BACnet *Errata*
ANSI/ASHRAE STANDARD 135-2008
A Data Communication Protocol for Building Automation and Control Networks

October 25, 2010

This document lists all known ***errata*** to ANSI/ASHRAE 135-2008 as of the above date. Each entry is cited first by clause, then page number, except where an erratum covers more than one clause. The outside back cover marking identifying the first printing of Standard 135-2008 is "Product Code: 86441 12/05". Items 79) through 85) have been added since the previously published errata sheet dated July 20, 2010 was distributed.

1) Clause 21, p.468. The position of the pulse-rate enumeration value in BACnetPropertyIdentifier is incorrect. The changes that should be made are shown below (*italic* for added text, ~~strikeout~~ for deleted):

21 FORMAL DESCRIPTION OF APPLICATION PROTOCOL DATA UNITS

…
BACnetPropertyIdentifier ::= ENUMERATED {
    accepted-modes (175),
    ...
    priority (86),
~~   pulse-rate (186),~~
    priority-array (87),
    …
    protocol-version (98),
    pulse-rate (186),
    read-only (99),
    ...
    }

2) Clause 13.5.2, p.307. The language was unclear about the value of the timestamp for acknowledgement messages. It was determined from studying other parts of the standard that the correct timestamp is the time at which the acknowledgement message is generated. A clarifying sentence is added as shown:

13.5.2 Service Procedure

After verifying the validity of the request, the responding BACnet-user shall attempt to locate the specified object. If the object exists and if the 'Time Stamp' parameter matches the most recent time for the event being acknowledged, then the bit in the Acked_Transitions property of the object that corresponds to the value of the 'Event State Acknowledged' parameter shall be set to 1, a 'Result(+)' primitive shall be issued, and an event notification with a 'Notify Type' parameter equal to ACK_NOTIFICATION shall be issued. Otherwise, a 'Result(-)' primitive shall be issued. An acknowledgment notification shall use the same type of service (confirmed or unconfirmed) directed to the same recipients to which the original confirmed or unconfirmed event notification was sent. *The 'Time Stamp' conveyed in the acknowledgement notification shall not be derived from the 'Time Stamp' of the original event notification, but rather the time at which the acknowledgement notification is generated.*

3) Clause 12.11.43, p. 186. A sentence appears in this clause that was mistakenly copied from Clause 12.11.41, where it properly applies. It should be removed as shown. The Slave_Address_Binding property is a combination of configured and live data, and as such is not expected to be writable.

12.11.43 Slave_Address_Binding
This property, of type List of BACnetAddressBinding, describes the set of slave devices for which this device is acting as a Slave-Proxy as described in 16.10.2. This property shall be present if the device is capable of performing the functions of a Slave-Proxy device. ~~If present, and the device is directly attached to an MS/TP network, then this property shall be writable.~~

4) ANNEX C, p. 497. There is a discrepancy between the object definition of the Event-Enrollment object in section 12.12 of the standard and the Event-Enrollment object property list in Annex C. The 'notification-class' property is incorrectly marked as OPTIONAL in Annex C. The word OPTIONAL should be stricken as shown

ANNEX C - FORMAL DESCRIPTION OF OBJECT TYPE STRUCTURES (INFORMATIVE)
…

EVENT-ENROLLMENT ::= SEQUENCE {
…
notification-class [17] Unsigned ~~OPTIONAL~~,
…
}

5) ANNEX C, p. 502. The name of a property in the device object definition is incorrect. It should be changed as shown.

DEVICE ::= SEQUENCE {
…
max-APDU-length-~~supported~~***accepted*** [62] Unsigned,
…

6) Clause 12.17.32.1, p. 214. The clause incorrectly states that for the FLOATING_LIMIT algorithm, the Low_Diff_Limit should be the negation of the Error_Limit, but the algorithm subtracts that value already, so no sign change should occur (the algorithm is unusable as written, so this is an erratum).

12.17.32.1 Conditions for Generating a TO-OFFNORMAL Event

…
~~Low_Diff_Limit = —Error_Limit~~
Low_Diff_Limit = Error_Limit

7) Clause 12.17.33, p. 214. The description of Deadband defines "Error" as a signed quantity, but "Error" it is also previously defined in 12.17.32.1 and 12.17.32 as an absolute value. To avoid confusion, the name of the calculated value in this subclause is changed as follows.

12.17.33 Deadband

This property, of type REAL, shall specify a positive offset from the Error_Limit property, which defines a band around the ***Signed***Error (the difference between the Setpoint and the Controlled_Variable_Value properties) within the range of (Error_Limit — Deadband) and ((—Error_Limit)+Deadband). The ***Signed***Error must remain within this range for a TO-NORMAL event to be generated under these conditions :

(a) the ***Signed***Error must fall below the Error_Limit minus Deadband,
(b) the ***Signed***Error must exceed the —Error_Limit plus the Deadband,
(c) the ***Signed***Error must remain within this range for a minimum period of time, specified in the Time_Delay property, and
(d) the TO-NORMAL flag must be set in the Event_Enable property.

This property is required if intrinsic reporting is supported by this object.

