	Unsigned	O[3]
Failed_Attempts_Time	Unsigned	O[3]
Threat_Level	BACnetAccessThreatLevel	O
Occupancy_Upper_Limit_Enforced	BOOLEAN	O
Occupancy_Lower_Limit_Enforced	BOOLEAN	O
Occupancy_Count_Adjust	BOOLEAN	O
Accompaniment_Time	Unsigned	O
Access_Event	BACnetAccessEvent	R
Access_Event_Tag	Unsigned	R
Access_Event_Time	BACnetTimeStamp	R
Access_Event_Credential	BACnetDeviceObjectReference	R
Access_Event_Authentication_Factor	BACnetAuthenticationFactor	O
Access_Doors	BACnetARRAY[N] of BACnetDeviceObjectReference	R
Priority_For_Writing	Unsigned (1..16)	R
Muster_Point	BOOLEAN	O
Zone_To	BACnetDeviceObjectReference	O

Zone_From	BACnetDeviceObjectReference	O
Notification_Class	Unsigned	O[4,6]
Transaction_Notification_Class	Unsigned	O
Access_Alarm_Events	BACnetLIST of BACnetAccessEvent	O[4,6,x]
Access_Transaction_Events	BACnetLIST of BACnetAccessEvent	O[4,6,x]
Event_Enable	BACnetEventTransitionBits	O[4,6]
Acked_Transitions	BACnetEventTransitionBits	O[4,6]
Notify_Type	BACnetNotifyType	O[4,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[4,6]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Detection_Enable	BOOLEAN	O[4,6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,7]
Reliability_Evaluation_Inhibit	BOOLEAN	O
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Audit_Level	BACnetAuditLevel	O[8]
Auditable_Operations	BACnetAuditOperationFlags	O[8]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] The size of this array shall equal the value of the Number_Of_Authentication_Policies property.
[2] This property is required to be present if Lockout_Relinquish_Time is present.
[3] If this property is present, then the Failed_Attempts property shall be present.
[4] These properties are required if the object supports intrinsic reporting.
[5] Footnote removed.
[6] These properties shall be present only if the object supports intrinsic reporting.
[7] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[8] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the ACCESS_EVENT event algorithm.*

[Change Clause 12.32, p. 382]

12.32 Access Zone Object Type

…
The Access Zone object may optionally support occupancy counting and the specification of occupancy limits. Access may be denied if limits are violated. The enforcement rules are specified at the corresponding entry and/or exit Access Point objects. The Access Zone object's Occupancy_State is the state of occupancy. This state is derived from the actual occupancy count and occupancy limits.

Access_Zone objects that support intrinsic reporting shall apply the CHANGE_OF_STATE event algorithm or first stage reporting of fault conditions or both. See Clause 12.1.8.

The CHANGE_OF_STATE event algorithm is applied to ~~Intrinsic reporting of this object is based on~~ the Occupancy_State property ~~and uses the CHANGE_OF_STATE algorithm~~.

"Who's in" reporting is supported through a list of the credentials which are currently in the zone. Credentials are added on successful entrance through an access controlled entry point and removed on successful exit through an access controlled exit point. This list may also be maintained based on time conditions or other local methods.
…

Table 12-37. Properties of the Access Zone Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O

Global_Identifier	Unsigned32	W
Occupancy_State	BACnetAccessZoneOccupancyState	R
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	R[1]
Out_Of_Service	BOOLEAN	R
Occupancy_Count	Unsigned	O[1,3,4]
Occupancy_Count_Enable	BOOLEAN	O[3,4]
Adjust_Value	INTEGER	O[3,4,5]
Occupancy_Upper_Limit	Unsigned	O
Occupancy_Lower_Limit	Unsigned	O
Credentials_In_Zone	BACnetLIST of BACnetDeviceObjectReference	O
Last_Credential_Added	BACnetDeviceObjectReference	O
Last_Credential_Added_Time	BACnetDateTime	O
Last_Credential_Removed	BACnetDeviceObjectReference	O
Last_Credential_Removed_Time	BACnetDateTime	O
Passback_Mode	BACnetAccessPassbackMode	O
Passback_Timeout	Unsigned	O[2]
Entry_Points	BACnetLIST of BACnetDeviceObjectReference	R
Exit_Points	BACnetLIST of BACnetDeviceObjectReference	R
Time_Delay	Unsigned	O[~~3~~,7,*x*]
Notification_Class	Unsigned	O[3,7]
Alarm_Values	BACnetLIST of BACnetAccessZoneOccupancyState	O[~~3~~,7,*x*]
Event_Enable	BACnetEventTransitionBits	O[3,7]
Acked_Transitions	BACnetEventTransitionBits	O[3,7]
Notify_Type	BACnetNotifyType	O[3,7]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,7]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[7]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[7]
Event_Detection_Enable	BOOLEAN	O[3,7]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[7]
Event_Algorithm_Inhibit	BOOLEAN	O[7,8]
Time_Delay_Normal	Unsigned	O[7,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Audit_Level	BACnetAuditLevel	O[9]
Auditable_Operations	BACnetAuditOperationFlags	O[9]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] These properties, if present, shall be writable when Out_Of_Service is TRUE.
[2] If this property is present, then Passback_Mode shall be present.
[3] These properties are required if the object supports intrinsic reporting.
[4] These properties are required if, and shall be present only if, the object supports occupancy counting.
[5] The Adjust_Value property shall be writable if present.
[6] Footnote removed.
[7] These properties shall be present only if the object supports intrinsic reporting.
[8] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[9] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_STATE event algorithm.*

