ADDENDA

ANSI/ASHRAE Addendum bv to
ANSI/ASHRAE Standard 135-2020

ASHRAE BACnet™

A Data Communication Protocol for Building Automation and Control Networks

Approved by ASHRAE and the American National Standards Institute on January 21, 2022.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Instructions for how to submit a change can be found on the ASHRAE® website (https://www.ashrae.org/continuous-maintenance).

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

FOREWORD

The purpose of this addendum is to present a proposed change for public review. These modifications are the result of change proposals made pursuant to the ASHRAE continuous maintenance procedures and of deliberations within Standing Standard Project Committee 135. The proposed changes are summarized below.

135-2020bv-1. Add new property Write_Every_Scheduled_Action to the Schedule object, p. 3
135-2020bv-2. Fix XML namespace, p. 5

In the following document, language to be added to existing clauses of ANSI/ASHRAE 135-2020 and Addenda is indicated through the use of *italics*, while deletions are indicated by ~~strikethrough~~. Where entirely new subclauses are proposed to be added, plain type is used throughout. Only this new and deleted text is open to comment at this time. All other material in this document is provided for context only and is not open for public review comment except as it relates to the proposed changes.

The use of placeholders like X, Y, Z, X1, X2, N, NN, x, n, ?, etc., should not be interpreted as literal values of the final published version. These placeholders will be assigned actual numbers/letters only after final publication approval of the addendum.

135-2020*bv*-1. Add new property Write_Every_Scheduled_Action to the Schedule object

Rationale

IC135-2010-1 clarifies that it is a local matter how the Schedule object behaves on a transition to a new time-value pair in effect that results in an unchanged Present_Value.

This change adds a new property that indicates if the Present_Value is written to properties referenced on a change of the time-value pair in effect, even if the value does not change.

[Change **Table 12-28**, p. 292]

Table 12-28. Properties of the Schedule Object Type

Property Identifier	Property Datatype	Conformance Code
…		
Reliability_Evaluation_Inhibit	BOOLEAN	O
Write_Every_Scheduled_Action	*BOOLEAN*	*O*
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R
Tags	BACnetARRAY[N] of BACnetNameValue	O
Profile_Location	CharacterString	O
Profile_Name	CharacterString	O

[1] At least one of these properties is required**.**
[2] These properties are required if the object supports intrinsic reporting.
[3] These properties shall be present only if the object supports intrinsic reporting.

[Change **Clause 12.24.4**, p. 293]

12.24.4 Present_Value

This property indicates the current value of the schedule, which may be any primitive datatype. As a result, most analog, binary, and enumerated values may be scheduled. This property shall be writable when Out_Of_Service is TRUE (see Clause 12.24.14).

~~Any change in the value of this property shall be written to all members of the List_Of_Object_Property_References property. An error writing to any member of the list shall not stop the Schedule object from writing to the remaining members.~~

The normal calculation of the value of the Present_Value property is illustrated as follows (the actual algorithm used is a local matter but shall yield the same results as this one):

1. Find the highest relative priority (as defined by Clause 12.24.8) Exception_Schedule array element that is in effect for the current day and whose current value (see method below) is not NULL, and assign that value to the Present_Value property.
2. If the Present_Value was not assigned in the previous step, then evaluate the current value of the Weekly_Schedule array element for the current day and if that value is not NULL, assign it to the Present_Value property.
3. If the Present_Value was not assigned in the previous steps, then assign the value of the Schedule_Default property to the Present_Value property.

The method for evaluating the current value of a schedule (either exception or weekly) is to find the latest element in the list of BACnetTimeValues that occurs on or before the current time, and then use that element's value as the current value for the schedule. If no such element is found, then the current value for the schedule shall be NULL.

These calculations are such that they can be performed at any time and the correct value of Present_Value property will result. These calculations shall be performed at 00:00 each day, whenever the device resets, whenever properties that can affect the results are changed, whenever the time in the device changes by an amount that may have an effect on the

calculation result, and at other times, as required, to maintain the correct value of the Present_Value property through the normal passage of time.

Note that the Present_Value property will be assigned the value of the Schedule_Default property at 00:00 of any given day, unless there is an entry for 00:00 in effect for that day. If a scheduled event logically begins on one day and ends on another, an entry at 00:00 shall be placed in the schedule that is in effect for the second day, and for any subsequent days of the event's duration, to ensure the correct result whenever Present_Value is calculated.

Any change in the value of this property shall be written to all members of the List_Of_Object_Property_References property. An error writing to any member of the list shall not stop the Schedule object from writing to the remaining members.

