BACnet *Errata*
ANSI/ASHRAE STANDARD 135-2024
A Data Communication Protocol for Building Automation and Control Networks

June 10, 2026

This document lists all known *errata* to ANSI/ASHRAE Standard 135-2024 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 back page marking identifying the electronic publication of Standard 135-2024 is "Product code: D-86950".

Changes are indicated by using ~~strikeout~~ for text to be removed and *italics* for text to be added, unless noted otherwise. Grey highlighting is used for marking small corrections.

1) Clause 12, throughout. Add 'read-only' to property definitions where the intent is that these properties are read only.

[Change **Clause 12.5.4 Minimum_Value**, page 187]

12.5.4 Minimum_Value

This *read-only* property, …

[Change **Clause 12.5.5 Minimum_Value_Timestamp**, page 187]

12.5.5 Minimum_Value_Timestamp

This *read-only* property, …

[Change **Clauss 12.5.6 Average_Value**, page 187]

12.5.6 Average_Value

This *read-only* property, …

[Change **Clause 12.5.7 Variance_Value**, page 187]

12.5.7 Variance_Value

This *read-only* property, …

[Change **Clause 12.5.8 Maximum_Value**, page 187]

12.5.5 Maximum_Value

This *read-only* property, …

[Change **Clause 12.5.9 Maximum_Value_Timestamp**, page 187]

12.5.5 Maximum_Value_Timestamp

This *read-only* property, …

[Change **Clause 12.9.1 Present_Value**, page 187]

12.9.1 Present_Value

This *read-only* property, …

[Change **Clause 12.10.6 In_Process**, page 217]

12.10.6 In_Process

This *read-only* property, …

[Change **Clause 12.10.7 All_Writes_Successful**, page 217]

12.10.7 All_Writes_Successful

This *read-only* property, …

[Change **Clause 12.11.8 Firmware_Revision**, page 223]

12.11.8 Firmware_Revision

This *read-only* property, …

[Change **Clause 12.11.12 Protocol_Version**, page 223]

12.11.12 Protocol_Version

This *read-only* property, …

[Change **Clause 12.11.13 Protocol_Revision**, page 224]

12.11.13 Protocol_Revision

This *read-only* property, …

[Change **Clause 12.11.15 Protocol_Object_Types_Supported**, page 224]

12.11.15 Protocol_Object_Types_Supported

This *read-only* property, …

[Change **Clause 12.11.22 Active_VT_Sessions**, page 225]

12.11.22 Active_VT_Sessions

~~The Active_VT_Sessions~~ *This read-only* property is a BACnetList of BACnetVTSession…

[Change **Clauses 12.11.35 Database_Revision**, page xxx]

12.11.35 Database_Revision

This *read-only* property, …

[Change **Clause 12.11.37 Last_Restore_Time**, page xxx]

12.11.37 Last_Restore_Time

This *read-only* property, …

[Change **Clause 12.11.40 Last_Restart_Reason**, page xxx]

12.11.40 Last_Restart_Reason

This *read-only* property, …

[Change **Clause 12.11.41 Time_Of_Device_Restart**, page xxx]

12.11.41 Time_Of_Device_Restart

This *read-only* property, …

[Change **Clause 12.11.50 Backup_And_Restore_State**, page xxx]

12.11.50 Backup_And_Restore_State

This *read-only* property, …

[Change **Clause 12.11.65 Active_COV_Multiple_Subscriptions**, page xxx]

12.11.65 Active_COV_Multiple_Subscriptions

This *read-only* property,

[Change **Clause 12.13.7 Modification_Date**, page xxx]

12.13.1 Modification_Date

This *read-only* property, …

[Change **Clause 12.23.17 Count_Before_Change**, page xxx]

12.23.17 Count_Before_Change

This *read-only* property, …

[Change **Clause 12.28.5 Present_Value**, page 345]

12.28.5 Present_Value

This *read-only* property, …

[Change **Clause 12.28.16 Expected_Shed_Level**, page 347]

12.28.16 Expected_Shed_Level

This *read-only* property, …

[Change **Clause 12.28.17 Actual_Shed_Level**, page 347]