[Change Clause 12.36, p. 409]

12.36 Credential Data Input Object Type

…

Credential Data Input objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8*.~~Credential Data Input objects that support intrinsic reporting shall apply the NONE event algorithm~~.

…

[Change Clause 12.37, p. 415]

12.37 CharacterString Value Object Type

…

CharacterString Value objects that support intrinsic reporting shall apply the CHANGE_OF_CHARACTERSTRING event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_CHARACTERSTRING fault algorithm *shall*~~can~~ be applied. *See Clause 12.1.8.*

…

Table 12-44. Properties of the CharacterString Value Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Present_Value	CharacterString	R[1]
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	O[3]
Reliability	BACnetReliability	O[*y*]
Out_Of_Service	BOOLEAN	O
Priority_Array	BACnetPriorityArray	O[2]
Relinquish_Default	CharacterString	O[2]
Time_Delay	Unsigned	O[~~3~~,5,*x*]
Notification_Class	Unsigned	O[~~3~~,5]
Alarm_Values	BACnetARRAY[N] of BACnetOptionalCharacterString	O[3,5,*x*]
Fault_Values	BACnetARRAY[N] of BACnetOptionalCharacterString	O[7,*y*]
Event_Enable	BACnetEventTransitionBits	O[3,5]
Acked_Transitions	BACnetEventTransitionBits	O[3,5]
Notify_Type	BACnetNotifyType	O[3,5]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,5]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[5]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[5]
Event_Detection_Enable	BOOLEAN	O[3,5]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[5]
Event_Algorithm_Inhibit	BOOLEAN	O[5,6]
Time_Delay_Normal	Unsigned	O[5,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O[7]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Current_Command_Priority	BACnetOptionalUnsigned	O[2]
Value_Source	BACnetValueSource	O[8,10,12]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[9,11]
Last_Command_Time	BACnetTimeStamp	O[9,11]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[11]
Audit_Level	BACnetAuditLevel	O[13]
Auditable_Operations	BACnetAuditOperationFlags	O[13]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[13]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If Present_Value is commandable, then it is required to be writable. This property is required to be writable when Out_Of_Service is TRUE.

[2] These properties are required if, and shall be present only if, Present_Value is commandable.

[3] These properties are required if the object supports intrinsic reporting.
[4] Footnote removed.
[5] These properties shall be present only if the object supports intrinsic reporting.
[6] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[7] If this property is present, then the Reliability property shall be present.
[8] This property is required if the object supports the value source mechanism.
[9] These properties are required if the object supports the value source mechanism and is commandable.
[10] This property shall be present only if the object supports the value source mechanism.
[11] These properties shall be present only if the object supports the value source mechanism and is commandable.
[12] This property shall be writable as described in Clause 19.5.
[13] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_CHARACTERSTRING event algorithm.*
[y] *These properties are required if the object supports the FAULT_CHARACTERSTRING fault algorithm.*

[Change Clause 12.38, p. 422]

12.38 DateTime Value Object Type

…
DateTime Value objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.* ~~DateTime Value objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.39, p. 428]

12.39 Large Analog Value Object Type

…
Large Analog Value objects that support intrinsic reporting shall apply the DOUBLE_OUT_OF_RANGE event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_OUT_OF_RANGE fault algorithm *shall*~~may~~ be applied. *See Clause 12.1.8.*
…