If the Write_Every_Scheduled_Action property is present and TRUE, all members of the List_Of_Object_Property_References property shall be written when a new time-value pair or when the Schedule_Default property comes into effect regardless of whether the value of the Present_Value property changes or not (see Clause 12.24.X).

[Insert new **Clause 12.24.x,** p. 297]

12.24.X Write_Every_Scheduled_Action

This property, of type BOOLEAN, indicates whether (TRUE) or not (FALSE) the value of the Present_Value property shall be written to the members of the List_Of_Object_Property_References property when a new time-value pair or when the Schedule_Default property comes into effect, regardless of the resulting value of the Present_Value property. This includes a new time-value pair coming into effect due to a change in the device's time.

When Write_Every_Scheduled_Action is FALSE, or not present, the schedule shall write to the members of the List_Of_Object_Property_References property only when the calculated Present_Value has changed, or the previously calculated Present_Value is unknown due to external influences, such as might be the case after a device restart.

[Insert into production **BACnetPropertyIdentifier** in **Clause 21**, p. 845]

BACnetPropertyIdentifier ::= ENUMERATED { -- see below for numerical order

```
        . . .
        window-samples                  (148),
        write-every-scheduled-action    (4194333),
        . . .
-- numerical order reference
        . . .
        -- see represents               (491),
        -- see write-every-scheduled-action  (4194333),

. . .
```

135-2020*bv*-2. Fix XML namespace

Rationale

The namespace is currently defined in Clause Q.2.1, which defines the <CSML> wrapper for use "in file contexts". However, immediately above Q.2.1, the standard shows that for "other contexts", any element can be the top-level element. Being "top-level" implies that it must include xmlns and other top-level things like defaultLocale. So the definition of the xmlns seems misplaced.

Additionally, and unfortunately, all of the examples (50 of them) show the xmlns as "http://bacnet.org/csml/1.2". It is therefore not entirely clear whether we should change all the examples or to change the definition to match the examples, since, for example, the GitLab files followed the shorter format of the examples, ignoring the definition in Clause Q.2.1.

This proposal suggests using the shorter lowercase format from now on. Additionally, since we intend to always have earlier versions be a subset of the current version, there is no reason for consumers to reject earlier versions. So for interoperability, this proposal "raises the bar" for consumers to be required to accept earlier versions and the "variant" from the examples: "http://bacnet.org/csml/1.2".

[Change **Clause Q.2**, p. 1144]

Q.2 XML Document Structure

The XML elements and attributes defined in this annex may be used for a variety of purposes. *When stored in files, they* ~~and~~ are always enclosed in a <CSML> element~~ when stored in files~~. [remove paragraph break] When used in other contexts, such as web services, any of the elements, other than <Definitions>, <TagDefinitions>, and <Includes>, that are defined as allowed children of <CSML> can be used as the top level element. In these cases, the XML namespace specifier and optional *attributes* ~~'defaultLocale' attribute~~ defined for the CSML element shall be placed on the top level element.

The current XML namespace is "http://bacnet.org/csml/1.4". Since this standard makes changes to the XML syntax by addition rather than redefinition, it is required that implementations also accept past namespaces as a proper subset of the current namespace. The past namespaces are:

a) "http://www.bacnet.org/CSML/1.0"
b) "http://www.bacnet.org/CSML/1.1"
c) "http://www.bacnet.org/CSML/1.2"
d) "http://www.bacnet.org/CSML/1.3"
e) "http://bacnet.org/csml/1.2"

[Change **Clause Q.2.1**, p. 1145]

Q.2.1 <CSML>

When used in a file context, the XML syntax defined by this annex is enclosed in the element <CSML> ("Control Systems Modeling Language") ~~that has an xml namespace of "http://www.bacnet.org/CSML/1.2"~~.

[Change **Clause Q.1.1.1**, p. 1141]

Q.1.1.1 XML Requirements and Restrictions

...

Consumers are required to:

(a) parse and check *that* the ~~single~~ default namespace specifier "xmlns" ~~specified~~*matches the values listed* in Clause ~~Q.2.1~~ *Q.2*.

(b) …

135-2020[Add a new entry to **History of Revisions**, p. 1364]

HISTORY OF REVISIONS

. . .	. . .	. . .
1	24	**Addendum *bv* to ANSI/ASHRAE Standard 135-2020** Approved by ASHRAE on MONTH DAY, 20XX; and by the American National Standards Institute on MONTH DAY, 20XX. 1. Add new property Write_Every_Scheduled_Action to the Schedule object 2. Fix XML namespace 3. Preventing Remote Traffic Duplication

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

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

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