12.28.17 Actual_Shed_Level

This *read-only* property, …

[Change **Clauses 12.25.16/12.27.15/12.30.21/12.64.12 Total_Record_Count**, page xxx,xxx,xxx]

12.x.y Total_Record_Count

This *read-only* property, …

[Change **Clauses 12.25.18/12.27.17/12.30.23 Records_Since_Notification**, page xxx, xxx, xxx]

12.x.y Records_Since_Notification

This *read-only* property, …

[Change **Clauses 12.25.19/12.27.18/12.30.24 Last_Notify_Record**, page xxx, xxx, xxx]

12.x.y Last_Notify_Record

This *read-only* property, …

[Change **Clause 12.53.10 Member_Status_Flags**, page 493]

12.50.10 Member_Status_Flags

~~The Member_Status_Flags property,~~ *This read-only property* is a logical combination…

[Change **Clause 12.53.7 Write_Status**, page 513]

12.53.7 Write_Status

This *read-only* property, …

[Change **Clause 12.54.7 In_Progress**, page 526]

12.54.7 In_Progress

This *read-only* property, …

[Change **Clause 12.55.12 Egress_Active**, page 537]

12.55.12 Egress_Active

This *read-only* property, …

[Change **Clause 12.56.13 Changes_Pending**, page 552]

12.56.13 Changes_Pending

This *read-only* property, …

[Change **Clause 12.56.56 Subordinate_Address_Binding**, page 562]

12.56.56 Subordinate_Address_Binding

This *read-only* property, …

2) Clause 21.2.5, the scope member of the token-request member of AuthRequest-Request should be optional per 17.6.2.1, Table 17-4.

```
AuthRequest-Request ::= CHOICE {  -- CHOICE of the "sub service" allows future extensibility
        token-request [0] SEQUENCE {
          client      [0] Unsigned32,     -- client device instance to bind the token to
          audience    [1] SEQUENCE OF Integer32,   -- target device(s) and/or group(s).
          scope       [2] BACnetAuthorizationScope OPTIONAL,   -- requested scope
        }
      }
```

3) Clause 21, the host member of the BACnetAuthenticationPeer sequence should be context tagged 0.

```
BACnetAuthenticationPeer ::= SEQUENCE {
   Host            [0] BACnetHostNPort,
   device          Unsigned32, -- 4194303 if unknown
   auth-aware      Boolean,
   router          Boolean,
   hub             Boolean
}
```

4) Clause 21, Incorrect ASN.1 context tagging for BACnetAuthorizationDescription.

```
BACnetAuthorizationScopeDescription ::= SEQUENCE {
        name            [0] CharacterString, -- usable as OAuth/JWT scope token
        description     [1] CharacterString
}
```

5) Clause 15.1.1.3.1, The INVALID_ARRAY_INDEX situation is incomplete per Addendum 135-2020ci.

An array index is provided that is greater than the current length of the array *or is zero*.

PROPERTY INVALID_ARRAY_INDEX

6) Clause K.2.16, Incorrect Table Clause references.

Device A shall support DS-RP-A and DS-WP-A. The A device shall be capable of using ReadProperty to retrieve and WriteProperty to modify any of the event and fault algorithm parameters listed in Tables K-*15* and K-*16*.

7) Clause 12.3.35, Typo (Duplicate “Property” in name)

12.3.35 ~~*Property*~~Property_List

8) Clause 12.17.19, List begins with wrong letter order

...

~~(c)~~*(a)* the Present_Value property shall be decoupled from the algorithm;

~~(d)~~*(b)* the Reliability property, if present, and the corresponding state of the FAULT flag of the Status_Flags property shall be decoupled from the algorithm;

~~(e)~~*(c)* the Present_Value property and the Reliability property, if present and capable of taking on values other than NO_FAULT_DETECTED, shall be writable to allow simulating specific conditions or for testing purposes;

~~(f)~~*(d)* the property referenced by Manipulated_Variable_Reference and other functions that depend on the state of the Present_Value or Reliability properties shall respond to changes made to these properties, as if those changes had been made by the algorithm.