Table 12-46. Properties of the Large Analog Value Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Present_Value	Double	R[1]
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	O[4]
Reliability	BACnetReliability	O[9]
Out_Of_Service	BOOLEAN	O
Units	BACnetEngineeringUnits	R
Priority_Array	BACnetPriorityArray	O[2]
Relinquish_Default	Double	O[2]
COV_Increment	Double	O[3]
Time_Delay	Unsigned	O[4,6,x]
Notification_Class	Unsigned	O[4,6]
High_Limit	Double	O[4,6,x]
Low_Limit	Double	O[4,6,x]
Deadband	Double	O[4,6,x]
Limit_Enable	BACnetLimitEnable	O[4,6,x]
Event_Enable	BACnetEventTransitionBits	O[4,6]

Acked_Transitions	BACnetEventTransitionBits	O[4,6]
Notify_Type	BACnetNotifyType	O[4,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[4,6]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Detection_Enable	BOOLEAN	O[4,6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,7]
Time_Delay_Normal	Unsigned	O[6,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O[8]
Min_Pres_Value	Double	O
Max_Pres_Value	Double	O
Resolution	Double	O
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Fault_High_Limit	Double	O[9]
Fault_Low_Limit	Double	O[9]
Current_Command_Priority	BACnetOptionalUnsigned	O[2]
Value_Source	BACnetValueSource	O[10,12,14]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[11,13]
Last_Command_Time	BACnetTimeStamp	O[11,13]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[13]
Audit_Level	BACnetAuditLevel	O[15]
Auditable_Operations	BACnetAuditOperationFlags	O[15]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[15]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If Present_Value is commandable, then it is required to be writable. This property is required to be writable when Out_Of_Service is TRUE.
[2] These properties are required if, and shall be present only if, Present_Value is commandable.
[3] This property is required if, and shall be present only if, the object supports COV reporting for the Present_Value property.
[4] These properties are required if the object supports intrinsic reporting.
[5] Footnote removed.
[6] These properties shall be present only if the object supports intrinsic reporting.
[7] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[8] If this property is present, then the Reliability property shall be present.
[9] These properties are required if the object supports the FAULT_OUT_OF_RANGE fault algorithm.
[10] This property is required if the object supports the value source mechanism.
[11] These properties are required if the object supports the value source mechanism and is commandable.
[12] This property shall be present only if the object supports the value source mechanism.
[13] These properties shall be present only if the object supports the value source mechanism and is commandable.
[14] This property shall be writable as described in Clause 19.5.
[15] This property shall be present only if the device supports audit reporting.
[*x*] *These properties are required if the object supports the OUT_OF_RANGE event algorithm.*

[Change Clause 12.40, p. 435]

12.40 BitString Value Object Type

…
BitString Value objects that support intrinsic reporting shall apply the CHANGE_OF_BITSTRING event algorithm *or first stage reporting of fault conditions or both. See Clause 12.1.8*.
…

Table 12-47. Properties of the BitString Value Object Type

Property Identifier	Property Datatype	Conformance Code

Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Present_Value	BIT STRING	R[1]
Bit_Text	BACnetARRAY[N] of CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	O[3]
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	O
Priority_Array	BACnetPriorityArray	O[2]
Relinquish_Default	BIT STRING	O[2]
Time_Delay	Unsigned	O[~~3~~,5,*x*]
Notification_Class	Unsigned	O[3,5]
Alarm_Values	BACnetARRAY[N] of BIT STRING	O[~~3~~,5,*x*]
Bit_Mask	BIT STRING	O[3,5]
Event_Enable	BACnetEventTransitionBits	O[3,5]
Acked_Transitions	BACnetEventTransitionBits	O[3,5]
Notify_Type	BACnetNotifyType	O[3,5]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,5]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[5]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[5]
Event_Detection_Enable	BOOLEAN	O[3,5]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[5]
Event_Algorithm_Inhibit	BOOLEAN	O[5,6]
Time_Delay_Normal	Unsigned	O[5,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O[7]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Current_Command_Priority	BACnetOptionalUnsigned	O[2]
Value_Source	BACnetValueSource	O
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O
Last_Command_Time	BACnetTimeStamp	O
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O
Audit_Level	BACnetAuditLevel	O[13]
Auditable_Operations	BACnetAuditOperationFlags	O[13]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[13]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] This property is required to be writable when Out_Of_Service is TRUE.
[2] These properties are required if, and shall be present only if, Present_Value is commandable.
[3] These properties are required if the object supports intrinsic reporting.
[4] Footnote removed.
[5] These properties shall be present only if the object supports intrinsic reporting.
[6] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[7] If this property is present, then the Reliability property shall be present.
[8] This property is required if the object supports the value source mechanism.
[9] These properties are required if the object supports the value source mechanism and is commandable.
[10] This property shall be present only if the object supports the value source mechanism.
[11] These properties shall be present only if the object supports the value source mechanism and is commandable.
[12] This property shall be writable as described in Clause 19.5.
[13] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_BITSTRING event algorithm.*