8) Table of Contents, page vi. In the title for L.1, BACnet is misspelled. It should be corrected as shown:

L.1 ~~BACent~~ *BACnet* Operator Workstation (B-OWS)

9) Figure 5-9, p. 43. The top of the figure has a misspelling. Correct as shown:

(Segmented ~~Reponse~~ *Response*, with Application Program Flow Control)

10) A comment in the BACnetPropertyIdentifier in Clause 21, p. 471, incorrectly lists node_subtype and node_type again with incorrect values (they are also correctly shown as values 207 and 208). Correct as follows:

~~-- see node-subtype (216),~~
~~-- see node-type (217),~~
-- enumeration values 216-217 are reserved for future addenda

11) An incorrect Clause title exists on p. 167. Correct as shown:

12.7.25.1 Conditions for Generating a TO-~~NORMAL~~OFFNORMAL Event

A TO-OFFNORMAL event is generated under these conditions:

13) In Clause 12.11.16 on p. 182, "read only" should be "read-only". Correct as follows:

12.11.16 Object_List

This ~~read only~~ ***read-only*** property is a BACnetARRAY of Object_Identifiers …

14) In Clause 12.12.5 on p. 188, "read only" should be "read-only". Correct as follows:

12.12.5 Event_Type

This ~~read only~~ ***read-only*** property, of type BACnetEventType, …

g) In Clause D.11 on p. 519, "6.0" should be "360", since the property has units of minutes, not hours. Correct as follows:

D.11 Examples of a Device Object
…
Property: UTC_Offset = ~~6.0~~ ***360***
…

15) In the BACnetPropertyStates production in Clause 21 on p. 472, the last line is missing a comma and should be corrected as follows:

BACnetPropertyStates ::= CHOICE {
...
door-alarm-state [15] ~~*BACnetDoorAlarmState*~~*BACnetDoorAlarmState*,
...
}

16) In the ACCESS-DOOR definition in ANNEX C on p. 509, several OPTIONAL designators need to be corrected to match Table 12-30 and the corresponding property description clauses.

ACCESS-DOOR::= SEQUENCE {
…

door-status	[231]	BACnetDoorStatus *OPTIONAL*,
lock-status	[233]	BACnetLockStatus *OPTIONAL*,
secured-status	[235]	BACnetDoorSecuredStatus *OPTIONAL*,

…

door-extended-pulse-time [227] Unsigned ~~OPTIONAL~~,
…
}

17) In Table 12-15 on p. 189, Previous_Notification_Count was left out of the table entry for BUFFER_READY. This parameter is defined as a member of the BACnetEventParameters production in Clause 21, and it use is defined in Clause 1.3.7. Add to the table as shown:

Table 12-15. Event_Types, Event_States, and their Parameters

Event_Type	Event_State	Event_Parameters
…	…	…
BUFFER_READY	NORMAL	Notification_Threshold *Previous_Notification_Count*
…	…	…

18) To complete the addition to Table 12-15 above, a new entry needs to be made to Clause 12.12.7. After the entry for Notification_Threshold, add the following new description:

Notification_Threshold	This parameter ...
Previous_Notification_Count	*This parameter, of type Unsigned32, applies to the BUFFER_READY algorithm. It contains the value that Total_Record_Count had at the time the previous BUFFER_READY notification occurred.*
List_Of_Life_Safety_Alarm_Values	This parameter…

19) In ANNEX F, Section F.1.5, p. 561, two cases of X'0C' appear with an extra space, as X'0C '. Remove the extra space as shown:

F.1.8 Encoding for Example E.1.8 - GetEventInformation Service

…
X'3E' PD opening Tag 3
~~X'0C '~~*X'0C'* SD context Tag 0 (Time L=4)
X'0F230014' Time 15:35:00.20
~~X'0C '~~*X'0C'* SD context Tag 0 (Time L=4)
X'FFFFFFFF' Time unspecified
X'0C' SD context Tag 0 (Time L=4)
X'FFFFFFFF' Time unspecified

20) In Clause 12.23, pp. 237, 239, 241, 243, in the subheading at the top of the page, the word "Conveter" should be "Converter".

21) In Clause 21, p. 446, the 'unknown-device', 'unknown-route, and 'value-not-initialized' enumerations were left out of the Error production. Insert as follows:

Error ::= SEQUENCE {
…
error-code ENUMERATED {
…
timeout (30),
unknown-device (70),
unknown-object (31),
unknown-property (32),
-- this enumeration was removed (33),


```
        unknown-route               (71),
        unknown-vt-class            (34),
        …
        unsupported-object-type     (36),
        value-not-initialized       (72),
        value-out-of-range          (37),
        …
        -- see unknown-device       (70),
        -- see unknown-route        (71),
        -- see value-not-initialized (72),
        …
        }
}
```

22) In Clause 13.12.1.2.1.7, p. 322, the last sentence is no longer valid since the removal of the Recipient property from the Event Enrollment object. Delete text as shown:

13.12.1.2.1.7 Event Priorities
This parameter, of type BACnetARRAY[3] of Unsigned, shall convey the priorities specified in the Priority property of the associated Notification Class object. ~~In the case where an Event Enrollment Object is used without an associated Notification Class Object, the three fields of this parameter shall all contain the value of the Priority property of the Event Enrollment Object.~~

23) An enumeration for "state-description" was left out of the BACnetPropertyIdentifier production in Clause 21, p. 469. A later comment correctly indicates its value (222), but the non-comment version was not included. Correct by inserting the enumeration value as shown:

```
slave-proxy-enable (172),
start-time (142),
state-description (222),
state-text (110),
status-flags (111),
```

24) The Table of Contents, on page vi, is missing an entry for ANNEX N. Add as shown::

25) The title of Clause N.4, p. 652, is incorrect. "N.4 Reference Notes" should be "N.4 Reference Nodes".