9) Table 12-71.2, "REAL" is the wrong ASN.1 type

Table 12-71.2. Additional Properties of the Network Port Object Type if Network_Type is ETHERNET

Property Identifier	Property Datatype	BACNET_APPLICATION	PROTOCOL	PHYSICAL
Network_Number	Unsigned16	(R)		
Network_Number_Quality	BACnetNetworkNumberQuality	(R)		
APDU_Length	Unsigned	(R)		
Routing_Table	BACnetLIST of BACnetRouterEntry	O		
MAC_Address	OctetString			(R)[1]
Link_Speed	Real			O
Link_Speeds	BACnetARRAY[N] of ~~REAL~~*Real*			O
Link_Speed_Autonegotiate	Boolean			O
Network_Interface_Name	CharacterString			O
Device_Address_Proxy_Enable	Boolean	O[2]		
Device_Address_Proxy_Timeout	Unsigned	O[2]		

10) Table 12-71.3, "OCTETSTRING" is the wrong ASN.1 type

Table 12-71.3. Additional Properties of the Network Port Object Type if Network_Type is IPV4

Property Identifier	Property Datatype	BACNET_APPLICATION	PROTOCOL	PHYSICAL
...				
IP_DNS_Server ...	BACnetARRAY[N] of ~~OCTET STRING~~*OctetString*		(R)[6]	

11) Clause 21, Incorrect comment text

BACnetConfirmedServiceChoice ::= ENUMERATED {
...
-- Services added after 2016
-- confirmed-audit-notification (32) see Alarm and Event Services
-- audit-log-query (33) see Object Access Services

-- Services added after ~~2016~~*2020*
-- auth-request (34) see Security Services
...

12) Clause 21, BACnetEngineeringUnits per-second and per-minute deleted

```
...,
per-minute                      (100),
per-second                      (101),
psi-per-degree-fahrenheit       (102),
radians                         (103),
...,
```

13) Clause 21, additions incorrectly added for BACnetEventParameter

```
...
        change-of-discrete-value   [21] SEQUENCE {
                        new-value [0] CHOICE {
                                        boolean Boolean,
                                        unsigned Unsigned,
                                        integer Integer,
                                        enumerated ENUMERATED,
                                        characterstring CharacterString,
                                        octetstring OctetString,
                                        datePattern Date,
                                        timePattern Time,
                                        objectidentifier BACnetObjectIdentifier,
                                        datetime [0] BACnetDateTime
                                    },
                        status-flags [1] BACnetStatusFlags
        },
        change-of-discrete-value   [21] SEQUENCE {
                                        time-delay          [0] Unsigned
                                        },
...
```

14) Clause 21, correct parameter names for BACnetNotificationParameters (this is the original location for the parameter name changes shown above)

```
BACnetNotificationParameters ::= CHOICE {
...
        -- context tag [20] is not used, see note below
        change-of-discrete-value   [21] SEQUENCE {
                                        new-value               [0] CHOICE {
                                                boolean         Boolean,
                                                unsigned        Unsigned,
                                                integer         Integer,
                                                enumerated      ENUMERATED,
                                                characterstring CharacterString,
                                                octetstring     OctetString,
                                                date            DatePattern,
                                                time            TimePattern,
                                                objectidentifier BACnetObjectIdentifier,
                                                datetime        [0] BACnetDateTime
                                        },
                                        status-flags            [1] BACnetStatusFlags
                                        },
        ...
```

15) Clause 17, Page/Section header incorrect throughout

~~17. VIRTUAL TERMINAL SERVICES~~
~~Virtual Terminal Model~~
17. AUTHENTICATION AND AUTHORIZATION SERVICES
Authentication and Authorization Services

16) Clause 21, enumerations for BACnetNetworkPortCommand conflict with final assigned values in multiple addenda.

BACnetNetworkPortCommand ::= ENUMERATED {

idle	(0),
discard-changes	(1),
renew-fd-registration	(2),
restart-subordinate-discovery	(3),
renew-dhcp	(4),
restart-autonegotiation	(5),
disconnect	(6),
restart-port	(7),
~~restart-device-discovery~~	~~(8),~~
~~generate-csr-file~~	~~(9),~~
~~validate-changes~~	~~(10),~~
generate-csr-file	*(8),*
validate-changes	*(9),*
restart-device-discovery	*(10),*

...
}
-- Enumerated values 0-127 are reserved for definition by ASHRAE. Enumerated values
-- 128-255 may be used by others subject to the procedures and constraints described
-- in Clause 23.