[Change Clause 12.42, p. 445]

12.42 Time Value Object Type

…
Time Value objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Time Value objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.43, p. 451]

12.43 Integer Value Object Type

…
Integer Value objects that support intrinsic reporting shall apply the SIGNED_OUT_OF_RANGE event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_OUT_OF_RANGE fault algorithm *shall* ~~may~~ be applied. *See Clause 12.1.8.*
…

Table 12-50. Properties of the Integer Value Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Present_Value	INTEGER	R[1]
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	O[4]
Reliability	BACnetReliability	O[9]
Out_Of_Service	BOOLEAN	O
Units	BACnetEngineeringUnits	R
Priority_Array	BACnetPriorityArray	O[2]
Relinquish_Default	INTEGER	O[2]
COV_Increment	Unsigned	O[3]
Time_Delay	Unsigned	O[4,6,x]
Notification_Class	Unsigned	O[4,6]
High_Limit	INTEGER	O[4,6,x]
Low_Limit	INTEGER	O[4,6,x]
Deadband	Unsigned	O[4,6,x]
Limit_Enable	BACnetLimitEnable	O[4,6,x]
Event_Enable	BACnetEventTransitionBits	O[4,6]
Acked_Transitions	BACnetEventTransitionBits	O[4,6]
Notify_Type	BACnetNotifyType	O[4,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[4,6]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Detection_Enable	BOOLEAN	O[4,6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,7]
Time_Delay_Normal	Unsigned	O[6,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O[8]
Min_Pres_Value	INTEGER	O
Max_Pres_Value	INTEGER	O
Resolution	INTEGER	O
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Fault_High_Limit	INTEGER	O[9]
Fault_Low_Limit	INTEGER	O[9]
Current_Command_Priority	BACnetOptionalUnsigned	O[2]

Value_Source	BACnetValueSource	O[10,12,14]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[11,13]
Last_Command_Time	BACnetTimeStamp	O[11,13]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[13]
Audit_Level	BACnetAuditLevel	O[15]
Auditable_Operations	BACnetAuditOperationFlags	O[15]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[15]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If Present_Value is commandable, then it is required to be writable. This property is required to be writable when Out_Of_Service is TRUE.
[2] These properties are required if, and shall be present only if, Present_Value is commandable.
[3] This property is required if, and shall be present only if, the object supports COV reporting for the Present_Value property.
[4] These properties are required if the object supports intrinsic reporting.
[5] Footnote removed.
[6] These properties shall be present only if the object supports intrinsic reporting.
[7] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[8] If this property is present, then the Reliability property shall be present.
[9] These properties are required if the object supports the FAULT_OUT_OF_RANGE fault algorithm.
[10] This property is required if the object supports the value source mechanism.
[11] These properties are required if the object supports the value source mechanism and is commandable.
[12] This property shall be present only if the object supports the value source mechanism.
[13] These properties shall be present only if the object supports the value source mechanism and is commandable.
[14] This property shall be writable as described in Clause 19.5.
[15] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the SIGNED_OUT_OF_RANGE event algorithm.*

[Change Clause 12.44, p. 458]

12.44 Positive Integer Value Object Type

…
Positive Integer Value objects that support intrinsic reporting shall apply the UNSIGNED_OUT_OF_RANGE event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_OUT_OF_RANGE fault algorithm *shall* ~~may~~ be applied. *See Clause 12.1.8.*
…

Table 12-51. Properties of the Positive Integer Value Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Present_Value	Unsigned	R[1]
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	O[4]
Reliability	BACnetReliability	O[9]
Out_Of_Service	BOOLEAN	O
Units	BACnetEngineeringUnits	R
Priority_Array	BACnetPriorityArray	O[2]
Relinquish_Default	Unsigned	O[2]
COV_Increment	Unsigned	O[3]
Time_Delay	Unsigned	O[~~4~~,6,*x*]
Notification_Class	Unsigned	O[4,6]
High_Limit	Unsigned	O[~~4~~,6,*x*]