26) The clauses for the DUPLICATE_NAME and DUPLICATE_OBJECT_ID error codes are listed under the wrong parent clause. Their usage in Clause 15.9.1.3.1 and 15.10.1.3.1 indicate that they are to be used with the PROPERTY error class, and the tests in 135.1 are written as such, but they are listed under the SERVICES class in Clause 18.6. There is no documented usage of these error codes in the SERVICES class, so the following clauses should be moved as shown:

~~**18.6.4** ***18.3.x*** **DUPLICATE_NAME** -~~ An attempt has been made to write to an Object_Name property with a value that is already in use in a different Object_Name property within the device.

~~**18.6.5** ***18.3.y*** **DUPLICATE_OBJECT_ID** -~~ An attempt has been made to write to an Object_Identifier property with a value that is already in use in a different Object_Identifier within the same device.

27) The History of Revisions at the end of the standard is missing a reference to the creation of Amendment 1 to ISO standard EN ISO 16484-5 2007. Add a new entry where shown:

…	…	…
1	6	**Addendum *f* to ANSI/ASHRAE 135-2004** Approved by the ASHRAE Standards Committee January 27, 2007, and by the ASHRAE Board of Directors March 25, 2007, and by the American National Standards Institute March 26, 2007. 1. Add new Access Door object type.
1	*6*	***Amendment 1 to EN ISO 16484-5 2007*** *This amendment to the ISO standard contains the same technical content as the cumulative changes in Addenda a, c, d, e, and f to ANSI/ASHRAE Standard 135-2004.*
1	7	**Addendum *b* to ANSI/ASHRAE 135-2004** Approved by the ASHRAE Standards Committee … …
…	…	…

28) Annex C, p. 511. The entry for TRENDLOG-MULTIPLE contains two errors. The "::=" should not have a space in it, and the log-device-object-property should be of type BACnetDeviceObjectPropertyReference.

TREND-LOG-MULTIPLE ~~::=~~***::=*** SEQUENCE {
…
log-device-object-property [132] SEQUENCE OF BACnetDeviceObjectProperty***Reference***,
…

29) Table 16-2, p. 364. The entry for Error Parameters is listed as required ("M"), and it should be optional ("U").

Table 16-2. Structure of ConfirmedPrivateTransfer Service Primitives

Parameter Name	Req	Ind	Rsp	Conf
…				
Result(-)			S	S(=)
Error Type			M	M(=)
Vendor ID			M	M(=)
Service Number			M	M(=)
Error Parameters			~~M~~***U***	~~M~~***U***(=)

30) Clause 21, the BACnetPropertyIdentifier production, p. 465. The comment for last-restart-reason is missing the second dash.

BACnetPropertyIdentifier ::= ENUMERATED {
…
last-notify-record (173),
last-restart-reason (196),
last-restore-time (157),
…
-- see last-restart-reason (196),
…
}

31) Clause 9.5.6.5, p. 90. In the SoleMasterRestartMaintenancePFM case, the comparison made to N_{poll} should be to N_{poll}-1 as in all other similar places. Additionally, it should be phrased like similar conditions with the additions of "and" as shown (ResetMaintenancePFM shown for reference):

ResetMaintenancePFM

If FrameCount is greater than or equal to $\mathbf{N}_{max\_info\_frames}$ and TokenCount is greater than or equal to $\mathbf{N}_{poll}$–1 and (PS+1) modulo ($\mathbf{N}_{max\_master}$+1) is equal to NS, and SoleMaster is FALSE,

…

SoleMasterRestartMaintenancePFM

If FrameCount is greater than or equal to $\mathbf{N}_{max\_info\_frames,}$ ***and*** TokenCount is greater than or equal to $\mathbf{N}_{poll}$***– 1 and*** (PS+1) modulo ($\mathbf{N}_{max\_master}$+1) is equal to NS, and SoleMaster is TRUE,

…

32) Clause 16.10.2, p. 376. In two places the word "confirmed" is used where it should be "unconfirmed". There is no "confirmed" Who-Is service. Additionally, the last sentence is missing its final period. Correct as shown.

16.10.2 Who-Is Service procedure

…

If the receiving BACnet-user has a Slave_Proxy_Enable property and the Slave_Proxy_Enable for the receiving port is TRUE, then the BACnet-user shall respond with an I-Am unconfirmed request for each of the slave devices on the MS/TP network that are present in the Slave_Address_Binding property and that match the device range parameters. The I-Am unconfirmed requests that are generated shall be generated as if the slave device originated the service. If the I-Am ~~confirmed~~ ***unconfirmed*** request is to be placed onto the MS/TP network on which the slave resides, then the MAC address included in the packet shall be that of the slave device. In the case where the I-Am ~~confirmed~~ ***unconfirmed*** request is to be placed onto a network other than that on which the slave resides, then the network layer shall contain SLEN and SNET filled in with the slave's MAC address as if it were routing a packet originally generated by the slave ~~device~~ ***device.***

33) Clause 18.6, p. 394. Addendum 135-2004*b* included a definition for LIST_ELEMENT_NOT_FOUND to be included in Clause 18, but that change was not included in 135-2008. Insert new clause as shown.