17) Clause 12.22.6 Reason_For_Halt to harmonize the property description.

12.22.6 Reason_For_Halt

This read-only property, of type BACnetProgramError, reflects the reason the application program halted. If the process executing the application program this object represents encounters any type of error that causes process execution to be halted, then this property shall reflect the reason why the process was halted. ~~The Reason_For_Halt property shall be an enumerated type called BACnetProgramError.~~ The values that may be taken on by this property are:

…

18) Clause 12.61.7 Status Flags copy/paste error in Accumulator Object Type duplicate definition

OVERRIDDEN	Logical TRUE (1) if the point has been overridden by some mechanism local to the BACnet device. In this context "overridden" is taken to mean that the Present_Value and Reliability properties are no longer tracking changes to the physical input. Otherwise, the value is logical FALSE (0).
OUT_OF_SERVICE	*Logical TRUE (1) if the Out_Of_Service property has a value of TRUE, otherwise logical FALSE (0).*~~Logical TRUE (1) if the point has been overridden by some mechanism local to the BACnet device. In this context "overridden" is taken to mean that the Present_Value and Reliability properties are nolonger tracking changes to the physical input. Otherwise, the value is logical FALSE (0).~~

19) Clause 12, Some objects are not consistent with OVERRIDDEN and Out_Of_Service text description when referring to 'self' as point versus 'input' or 'output' as many other objects do.

12.54.9 Status_Flags

OVERRIDDEN Logical TRUE (1) if the ~~point~~ *output* has been overridden by some mechanism local to the BACnet device. In this context, "overridden" is taken to mean that the Present_Value property is not changeable through BACnet services. Otherwise, the value is logical FALSE (0).

12.54.12Out_Of_Service

This property, of type Boolean, indicates whether (TRUE) or not (FALSE) the physical ~~point~~ *output* that the object represents is not in service.

12.2.7 Status_Flags

OVERRIDDEN Logical TRUE (1) if the ~~point~~ *input* has been overridden by some mechanism local to the BACnet device. In this context "overridden" is taken to mean that the Present_Value and Reliability properties are no longer tracking changes to the physical input. Otherwise, the value is logical FALSE (0).

12.3.7 Status_Flags

OVERRIDDEN Logical TRUE (1) if the ~~point~~ *output* has been overridden by some mechanism local to the BACnet device. In this context "overridden" is taken to mean that the physical output is no longer tracking changes to the Present_Value property and the Reliability property is no longer a reflection of the physical output. Otherwise, the value is logical FALSE (0).

12.3.10 Out_Of_Service

This property, of type Boolean, is an indication whether (TRUE) or not (FALSE) the physical ~~point~~ *output* that the object represents is not in service.

12.6.7 Status_Flags

OVERRIDDEN Logical TRUE (1) if the ~~point~~ *input* has been overridden by some mechanism local to the BACnet device. In this context "overridden" is taken to mean that the Present_Value and Reliability properties are no longer tracking changes to the physical input. Otherwise, the value is logical FALSE (0).

12.7.10 Out_Of_Service

This property, of type Boolean, is an indication whether (TRUE) or not (FALSE) the physical ~~point~~ *output* that the object represents is not in service.

12.18.7 Status_Flags

OVERRIDDEN Logical TRUE (1) if the ~~point~~ *input* has been overridden by some mechanism local to the BACnet device. In this context "overridden" is taken to mean that the Present_Value and Reliability properties are no longer tracking changes to the physical input. Otherwise, the value is logical FALSE (0).

12.19.7 Status_Flags

OVERRIDDEN Logical TRUE (1) if the ~~point~~ *output* has been overridden by some mechanism local to the BACnet device. In this context "overridden" is taken to mean that the physical output is no longer tracking changes to the Present_Value property and the Reliability property is no longer a reflection of the physical output. Otherwise, the value is logical FALSE (0).

12.19.10Out_Of_Service

This property, of type Boolean, is an indication whether (TRUE) or not (FALSE) the physical ~~point~~ *output* that the object represents is not in service.