Low_Limit	Unsigned	O[4,6,x]
Deadband	Unsigned	O[4,6,x]
Limit_Enable	BACnetLimitEnable	O[4,6,x]
Event_Enable	BACnetEventTransitionBits	O[4,6]
Acked_Transitions	BACnetEventTransitionBits	O[4,6]
Notify_Type	BACnetNotifyType	O[4,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[4,6]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Detection_Enable	BOOLEAN	O[4,6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,7]
Time_Delay_Normal	Unsigned	O[6,x]
Reliability_Evaluation_Inhibit	BOOLEAN	O[8]
Min_Pres_Value	Unsigned	O
Max_Pres_Value	Unsigned	O
Resolution	Unsigned	O
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Fault_High_Limit	Unsigned	O[9]
Fault_Low_Limit	Unsigned	O[9]
Current_Command_Priority	BACnetOptionalUnsigned	O[2]
Value_Source	BACnetValueSource	O[10,12,14]
Value_Source_Array	BACnetARRAY[16] of BACnetValueSource	O[11,13]
Last_Command_Time	BACnetTimeStamp	O[11,13]
Command_Time_Array	BACnetARRAY[16] of BACnetTimeStamp	O[13]
Audit_Level	BACnetAuditLevel	O[15]
Auditable_Operations	BACnetAuditOperationFlags	O[15]
Audit_Priority_Filter	BACnetOptionalPriorityFilter	O[15]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] If Present_Value is commandable, then it is required to be writable. This property is required to be writable when Out_Of_Service is TRUE.
[2] These properties are required if, and shall be present only if, Present_Value is commandable.
[3] This property is required if, and shall be present only if, the object supports COV reporting for the Present_Value property.
[4] These properties are required if the object supports intrinsic reporting.
[5] Footnote removed.
[6] These properties shall be present only if the object supports intrinsic reporting.
[7] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[8] If this property is present, then the Reliability property shall be present.
[9] These properties are required if the object supports the FAULT_OUT_OF_RANGE fault algorithm.
[10] This property is required if the object supports the value source mechanism.
[11] These properties are required if the object supports the value source mechanism and is commandable.
[12] This property shall be present only if the object supports the value source mechanism.
[13] These properties shall be present only if the object supports the value source mechanism and is commandable.
[14] This property shall be writable as described in Clause 19.5.
[15] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the SIGNED_OUT_OF_RANGE event algorithm.*

[Change Clause 12.45, p. 465]

12.45 Date Value Object Type

…

Date Value objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Date Value objects that support intrinsic reporting shall apply the NONE event algorithm~~.
…

[Change Clause 12.46, p. 471]

12.46 DateTime Pattern Value Object Type

…
DateTime Pattern Value objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~DateTime Pattern Value objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.47, p. 477]

12.47 Time Pattern Value Object Type

…
Time Pattern Value objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Time Pattern Value objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.48, p. 483]

12.48 Date Pattern Value Object Type

…
Date Pattern Value objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Date Pattern Value objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.50, p. 490]

12.50 Global Group Object Type

…
Global Group objects that support intrinsic reporting shall apply the CHANGE_OF_STATUS_FLAGS event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_STATUS_FLAGS fault algorithm shall be applied. *See Clause 12.1.8.*
…

Table 12-57. Properties of the Global Group Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Group_Members	BACnetARRAY[N] of BACnetDeviceObjectPropertyReference	R
Group_Member_Names	BACnetARRAY[N] of CharacterString	O
Present_Value	BACnetARRAY[N] of BACnetPropertyAccessResult	R
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Member_Status_Flags	BACnetStatusFlags	R
Reliability	BACnetReliability	O
Out_of_Service	BOOLEAN	R

Update_Interval	Unsigned	O
Requested_Update_Interval	Unsigned	O
COV_Resubscription_Interval	Unsigned	O
Client_COV_Increment	BACnetClientCOV	O
Time_Delay	Unsigned	O[1,4,x]
Notification_Class	Unsigned	O[1,4]
Event_Enable	BACnetEventTransitionBits	O[1,4]
Acked_Transitions	BACnetEventTransitionBits	O[1,4]
Notify_Type	BACnetNotifyType	O[1,4]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[1,4]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[4]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[4]
Event_Detection_Enable	BOOLEAN	O[1,4]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[4]
Event_Algorithm_Inhibit	BOOLEAN	O[4,5]
Time_Delay_Normal	Unsigned	O[4,x]
COVU_Period	Unsigned	O[2]
COVU_Recipients	BACnetLIST of BACnetRecipient	O[2]
Reliability_Evaluation_Inhibit	BOOLEAN	O[6]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Audit_Level	BACnetAuditLevel	O[7]
Auditable_Operations	BACnetAuditOperationFlags	O[7]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] These properties are required if the object supports intrinsic reporting.
[2] These properties are required if the object sends periodic unsubscribed COV notifications for Present_Value. These properties are required to be writable if present.
[3] Footnote removed.
[4] These properties shall be present only if the object supports intrinsic reporting.
[5] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[6] If this property is present, then the Reliability property shall be present.
[7] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_STATUS_FLAGS event algorithm.*