18.6.X LIST_ELEMENT_NOT_FOUND

A list data item required for carrying out the service request was not found.

34) Clause 21, p. 445. Addendum 135-2004*b* included a definition for error code *list-element-not-found* to be included in Clause 21 Error production, but that change was not included in 135-2008. Insert new enumeration items according to instructions in square brackets.

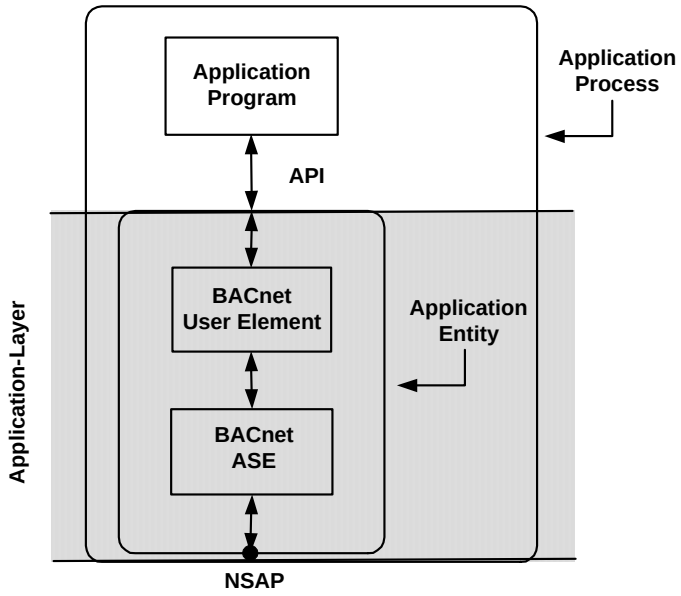
```
Error ::= SEQUENCE {
    …
    error-code      ENUMERATED {
                    …
                    list-element-not-found      (81),   [insert in alphabetic order]
                    …
        -- see      list-element-not-found      (81),   [insert in numeric order]
                    …
        }
    }
```

35) Clause 12.11.28, p. 184. Addendum 135-2004*d* makes changes to the APDU_Timeout property that were not carried forward into 135-2008. Correct as shown.

12.11.28 APDU_Timeout

The APDU_Timeout property, of type Unsigned, shall indicate the amount of time in milliseconds between retransmissions of an APDU requiring acknowledgment for which no acknowledgment has been received. A suggested value for this property is ~~10,000~~ ***6,000*** milliseconds for devices that permit modification of this parameter. Otherwise, the default value shall be ~~60,000~~ ***10,000*** milliseconds. This value shall be non-zero if the Device object property called Number_Of_APDU_Retries is non-zero. See Clause 5.3.

36) Figure 5-1, p. 14. The shading was left off portion of the figure. It should look like the following.



37) Clause 13.3.6, p. 301. There is an erroneous statement about Boolean data in the description of an analog algorithm. It should be removed as shown.

> An OUT_OF_RANGE clears when the referenced property attains a value greater than the (Low_Limit + Deadband) or a value less than the (High_Limit - Deadband) and remains there for Time_Delay seconds. ~~Note that the limit values may be Boolean TRUE or FALSE as well as analog values.~~ The Event Enrollment object generates a TO-NORMAL transition. The event notification shall show an 'Event Type' of OUT_OF_RANGE. See Figure 13-8.

38) Clause 21, p. 473. There is an erroneous comma after ‘hardware-watchdog’, and the single ellipsis character should be changed to three periods.

BACnetRestartReason ::= ENUMERATED {

…

~~hardware-watchdog, (5),~~

hardware-watchdog (5),

...

}

39) Clause 21, p. 438. In the ReadRange-ACK production, ABSTRACT-SYNTAX.&Type is misspelled.

ReadRange-ACK ::= SEQUENCE {

...

itemData [5] SEQUENCE OF ABSTRACT-SYNTAX.&~~TYPE~~*Type*,

...

}

40) Clause 21, p. 445. There is an erroneous comma after ‘invalid-tag’.

error-code ENUMERATED {
...
~~invalid-tag, (57),~~
invalid-tag (57),
...

41) Clause 21, p. 459. In the BACnetLogData production, SEQUENCE OF is misspelled..

BACnetLogData ::= CHOICE {
log-status [0] BACnetLogStatus,
log-data [1] SEQUENCE ~~of~~ *OF* CHOICE {
...

42) Clause 21, p. 460. In the BACnetLogRecord production, there is an erroneous comma after logDatum

BACnetLogRecord ::= SEQUENCE {
timestamp [0] BACnetDateTime,
logDatum [1] CHOICE {
...
~~},~~
}
statusFlags [2] BACnetStatusFlags OPTIONAL
}

43) Clause 21, p. 460. In the BACnetLogging Type, the single ellipsis character should be three period characters.

BACnetLoggingType ::= ENUMERATED {
polled (0),
cov (1),
triggered (2),
...
}

44) Clause 21, p. 460. In the BACnetLogMultipleRecord, there is an extraneous comma after ‘logData’.

