ANSI/ASHRAE Addendum v to
ANSI/ASHRAE Standard 135-2008

ASHRAE STANDARD

BACnet®—A Data Communication Protocol for Building Automation and Control Networks

Approved by the ASHRAE Standards Committee on June 20, 2009; by the ASHRAE Board of Directors on June 24, 2009; and by the American National Standards Institute on June 25, 2009.

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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

Addendum 135*v* to ANSI/ASHRAE Standard 135-2008 contains a number of changes to the current standard. These modifications are the result of change proposals made pursuant to the ASHRAE continuous maintenance procedures and of deliberations within Standing Standard Project Committee 135. The changes are summarized below.

135-2008*v*-1. Fix the MS/TP TokenCount Value, p. 2.
135-2008*v*-2. Clarify "Supported", p. 5.
135-2008*v*-3. Remove NM-CE-A from Device Profiles, p. 6.

In the following document, language to be added to existing clauses of ANSI/ASHRAE 135-2008 and Addenda is indicated through the use of *italics*, while deletions are indicated by ~~strikethrough~~. Where entirely new subclauses are added, plain type is used throughout.

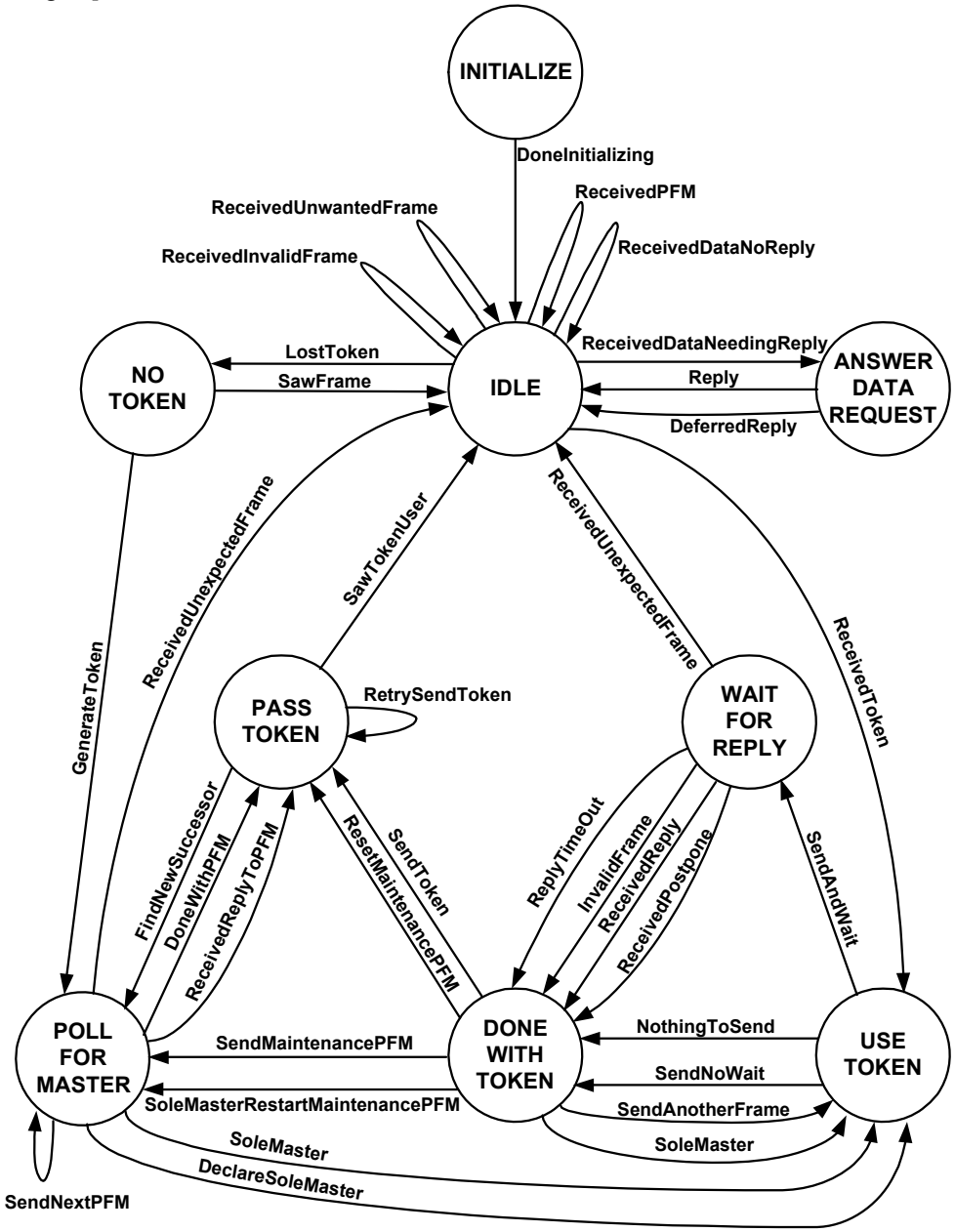
135-2008*v*-1 Fix the MS/TP TokenCount value.