[Change Clause 12.53, p. 509]

12.53 Channel Object Type

…
Channel objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Channel objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.54, p. 509]

12.54 Lighting Output Object Type

…
Lighting Output objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Lighting Output objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.55, p. 509]

12.55 Binary Lighting Output Object Type

…
Binary Lighting Outputs may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Binary Lighting Output objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.56, p. 509]

12.56 Network Port Object Type

…
Network Port objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Network Port objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.57, p. 566]

12.57 Timer Object Type

…
Timer objects that support intrinsic reporting shall apply the CHANGE_OF_TIMER event algorithm *or first stage reporting of fault conditions or both. See Clause 12.1.8.*
…

Table 12-75. Properties of the Timer Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Present_Value	Unsigned	R[1]
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	O[3]
Reliability	BACnetReliability	O[1]
Out_Of_Service	BOOLEAN	O
Timer_State	BACnetTimerState	R[2]
Timer_Running	BOOLEAN	R[2]
Update_Time	BACnetDateTime	O[3]
Last_State_Change	BACnetTimerTransition	O
Expiration_Time	BACnetDateTime	O
Initial_Timeout	Unsigned	O
Default_Timeout	Unsigned	O
Min_Pres_Value	Unsigned	O[4]
Max_Pres_Value	Unsigned	O[4]
Resolution	Unsigned	O
State_Change_Values	BACnetARRAY[7] of BACnetTimerStateChangeValue	O[5]
List_Of_Object_Property_References	BACnetLIST of BACnetDeviceObjectPropertyReference	O[5]
Priority_For_Writing	Unsigned(1..16)	O[5]
Event_Detection_Enable	BOOLEAN	O[3,6]
Notification_Class	Unsigned	O[3,6]
Time_Delay	Unsigned	O[~~3~~,6,*x*]
Time_Delay_Normal	Unsigned	O[~~3~~,6,*x*]
Alarm_Values	BACnetLIST of BACnetTimerState	O[~~3~~,6,*x*]
Event_Enable	BACnetEventTransitionBits	O[3,6]
Acked_Transitions	BACnetEventTransitionBits	O[3,6]
Notify_Type	BACnetNotifyType	O[3,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[3,6]

Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,7]
Reliability_Evaluation_Inhibit	BOOLEAN	O[8]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Audit_Level	BACnetAuditLevel	O[9]
Auditable_Operations	BACnetAuditOperationFlags	O[9]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] These properties are required to be writable when Out_Of_Service is TRUE.
[2] If Present_Value is writable when Out_Of_Service is FALSE, then these properties shall be writable.
[3] These properties are required if the object supports intrinsic reporting.
[4] If Present_Value is writable when Out_Of_Service is FALSE, then these properties are required to be present.
[5] If one of these properties is present, then all of these properties shall be present.
[6] These properties shall be present only if the object supports intrinsic reporting.
[7] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[8] If this property is present, then the Reliability property shall be present.
[9] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_TIMER event algorithm.*

[Change Clause 12.59, p. 582]

12.59 Lift Object Type

…
Lift objects that support intrinsic reporting shall apply the CHANGE_OF_STATE event algorithm *or first stage reporting of fault conditions or both.* ~~on the Passenger_Alarm property. The pAlarmValues parameter shall contain the value TRUE~~. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_LISTED fault algorithm *shall* ~~can~~ be applied. *See Clause 12.1.8.*

The CHANGE_OF_STATE event algorithm is applied to the Passenger_Alarm property and the pAlarmValues parameter shall contain the value TRUE.
…

Table 12-77. Properties of the Lift Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Elevator_Group	BACnetObjectIdentifier	R
Group_ID	Unsigned8	R
Installation_ID	Unsigned8	R
Floor_Text	BACnetARRAY[N] of CharacterString	O
Car_Door_Text	BACnetARRAY[N] of CharacterString	O
Assigned_Landing_Calls	BACnetARRAY[N] of BACnetAssignedLandingCalls	O
Making_Car_Call	BACnetARRAY[N] of Unsigned8	O
Registered_Car_Call	BACnetARRAY[N] of BACnetLiftCarCallList	O
Car_Position	Unsigned8	R
Car_Moving_Direction	BACnetLiftCarDirection	R
Car_Assigned_Direction	BACnetLiftCarDirection	O
Car_Door_Status	BACnetARRAY[N] of BACnetDoorStatus	R
Car_Door_Command	BACnetARRAY[N] of BACnetLiftCarDoorCommand	O
Car_Door_Zone	BOOLEAN	O