BACnetLogMultipleRecord ::= SEQUENCE {
timestamp [0] BACnetDateTime,
~~logData [1] BACnetLogData,~~
logData [1] BACnetLogData
}

45) Clause 21, p. 461. In the BACnetNodeType, there is an extraneous comma after ‘other’.

BACnetNodeType ::= ENUMERATED {
...
~~other (11),~~
other (11)
}

46) ANNEX C, p. 497. In multiple places throughout the ANNEX, the property number for ‘profile-name’ is incorrect.

profile-name [~~167~~*168*] CharacterString OPTIONAL

47) ANNEX C, p. 497. The ‘scale’ property number in the ACCUMULATOR production is incorrect.

ACCUMULATOR ::= SEQUENCE {
...
scale [~~186~~*187*] BACnetScale,
...
}

48) ANNEX C, p. 502. Correct multiple errors in DEVICE production as shown.

DEVICE ::= SEQUENCE {
...
apdu-timeout [11] Unsigned ~~OPTIONAL~~,
...
configuration-files [154] SEQUENCE OF BACnetObjectIdentifier OPTIONAL,
-- *accessed as a BACnetARRAY*
...
slave-proxy-enable [172] SEQUENCE OF BOOLEAN OPTIONAL,
-- *accessed as a BACnetARRAY*
...
auto-slave-discovery [169] SEQUENCE OF BOOLEAN OPTIONAL,
-- *accessed as a BACnetARRAY*
...
}

49) ANNEX C, p. 503 and p. 511. The EVENT-LOG and TREND-LOG-MULTIPLE productions have an erroneous space between the double colons and the equals character.

~~**EVENT-LOG** :: = SEQUENCE {~~
EVENT-LOG *::= SEQUENCE {*

~~**TREND-LOG-MULTIPLE** :: = SEQUENCE {~~
TREND-LOG-MULTIPLE *::= SEQUENCE {*

50) ANNEX C, p. 510. In the LOAD-CONTROL production, the property number for state-description is incorrect, and the single dash character in the comment after event-time-stamps should be two hyphen characters.

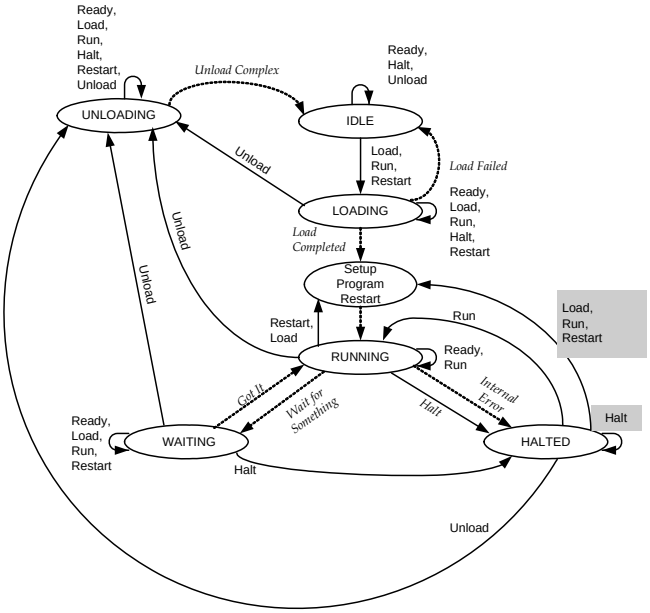
LOAD-CONTROL ::= SEQUENCE {
...
state-description [~~28~~*222*] CharacterString OPTIONAL,
...
event-time-stamps [130] SEQUENCE OF BACnetTimeStamp OPTIONAL,
~~– accessed as a BACnetARRAY~~
-- *accessed as a BACnetARRAY*
}

51) ANNEX C, p. 511. In the STRUCTURED-VIEW production, ‘node-type’ should not be OPTIONAL.

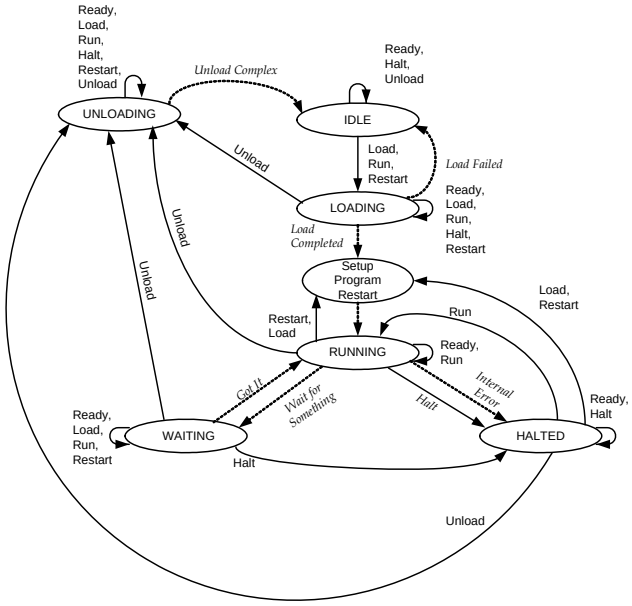
STRUCTURED-VIEW ::= SEQUENCE {
...
node-type [208] BACnetNodeType ~~OPTIONAL~~,
...
}

52) Figure 12-3, p. 234. The transitions from the HALTED state are incorrectly shown. Correct as follows:

Original Figure:



Updated Figure:



53) ANNEX A, p. 494. Addendum 135-2008*l* added two new device profiles but did not update the PICS.