20) ~~Table 12-36 remove spaces (Coleman Brumley)~~

~~Priority_For_Writing~~ ~~Unsigned (1..16)~~ ~~*Unsigned (1..16)*~~

~~- Check with space through out for all integers~~

21) 6.4 eliminate any reference to a number of network layer protocol messages as they change

6.4 Network Layer Protocol Messages

This clause describes the format and purpose of the ~~ten~~ BACnet network layer protocol messages. These messages provide the basis for router auto-configuration, router table maintenance, and network layer congestion control.

22) Clause 21, authorization-scope should match Table 12-13 with plural

~~authorization-scope~~ *authorization-scopes* (4194346)

23) Clause 15.8.1.3.1 Restore "or is zero" to ReadRange

15.8.1.3.1 Error Type

An array index is provided that is greater than the current length of the array *or is zero*.	PROPERTY	INVALID_ARRAY_INDEX

24) Clause 15.8.1.2.3 Property Array Index change "if" to "of"

15.8.1.2.3 Property Array Index

If the property identified above is of datatype BACnetARRAY ~~if~~ *of* BACnetLIST, this parameter of type Unsigned shall indicate the array index of the array element of the property referenced by this service. If the property identified above is not of datatype BACnetARRAY of BACnetLIST, this parameter shall be omitted.

25) [Change **Clause 6.4 Network Layer Protocol Messages**, page xxx]

6.4 Network Layer Protocol Messages

This clause describes the format and purpose of ~~the ten~~ BACnet network layer protocol messages. These messages provide the basis for router auto-configuration, router table maintenance, and network layer congestion control.

26) [Change **Clause 15.8.1.2.3 Property Array Index**, page xxx]

15.8.1.2.3 Property Array Index

If the property identified above is of datatype ~~BACnetARRAY if BACnetLIST~~ *BACnetARRAY of BACnetLIST*, this parameter of type Unsigned shall indicate the array index of the array element of the property referenced by this service. If the property identified above is not of datatype BACnetARRAY of BACnetLIST, this parameter shall be omitted.

27) Clause 13.3.4 C COMMAND_FAILURE pMonitoredValue is equal to itself and should be equal to pFeedbackValuer Object Type. (Mike O)

The conditions evaluated by this event algorithm are:

(a) If pCurrentState is NORMAL, and pFeedbackValue is not equal to pMonitoredValue for pTimeDelay, then indicate a transition to the OFFNORMAL event state.

(b) If pCurrentState is OFFNORMAL, and ~~pMonitoredValue~~ *pFeedbackValue* is equal to pMonitoredValue for pTimeDelayNormal, then indicate a transition to the NORMAL event state.

28) Clause 21. FORMAL DESCRIPTION OF APPLICATION PROTOCOL DATA UNITS The long dash "—" should be two minus signs "--", and "date" should say "time", in both places**.**

TimePattern ::= [APPLICATION 11] OCTETSTRING (SIZE(4)) -- see Clause 20.2.13
-- first octet hour (0..23), X'FF' = unspecified
-- second octet minute (0..59), X'FF' = unspecified
-- third octet second (0..59), X'FF' = unspecified
-- fourth octet hundredths (0..99) X'FF' = unspecified
Time ::= TimePattern —- restricted to be a specific ~~date~~ *time* or an unspecified ~~date~~ *time*, see Clause 3

29) 12.1.8 Reliability, the verbiage crossed was deleted in Addenda CO but was not brought into the standard with the addenda

12.1.8 Reliability

Several object types defined in this clause have a property called "Reliability" that indicates the existence of fault conditions for the object. Reliability-evaluation is the process of determining the value for this property. See Clause 13.2.2.2.

The different values that the Reliability property can take on are described below. Note that not all values are applicable to all object types.

~~The first stage of reliability-evaluation is internal to the object and is completely defined by the device's vendor. The second stage, which is only found in certain object types, is the application of a fault algorithm. Faults detected in the first stage shall take precedence over faults detected in the second stage. See Clause 13.4 for fault algorithm definitions and see the object type definitions to determine the fault algorithm supported by any particular object type~~. The different values that the Reliability property can take on are described below. Note that not all values are applicable to all object types.