Car_Mode	BACnetLiftCarMode	O
Car_Load	REAL	O
Car_Load_Units	BACnetEngineeringUnits	O[1]
Next_Stopping_Floor	Unsigned8	O
Passenger_Alarm	BOOLEAN	R
Time_Delay	Unsigned	O[~~2~~,3,*x*]
Time_Delay_Normal	Unsigned	O[3,*x*]
Energy_Meter	REAL	O
Energy_Meter_Ref	BACnetDeviceObjectReference	O
Reliability	BACnetReliability	O[*y*]
Out_Of_Service	BOOLEAN	R
Car_Drive_Status	BACnetLiftCarDriveStatus	O
Fault_Signals	BACnetLIST of BACnetLiftFault	R
Landing_Door_Status	BACnetARRAY[N] of BACnetLandingDoorStatus	O
Higher_Deck	BACnetObjectIdentifier	O
Lower_Deck	BACnetObjectIdentifier	O
Event_Detection_Enable	BOOLEAN	O[2,3]
Notification_Class	Unsigned	O[2,3]
Event_Enable	BACnetEventTransitionBits	O[2,3]
Event_State	BACnetEventState	O[2,3]
Acked_Transitions	BACnetEventTransitionBits	O[2,3]
Notify_Type	BACnetNotifyType	O[2,3]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[2,3]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[3]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[3]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[3]
Event_Algorithm_Inhibit	BOOLEAN	O[3,4]
Reliability_Evaluation_Inhibit	BOOLEAN	O[5]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Audit_Level	BACnetAuditLevel	O[6]
Auditable_Operations	BACnetAuditOperationFlags	O[6]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] Car_Load_Units shall be present if, and only if, Car_Load is present
[2] These properties are required if the object supports intrinsic reporting.
[3] These properties shall be present only if the object supports intrinsic reporting.
[4] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[5] If this property is present, then the Reliability property shall be present.
[6] This property shall be present only if the device supports audit reporting.
[*x*] *These properties are required if the object supports the CHANGE_OF_STATE event algorithm.*
[*y*] *These properties are required if the object supports the FAULT_LISTED fault algorithm.*

[Change Clause 12.60, p. 594]

12.60 Escalator Object Type

…
Escalator objects that support intrinsic reporting shall apply the CHANGE_OF_STATE event algorithm *or first stage reporting of fault conditions or both.* ~~on the Passenger_Alarm property. The pAlarmValues parameter shall contain the value TRUE~~. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_LISTED fault algorithm *shall* ~~can~~ be applied. *See Clause 12.1.8.*

The CHANGE_OF_STATE event algorithm is applied to the Passenger_Alarm property and the pAlarmValues parameter shall contain the value TRUE.
…

Table 12-78. Properties of the Escalator Object Type

Property Identifier	Property Datatype	Conformance Code

Object_Identifier	BACnetObjectIdentifier	R
Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Description	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Elevator_Group	BACnetObjectIdentifier	R
Group_ID	Unsigned8	R
Installation_ID	Unsigned8	R
Power_Mode	BOOLEAN	O
Operation_Direction	BACnetEscalatorOperationDirection	R
Escalator_Mode	BACnetEscalatorMode	O
Energy_Meter	REAL	O
Energy_Meter_Ref	BACnetDeviceObjectReference	O
Reliability	BACnetReliability	O[y]
Out_Of_Service	BOOLEAN	R
Fault_Signals	BACnetLIST of BACnetEscalatorFault	O[y]
Passenger_Alarm	BOOLEAN	R
Time_Delay	Unsigned	O[1,2,x]
Time_Delay_Normal	Unsigned	O[2,x]
Event_Detection_Enable	BOOLEAN	O[1,2]
Notification_Class	Unsigned	O[1,2]
Event_Enable	BACnetEventTransitionBits	O[1,2]
Event_State	BACnetEventState	O[1,2]
Acked_Transitions	BACnetEventTransitionBits	O[1,2]
Notify_Type	BACnetNotifyType	O[1,2]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[1,2]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[2]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[2]
Event_Algorithm_Inhibit	BOOLEAN	O[2,3]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[2]
Reliability_Evaluation_Inhibit	BOOLEAN	O[4]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Audit_Level	BACnetAuditLevel	O[5]
Auditable_Operations	BACnetAuditOperationFlags	O[5]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] These properties are required if the object supports intrinsic reporting.
[2] These properties shall be present only if the object supports intrinsic reporting.
[3] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[4] If this property is present, then the Reliability property shall be present.
[5] This property shall be present only if the device supports audit reporting.
[x] *These properties are required if the object supports the CHANGE_OF_STATE event algorithm.*
[y] *These properties are required if the object supports the FAULT_LISTED fault algorithm.*