BACnet Standardized Device Profile (Annex L):

☐ BACnet Operator Workstation (B-OWS)
☐ BACnet Advanced Operator Workstation (B-AWS)
☐ BACnet Operator Display (B-OD)

☐ BACnet Building Controller (B-BC)
...

54) ANNEX A, p. 494. Addendum 135-2008*g* added a new data link option but did not update the PICS.

Data Link Layer Options:
...
☐ LonTalk, (Clause 11), medium: _____
☐ BACnet/ZigBee (ANNEX O)
☐ Other: _____

55) In Clause 12.23.19 on p. 241, Add a clarifying reference to Clause 13.1 as follows:

12.23.19 COV_Period

The COV_Period property, of type Unsigned, shall indicate the amount of time in seconds between the periodic COV notifications performed by this object. This property is required if COV reporting is supported by this object. ***See clause 13.1***

56) In Clause 12.17.16. on p. 212, The language is confusing. Clarify as follows:

12.17.16 Setpoint_Reference

This property, of type BACnetSetpointReference, *contains zero or one references.* ~~is a list of references that has a length of zero or one. A length of zero~~ *The absence of a reference* indicates that the setpoint for this control loop is fixed and is contained in the Setpoint property. ~~A length of one~~ *The presence of a reference* indicates that the property of another object contains the setpoint value used for this Loop object and specifies that property.

56) In Clause 9.5.5 on p. 212, The comment about line contention could be misconstrued as making the delay optional. It is not. Clarify as follows:

9.5.5 The SendFrame Procedure

The transmission of an MS/TP frame proceeds as follows:

Procedure SendFrame

(a) If SilenceTimer is less than Tturnaround, wait (Tturnaround - SilenceTimer) ~~in order to avoid line contention~~.

57) In Clause 6.5.2.2 on p. 57, This clause needs to be updated to be consistent with the language in Clause 6.6.3.5.

6.5.2.2 Receipt of Local Network Layer Messages

If the control NPCI octet indicates the absence of a DNET field or a DNET field is present and contains the global broadcast address X'FFFF', the NE shall attempt to interpret the network layer message. If the DNET field is present and the NE resides in a routing node and the network layer message can be interpreted, then the NE shall take the actions specified in 6.5.4. If the message cannot be interpreted *and the message was directed specifically at the router*, a Reject-Message-To-Network shall be returned to the device that sent the message.

58) Clause 12.25.5, p. 251. The Enable property of the Trend Log object, like that of the Trend Log Multiple and Event Log objects is required to be writable. Strike the erroneous conditional phrase as shown:

12.25.5 Enable
This property, of type BOOLEAN, indicates and controls whether (TRUE) or not (FALSE) logging of events

and collected data is enabled. Logging occurs if and only if Enable is TRUE, Local_Time is on or after Start_Time, and Local_Time is before Stop_Time. If Start_Time contains any wildcards, then it shall be considered equal to 'the start of time'. If Stop_Time contains any wildcards, then it shall be considered equal to 'the end of time'. Log_Buffer records of type log-status are recorded without regard to the value of the Enable property.

~~If Enable is writable, attempts~~ ***Attempts*** to write the value TRUE to the Enable property while Stop_When_Full is TRUE and Record_Count is equal to Buffer_Size shall cause a Result(-) response to be issued, specifying an 'Error Class' of OBJECT and an 'Error Code' of LOG_BUFFER_FULL.

59) In Clause 12.14.6 on p. 195, "read only" should be “read-only” (and without quotes). Correct as follows:

12.14.6 Present_Value
This property is a list that contains the values of all the properties specified in the List_Of_Group_Members. This is a ~~"read only"~~ ***read-only*** property; it cannot be used to write a set of values to the members of the group.

60) In Clause 19.2 on p. 401, “read only” should be “read-only”. Correct as follows:

19.2 Command Prioritization
In building control systems...

(b) Priority_Array: This property is a ~~read only~~ *read-only* array that contains prioritized commands or NULLs in the order of decreasing priority. The highest priority (lowest array index) with a non-NULL value is the active command.

61) In Clause 19.2.1 on p. 402, “read only” should be “read-only”. Correct as follows:

19.2 Prioritization Mechanizm
For BACnet objects, ...
If an attempt is made to write to a commandable property without explicitly specifying the priority, a default priority of 16 (the lowest priority) shall be assumed. If an attempt is made to write to a property that is not commandable with a specified priority, the priority shall be ignored. The Priority_Array property is ~~read only~~ ***read-only***. Its values are changed indirectly by writing to the commandable property itself.

62) In Clause D.26 on p. 531, The enumeration shown for door-status should be “OPENED”. Correct as follows:

D.26 Example of an Access Door object
...
Property: door-status = ~~OPEN~~ ***OPENED***

63) In Clause 6.3.1 on p. 54, BACnet/IP is left off the list of data links that support multicast. Correct as follows:

6.3.1 Multicast Messages

At present, only ISO 8802-3, ~~and~~ LonTalk, ***and BACnet/IP (as defined in Annex J),*** support multicast addresses. The method by which a BACnet Device is assigned to a specific multicast group shall be a local matter.