30) Annex-L "BACnet device profiles are categorized into families", do not list in the bullet list of families Authentication and Authorization B-AS

BACnet device profiles are categorized into families:

- Operator Interfaces. This family is composed of B-XAWS, B-AWS, B-OWS, and B-OD.
- Lighting Operator Interfaces. This family is composed of B-XAWS, B-ALWS, and B-LOD.
- Life Safety Operator Interfaces. This family is composed of B-ALSWS, B-LSWS, and B-LSAP.
- Access Control Operator Interfaces. This family is composed of B-XAWS, B-AACWS, B-ACWS, and B-ACSD.
- Elevator Operator Interfaces. This family is composed of B-XAWS, B-AEWS, B-EWS, and B-ED.
- Lighting Control Stations. This family is composed of B-ALCS and B-LCS.
- Controllers. This family is composed of B-BC, B-AAC, B-ASC, B-SA, and B-SS.
- Lighting Controllers. This family is composed of B-LS and B-LD.
- Life Safety Controllers. This family is composed of B-ALSC and B-LSC.
- Access Control Controllers. This family is composed of B-AACC and B-ACC.
- Elevator Controllers. This family is composed of B-AEC, B-EC, and B-EM.
- *Authentication and Authorization. This family is composed of B-AS.*
- Miscellaneous. This family is composed of B-RTR, B-GW, B-BBMD, B-ACDC, B-ACCR, and B-SCHUB.

31) Annex A BACnet Standardized Device Profiles Supported (Annex L), no listing check box for Authorization Server (B-AS)

☐ BACnet Advanced Elevator Controller (B-AEC)
☐ BACnet Elevator Controller (B-EC)
☐ BACnet Elevator Monitor (B-EM)
☐ BACnet Router (B-RTR)
☐ BACnet Gateway (B-GW)
☐ BACnet Broadcast Management Device (B-BBMD)
☐ BACnet Access Control Door Controller (B-ACDC)
☐ BACnet Access Control Credential Reader (B-ACCR)
☐ BACnet Secure Connect Hub (B-SCHUB)
☐ BACnet Device Address Proxy (B-DAP)
☐ *BACnet Authorization Server (B-AS)*

☐ BACnet General (B-GENERAL)

32) Annex Y statement of deprecation should be in Y.21.1 and 3 moved from Y.21.2 and 4

Y.21.1 'writableWhen'
This optional metadata, of type Enumerated, has been deprecated. If present, it shall be ignored.

Y.21.2 ~~This optional metadata, of type Enumerated, has been deprecated. If present, it shall be ignored.~~'writableWhenText'

This optional localizable metadata, of type String, is used to provide display text for the writability condition. The 'writableWhenText' metadata can contain arbitrary text that shall consist of plain printable characters with no formatting markup or line breaks.
…

Y.21.3 'requiredWhen'

This optional metadata, of type Enumerated, has been deprecated. If present, it shall be ignored

Y21.4 ~~This optional metadata, of type Enumerated, has been deprecated. If present, it shall be ignored.~~'requiredWhenText'

This optional localizable metadata, of type String, is used to provide display text for the presence requirements. The 'requiredWhenText' metadata can contain arbitrary text that shall consist of plain printable characters with no formatting markup or line breaks.

1) Clause 12.62.5 Present_Stage to identifying properties that are intended to be read-only. Adding read only to property name.

12.62.5 Present_Stage
This *read-only* property, of type Unsigned, shall indicate the array index (1 to **Nstages**) that corresponds to the current active stage or 0 meaning that the Present_Stage has not yet been initialized. Upon device restart, or when the Stages property is written to any of its elements, or the size of the Stages array changes, Present_Stage shall be set to 0 temporarily and then Present_Value shall be reevaluated as described in Clause 12.62.4.1.

2) Clause 12.28.7 Status_Flags duplicated the 4 status flag descriptions.

{IN_ALARM, FAULT, OVERRIDDEN, OUT_OF_SERVICE}

IN_ALARM	Logical FALSE (0) if the Event_State property has a value of NORMAL, otherwise logical TRUE (1).
FAULT	Logical TRUE (1) if the Reliability property is present and does not have a value of NO_FAULT_DETECTED, otherwise logical FALSE (0).
OVERRIDDEN	The value of this flag shall be logical FALSE (0).
OUT_OF_SERVICE	The value of this flag shall be logical FALSE (0).