Rationale
Under certain conditions an MS/TP master node may send a token addressed to itself. As a result, a bogus packet is emitted on the network; when this occurs, the token is dropped and must be re-generated. This behavior was observed in a real-world installation and was reproducible. Subsequent analysis revealed a bug in the MS/TP master-node-state machine. This happens because TokenCount variable is not always set to N_{poll} when NS is set to TS, and this condition is not fixed when the node receives an unexpected frame and enters the IDLE state.

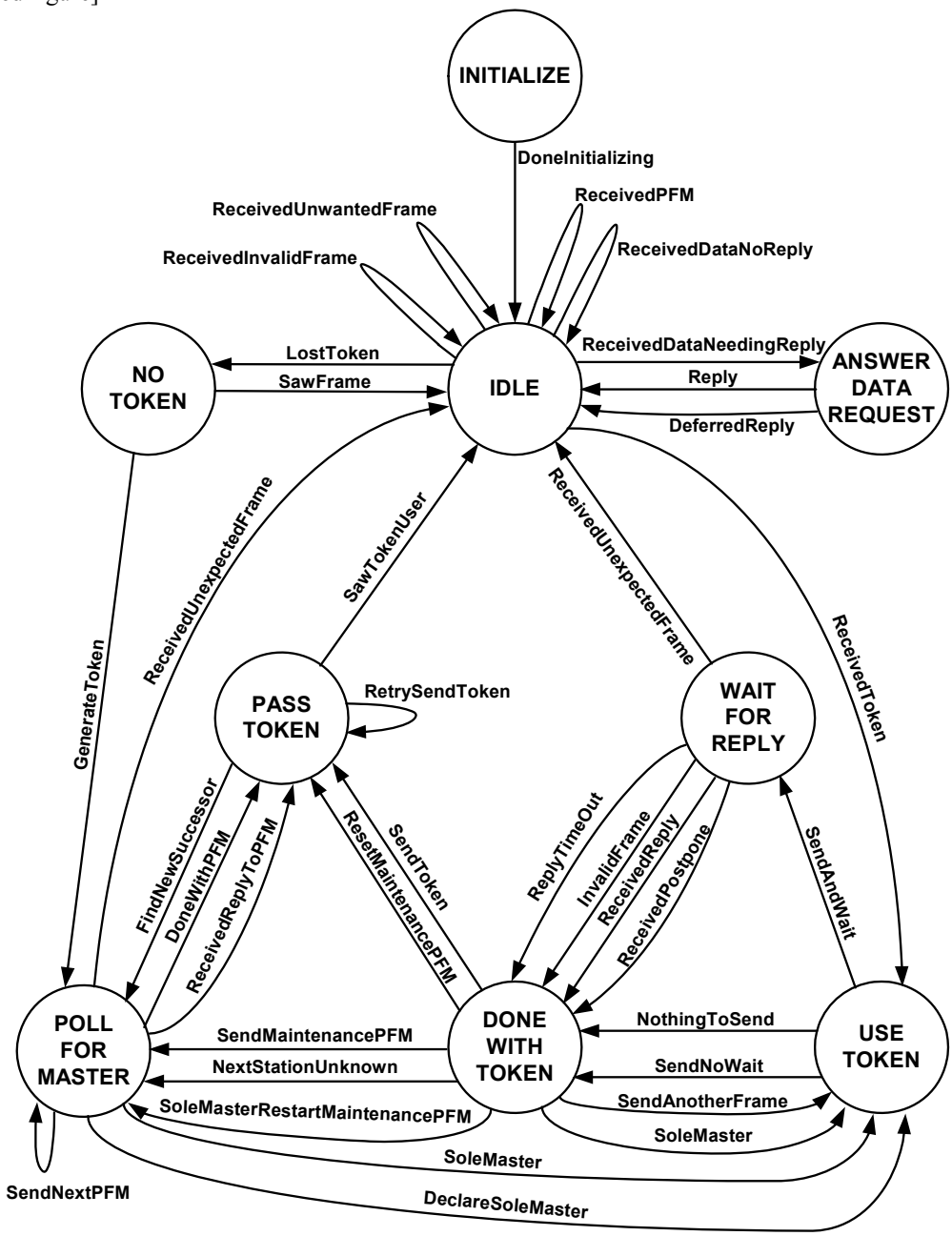
Addendum 135-2008*v*-1

[Change **Figure 9-4**, p. 86]