64) In Clause D.15 on p. 522. The example values shows do not represent a consistent state of the object. Correct as follows:.

D.15 Example of a Life Safety Point Object

In this example, a smoke detector is represented as a Life Safety Point object.
Property: Object_Identifier = (Life Safety Point, Instance 2)
Property: Object_Name = "SMK3W"
Property: Object_Type = LIFE_SAFETY_POINT
Property: Present_Value = ~~PREALARM~~ *ALARM*
Property: Tracking_Value = ~~PREALARM~~ *ALARM*

65) In Clause D.16 on p. 523. The example values shows do not represent a consistent state of the object. Correct as follows:.

D.16 Example of a Life Safety Zone Object

In this example, a fire zone is represented as a Life Safety Zone object.
Property: Object_Identifier = (Life Safety Zone, Instance 2)
Property: Object_Name = "SMK3"
Property: Object_Type = LIFE_SAFETY_ZONE
Property: Present_Value = PREALARM
Property: Tracking_Value = PREALARM
Property: Description = "Floor 3 Smoke"
Property: Status_Flags = {TRUE FALSE, FALSE, FALSE}
Property: Event_State = ~~LIFE_SAFETY_ALARM~~ *OFFNORMAL*

66) In Clause 12.24.10 on p. 246. The title of the clause is wrong. It should be ...References, not ...Reference.

12.24.10List_Of_Object_Property_~~Reference~~*References*

67) In Clause 13.5.2 on p. 246. Remove extra space.

"NO_ALARM_ CONFIGURED" should be "NO_ALARM_CONFIGURED"

68) Clause 12.11.27, p. 183. The language of this clause does not reflect the changes approved with Addendum d-7 to ANSI/ASHRAE 135-2004.:

12.11.27 APDU_Segment_Timeout

The APDU_Segment_Timeout property, of type Unsigned, shall indicate the amount of time in milliseconds between retransmission of an APDU segment. A suggested *default* value for this property is ~~5000~~ *5,000* milliseconds. ...

69) Clause 12.11.28, p. 184. The language of this clause does not reflect the changes approved with Addendum d-7 to ANSI/ASHRAE 135-2004. Correct as follows:

12.11.28 APDU_Timeout

The APDU_Timeout property, of type Unsigned, shall indicate the amount of time in milliseconds between retransmissions of an APDU requiring acknowledgment for which no acknowledgment has been received. A suggested *default* value for this property ....

70) Clause 12.11.29, p. 184. The language of this clause does not reflect the changes approved with Addendum d-7 to ANSI/ASHRAE 135-2004. Additionally, the sentence was accidentally truncated. Correct as follows:

12.11.29 Number_Of_APDU_Retries

The Number_Of_APDU_Retries property, of type Unsigned, shall indicate the maximum number of times that an APDU shall be retransmitted. A suggested *default* value for this property ~~is.~~ *is 3*.

71) Clause 18.3, p. 391. The LOG_BUFFER_FULL error code is specified elsewhere to use the OBJECT class, but it is shown incorrectly under the PROPERTY class. Move Clause 18.3.6 to Clause 18.2.x:

~~18.3.6~~ *18.2.x* LOG_BUFFER_FULL - The attempted operation would result in the addition of a log record to an object whose log buffer is full.

72) Table 12-35, p. 282. The footnote 2 should be filled out to match the property description in Clause 12.30.13 and to align with the similar footnote in Table 12-29. Add the text as shown:

[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.*

73) Clause 6.5.6.3, p. 88. In two places, "Data Expecting Reply" should be "BACnet Data Expecting Reply". Add the text as shown:

9.5.6.3 USE_TOKEN

...

SendNoWait

If the next frame awaiting transmission is of type Test_Response, BACnet Data Not Expecting Reply, a proprietary type that does not expect a reply, or a frame of type *BACnet* Data Expecting Reply with a DestinationAddress that is equal to 255 (broadcast),

then call SendFrame to transmit the frame; increment FrameCount; and enter the DONE_WITH_TOKEN state.

SendAndWait

If the next frame awaiting transmission is of type Test_Request, BACnet Data Expecting Reply, a proprietary type that expects a reply, or a frame of type *BACnet* Data Expecting Reply with a DestinationAddress that is not equal to 255 (broadcast),

then call SendFrame to transmit the data frame; increment FrameCount; and enter the WAIT_FOR_REPLY state.

74) Clause 13.5.2, p. 307. The table describing the error conditions should not be shown in the Service Procedure clause, but rather in the Error Type clause. Move the sentence "The 'Error Class' and 'Error Code' to be returned for specific situations are as follows:" and the following table to Clause 13.5.1.10,.

75) Clause 6.2.3, p. 51. Since Hop Count is an unsigned 8-bit value, it should not be possible to decrement it past zero. However, this should be made explicit to alert implementers to this fact.

6.2.3 Hop Count

…

The Hop Count field shall be present only if the message is destined for a remote network, i.e., if DNET is present. This is a one-octet field that is initialized to a value of X'FF'. Each router the message passes through shall decrement the Hop Count by at least one *but not more than the current value of Hop Count*. If the Hop Count reaches a value of zero, the router shall discard the message and not forward it to the next router.