~~IN_ALARM Logical FALSE (0) if the Event_State property has a value of NORMAL, otherwise logical TRUE (1).~~

~~FAULT Logical TRUE (1) if the Reliability property is present and does not have a value of NO_FAULT_DETECTED, otherwise logical FALSE (0).~~

~~OVERRIDDEN Logical TRUE (1) if the point has been overridden by some mechanism local to the BACnet device, otherwise logical FALSE (0).~~
~~OUT_OF_SERVICE This bit shall always be Logical FALSE (0).~~

4) Clause 21.6 Base Types BACnetEngineeringUnits ::= ENUMERATED { -- See below for numerical order -- Acceleration**do** under –Energyactive-energy-pulse-value value is (47910) and should be (47918) as show in -- Numerical Order Reference **(Eric Miller)**

mega-btus	(148),	
therms	(21),	-- 100,000 British thermal units
ton-hours	(22),	-- short tons refrigeration by time
active-energy-pulse-value	(4791~~0~~*8*),	-- i.e. 1/(Wh)
reactive-energy-pulse-value	(47919),	-- i.e. 1/(VARh)
apparent-energy-pulse-value	(47920),	-- i.e. 1/(VAh)
volt-squared-hour-pulse-value	(47921),	-- i.e. 1/(V2h)
ampere-squared-hour-pulse-value	(47922),	-- i.e. 1/(A2h)

.

5) AA.2.1.2 references 12.56.99 for info on issuer certificate files

Each response file shall contain a subfolder of 'cert1' named 'issuer'. This folder shall contain at least one and no more than two issuer certificate files. These certificate files are destined for the files referenced by the Issuer_Certificate_Files property of the Network Port objects. See Clause 12.56.~~99~~*101*. These files shall be named 'iss-1.pem' and 'iss-2.pem'.

6) **AA.2.1.2 references 12.56.8 for info on operational certificate file. But 12.56.8 is for Out_Of_Service.**

If the operational certificate file exists for the corresponding CSR file, the port folder shall contain the operational certificate file. The operational certificate file shall be in PEM format and named 'opr-<string>.pem' where 'string' matches the 'string' in the name of 'csr-<string>.pem'. This file is destined for the file referenced by the Operational_Certificate_File property of the Network Port object for the port. See Clause 12.56.~~8~~*100* and Clause AB.7.4.1.1.

7) 12.56.102 references 12.56.99 for info on operational certificates

If the GENERATE_CSR_FILE command is supported, the certificate signing request file shall be updated and a new private/public key pair shall be generated when the Command property is written to GENERATE_CSR_FILE. The certificate signing request file shall contain the X.509 'subject' distinguished name specified in the currently active operational certificate, see Clause 12.56.~~99~~*100*, and the public key from the new private/public key pair. If no operational certificate is currently active, then the X.509 'subject' distinguished name of the certificate signing request is a local matter but shall be globally unique.

8) 12.56.16 references 12.56.100 for info on certificate signing request file

GENERATE_CSR_FILE	If this port supports this command, this command shall generate a new certificate signing request file. The new certificate signing request file shall be referenced from the Certificate_Signing_Request_File property. See Clause 12.56.10~~0~~*2*. The new certificate signing request file shall contain a new public key from a newly generated public/private key pair.

9) 12.56.18 references 12.56.13, which is Network_Number, should instead reference 12.56.16 which is 'Command'.

This read-only property, of type BACnetHealth, indicates any errors detected as a result of writing VALIDATE_CHANGES to the Command property. This property shall be present if the VALIDATE_CHANGES command is supported. See Clause 12.56.1~~3~~*6*. The BACnetHealth structure is described in Clause 12.56.17.

10) 12.56.89 references 12.56.86 should instead reference 12.56.88 since that explains the BACnetSCHubConnection structure

This read-only property, of type BACnetSCHubConnection, indicates the status and associated information about the failover hub connection initiated by the hub connector. The BACnetSCHubConnection structure is described in Clause 12.56.8~~6~~*8*.