[Change Clause 12.61, p. 601]

12.61 Accumulator Object Type

…
Accumulator objects that support intrinsic reporting shall apply the UNSIGNED_RANGE event algorithm *or first stage reporting of fault conditions or both*. ~~For~~ *If second stage* reliability-evaluation *is supported*, the FAULT_OUT_OF_RANGE fault algorithm *shall* ~~may~~ be applied. *See Clause 12.1.8.*
…

Table 12-79. Properties of the Accumulator Object Type

Property Identifier	Property Datatype	Conformance Code
Object_Identifier	BACnetObjectIdentifier	R

Object_Name	CharacterString	R
Object_Type	BACnetObjectType	R
Present_Value	Unsigned	R[1]
Description	CharacterString	O
Device_Type	CharacterString	O
Status_Flags	BACnetStatusFlags	R
Event_State	BACnetEventState	R
Reliability	BACnetReliability	O
Out_Of_Service	BOOLEAN	R
Scale	BACnetScale	R
Units	BACnetEngineeringUnits	R
Prescale	BACnetPrescale	O
Max_Pres_Value	Unsigned	R
Value_Change_Time	BACnetDateTime	O[2]
Value_Before_Change	Unsigned	O[2,3]
Value_Set	Unsigned	O[2,3]
Logging_Record	BACnetAccumulatorRecord	O
Logging_Object	BACnetObjectIdentifier	O
Pulse_Rate	Unsigned	O[1,~~4~~,~~7~~,*10,x*]
High_Limit	Unsigned	O[~~4~~,6,*x*]
Low_Limit	Unsigned	O[~~4~~,6,*x*]
Limit_Monitoring_Interval	Unsigned	O[~~4~~,~~7~~,*10,x*]
Notification_Class	Unsigned	O[4,6]
Time_Delay	Unsigned	O[~~4~~,6,*x*]
Limit_Enable	BACnetLimitEnable	O[~~4~~,6,*x*]
Event_Enable	BACnetEventTransitionBits	O[4,6]
Acked_Transitions	BACnetEventTransitionBits	O[4,6]
Notify_Type	BACnetNotifyType	O[4,6]
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O[4,6]
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O[6]
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O[6]
Event_Detection_Enable	BOOLEAN	O[4,6]
Event_Algorithm_Inhibit_Ref	BACnetObjectPropertyReference	O[6]
Event_Algorithm_Inhibit	BOOLEAN	O[6,8]
Time_Delay_Normal	Unsigned	O[6,*x*]
Reliability_Evaluation_Inhibit	BOOLEAN	O[9]
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Fault_High_Limit	Unsigned	O[10]
Fault_Low_Limit	Unsigned	O[10]
Audit_Level	BACnetAuditLevel	O[11]
Auditable_Operations	BACnetAuditOperationFlags	O[11]
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] This property is required to be writable when Out_Of_Service is TRUE.
[2] These properties are required if either Value_Before_Change or Value_Set is writable.
[3] Either Value_Before_Change or Value_Set may be writable, but not both.
[4] These properties are required if the object supports intrinsic reporting.
[5] Footnote removed.
[6] These properties shall be present only if the object supports intrinsic reporting.
[7] If one of these properties is present, then both shall be present.
[8] Event_Algorithm_Inhibit shall be present if Event_Algorithm_Inhibit_Ref is present.
[9] If this property is present, then the Reliability property shall be present.
[10] These properties are required if the object supports the FAULT_OUT_OF_RANGE fault algorithm.
[11] This property shall be present only if the device supports audit reporting.
[*x*] *These properties are required if the object supports the UNSIGNED_RANGE event algorithm.*

[Change Clause 12.62, p. 611]

12.62 Staging Object Type

…
Staging objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Staging objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 12.63, p. 619]

12.63 Audit Reporter Object Type

…
Audit Reporter objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Audit Reporter objects that support intrinsic reporting shall apply the NONE event algorithm.~~
~~…~~

[Change Clause 12.64, p. 624]

12.64 Audit Log Object Type

…
Audit Log objects may optionally support intrinsic reporting to facilitate ~~the~~ *first stage* reporting of fault conditions. *See Clause 12.1.8.*~~Audit Log objects that support intrinsic reporting shall apply the NONE event algorithm.~~
…

[Change Clause 13.3.17, p. 673]

13.3.17 NONE Event Algorithm

This event algorithm has no parameters, no conditions, and does not indicate any transitions of event state.

~~The NONE algorithm is used when only fault detection is in use by an object.~~