[current figure]



[revised figure]



[Change Clause **9.5.6.5**, p. 89]

9.5.6.5 DONE_WITH_TOKEN

The DONE_WITH_TOKEN state either sends another data frame, passes the token, or initiates a Poll For Master cycle.

SendAnotherFrame

If FrameCount is less than $\mathbf{N}_{\mathbf{max\_info\_frames}}$,

then this node may send another information frame before passing the token. Enter the USE_TOKEN state.

NextStationUnknown

If FrameCount is greater than or equal to $N_{max\_info\_frames}$*, SoleMaster is FALSE and NS is equal to TS,*

then the next station to which the token should be sent is unknown. Set PS to (TS+1) modulo (N_{max_master}*+1); call SendFrame to transmit a Poll For Master frame to PS; set RetryCount to zero; and enter the POLL_FOR_MASTER state.*

SoleMaster

If FrameCount is greater than or equal to $N_{max\_info\_frames}$ and TokenCount is less than N_{poll}–1 and SoleMaster is TRUE,

then there are no other known master nodes to which the token may be sent (true master-slave operation). Set FrameCount to zero, increment TokenCount, and enter the USE_TOKEN state.

…

135-2008*v*-2. Clarify "Supported".

Rationale
The word "Supported" in Protocol_Services_Supported, and Prortocol_Objects_Supported needs to be clarified to match its intent.

Addendum 135-2008*v*-2

[Change Clause **12.11.14**, p. 180.]

12.11.14 Protocol_Services_Supported

This property, of type BACnetServicesSupported, indicates which standardized protocol services are ~~supported~~ *executed* by this device's protocol implementation.

[Change Clause **12.11.15**, p. 180.]

12.11.15 Protocol_Object_Types_Supported

This property, of type BACnetObjectTypesSupported, indicates which standardized object types ~~are supported by~~ *can be present in* this device's protocol implementation. The list of properties ~~supported for~~ *present in* a particular object may be acquired by use of the ReadPropertyMultiple service with a property reference of ALL (see 15.7.3.1.2).

135-2008*v*-3. Remove NM-CE-A from device profiles.

Rationale
The PTP connection establishment mechanism has identified deficiencies in certain situations. Until those deficiencies are addressed, the requirement for the inclusion of the PTP connection establishment BIBBs is removed.

Addendum 135-2008*v*-3

[Change the following table in Clause **L.7**, p. 645.]

L.7 Profiles of the Standard BACnet Devices

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

…

	B-OWS	**B-BC**	**B-AAC**	**B-ASC**	**B-SA**	**B-SS**
Device &	DM-DDB-A,B	DM-DDB-A,B	DM-DDB-B	DM-DDB-B	DM-DDB-B[1]	DM-DDB-B[1]
Network Mgmt	DM-DOB-B	DM-DOB-B	DM-DOB-B	DM-DOB-B	DM-DOB-B[1]	DM-DOB-B[1]
	DM-DCC-A	DM-DCC-B	DM-DCC-B	DM-DCC-B		
	DM-TS-A	DM-TS-B or DM-UTC-B	DM-TS-B or DM-UTC-B			
	DM-UTC-A					
	DM-RD-A	DM-RD-B	DM-RD-B			
	DM-BR-A	DM-BR-B				
	~~NM-CE-A~~	~~NM-CE-A~~				

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

[Add a new entry to **History of Revisions**, p. 688]

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

HISTORY OF REVISIONS

Protocol		***Summary of Changes to the Standard***
Version	***Revision***	
…	…	**…**
1	9	**Addendum *v* to ANSI/ASHRAE 135-2008** Approved by the ASHRAE Standards Committee June 20, 2009; by the ASHRAE Board of Directors June 24, 2009; and by the American National Standards Institute June 25, 2009. 1. Fix the MS/TP TokenCount Value. 2. Clarify "Supported". 3. Remove NM-CE-A from Device Profiles.

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

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

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

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

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

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

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.