76) Clause 6.5.4, p. 57. Hop Count is always decremented according to Clause 6.2.3, so the inclusion of a decrement in one of three cases in Clause 6.5.4 was confusing and should be removed.

6.5.4 Network Layer Procedures for the Receipt of Remote Traffic

…

Three possibilities exist: either the router is directly connected to the network referred to by DNET, the message must be relayed to another router for further transmission, or a global broadcast is required. In the first case, DNET, DADR, and Hop Count shall be removed from the NPCI and the message shall be sent directly to the destination device with DA set equal to DADR. The control octet shall be adjusted accordingly to indicate

only the presence of SNET and SADR. In the second case, ~~the Hop Count shall be decremented. If~~ *if* the Hop Count is ~~still~~ greater than zero, the message shall be sent to the next router on the path to the destination network. If the next router is unknown, an attempt shall be made to identify it using a Who-Is-Router-To-Network message. If the Hop Count is zero, then the message shall be discarded. If the DNET global broadcast network number is present and the Hop Count is greater than zero, the router shall broadcast the message on each network to which the router is directly connected, except the network of origin, using the broadcast address appropriate to each data link. If the DNET global broadcast network number is present and the Hop Count is zero, then the message shall be discarded

77) Clause 15.8.1.1.4.1.2, p. 354. The 'By Position' form of ReadRange is not related to time and so the terms "oldest" and "newest" in the description of the 'Count' parameter are incorrect and should be deleted as shown:

15.8.1.1.4.1.2 Count

… If 'Count' is positive, the record specified by 'Reference Index' shall be the first ~~and oldest~~ record read and returned; if 'Count' is negative the record specified by 'Reference Index' shall be the last ~~and newest~~ record …

78) Clause 15.4.4.4, p. 30. In the LastSegmentOfComplexACK_Received transiion, "ComplexAck PDU" should be "BACnet-ComplexAck-PDU". Correct as shown:

LastSegmentOfComplexACK_Received
If a ~~ComplexACK-PDU~~ *BACnet-ComplexACK-PDU* is received

79) Table 12-27, p. 238. Footnote 2 is unnecessary. The referenced properties are always required. Delete footnote 2 and renumber footnotes 3 and 4.

Table 12-27. Properties of the Pulse Converter Object

Property Identifier	Property Datatype	Conformance Code
Count_Change_Time	BACnetDateTime	R~~[2]~~
Count_Before_Change	Unsigned	R~~[2]~~

~~[2] These properties are required if Count_Before_Change is writable.~~

80) Clause 12.23.13, p. 240. The property is required to be writable, so "If ... writable" is inappropriate.

12.23.13 Adjust_Value
...
~~If this property is writable the~~ *The* following series of operations shall be performed atomically when this property is written:

81) Many **Event_Time_Stamp** definitions in **Clause 12** incorrectly show X'FF' as 'FF'. Correct by adding an X where absent.

12.x.x Event_Time_Stamps
...Time stamps of type Time or Date shall have *X*'FF' in each octet ...

82) Clause 3.3, pp. 5-7. Although the term UTC was used in the standard, there was no formal definition for it. Add definition in alphabetical order as shown.

3.3 Abbreviations and Acronyms Used in this Standard
…
UDP User Datagram Protocol - RFC 768
UTC *Universal Time Coordinated*
VT virtual terminal

…

83) Clause 20.1.12 and Clause 20.1.13 p. 422. Although there is no support to assume otherwise, a clarifying statement about local dates and times should be added.

20.2.12 Encoding of a Date Value

The encoding of a date value shall be primitive, with four contents octets. *Unless otherwise specified (e.g. UTC date), a date value generated by a device shall be a local date.*

….

20.2.13 Encoding of a Time Value

The encoding of a time value shall be primitive, with four contents octets. *Unless otherwise specified (e.g. UTC time), a time value generated by a device shall be a local time.*

…

84) Clause 18.8.2, p. 373. The Service Procedure for the UTCTimeSynchronization service left off the "UTC_" prefix in several places for its associated UTC_Time_Synchronization_Recipients property.

16.8.2 Service Procedure

...

No restrictions on the use of this service exist when it is invoked at the request of an operator. Otherwise, the initiation of this service by a device is controlled by the value of the *UTC*_Time_Synchronization_Recipients property in the Device object. When the *UTC*_Time_Synchronization_Recipients list is of length zero, a device may not automatically send a UTCTimeSynchronization request. When *UTC*_Time_Synchronization_Recipients list is of length one or more, a device may automatically send a UTCTimeSynchronization request but only to the devices or addresses contained in the *UTC*_Time_Synchronization_Recipients list.

85) Clause 15.6.3.1.2.4, p. 348. The example shows an invalid number of seconds. Change 99 to 00 as shown.

15.6.3.1.2.4 Comparison Value

Comparison Value		Property Value	Because
- Sun	=	29-Jan-1995 Sun	Sun = Sun
1-Jan-*	<	2-Feb-1995	1-Jan < 2-Feb
-Aug-	>	10-Mar-1995	Aug > Mar
*:59:00.00	>	~~6:23:99.0~~ ***6:23:00.0***	59:00.00 > 23:00.00
6:*.*.*	=	6:25:00.00	6 = 6