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

Public Review Draft

ASHRAE® Standard

Proposed Addendum *v* to Standard 135-2008, *BACnet®—A Data Communication Protocol for Building Automation and Control Networks*

First Public Review (March 2009)
(Draft Shows Changes to the Current Standard)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed addendum, go to the ASHRAE website at http://www.ashrae.org/technology/page/331 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 web site) remains in effect. The current edition of any standard may be purchased from the ASHRAE Bookstore @ http://www/ashrae.org or by calling 404-636-8400 or 1-800-527-4723 (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 web site @ http://www/ashrae.org.

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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.

135-2008*v*-1. Fix the MS/TP TokenCount Value, p. 3.
135-2008*v*-2. Clarify "Supported", p. 6.
135-2008*v*-3. Remove NM-CE-A from Device Profiles, p. 7.

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 proposed to be added, plain type is used throughout. Only this new and deleted text is open to comment as this time. All other material in this addendum is provided for context only and is not open for public review comment except as it relates to the proposed changes.

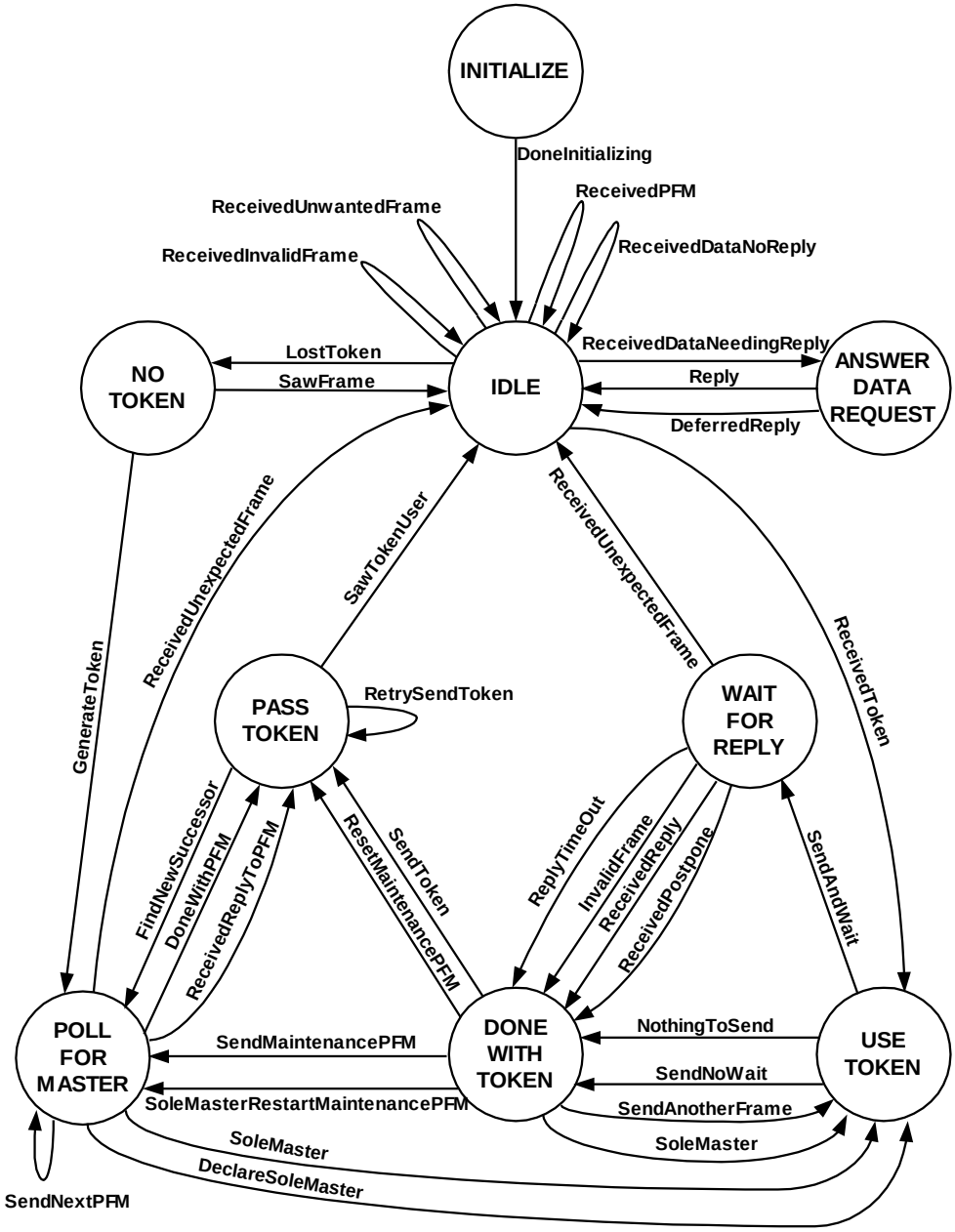
135-2008*v*-1 Fix the MS/TP TokenCount value.

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.

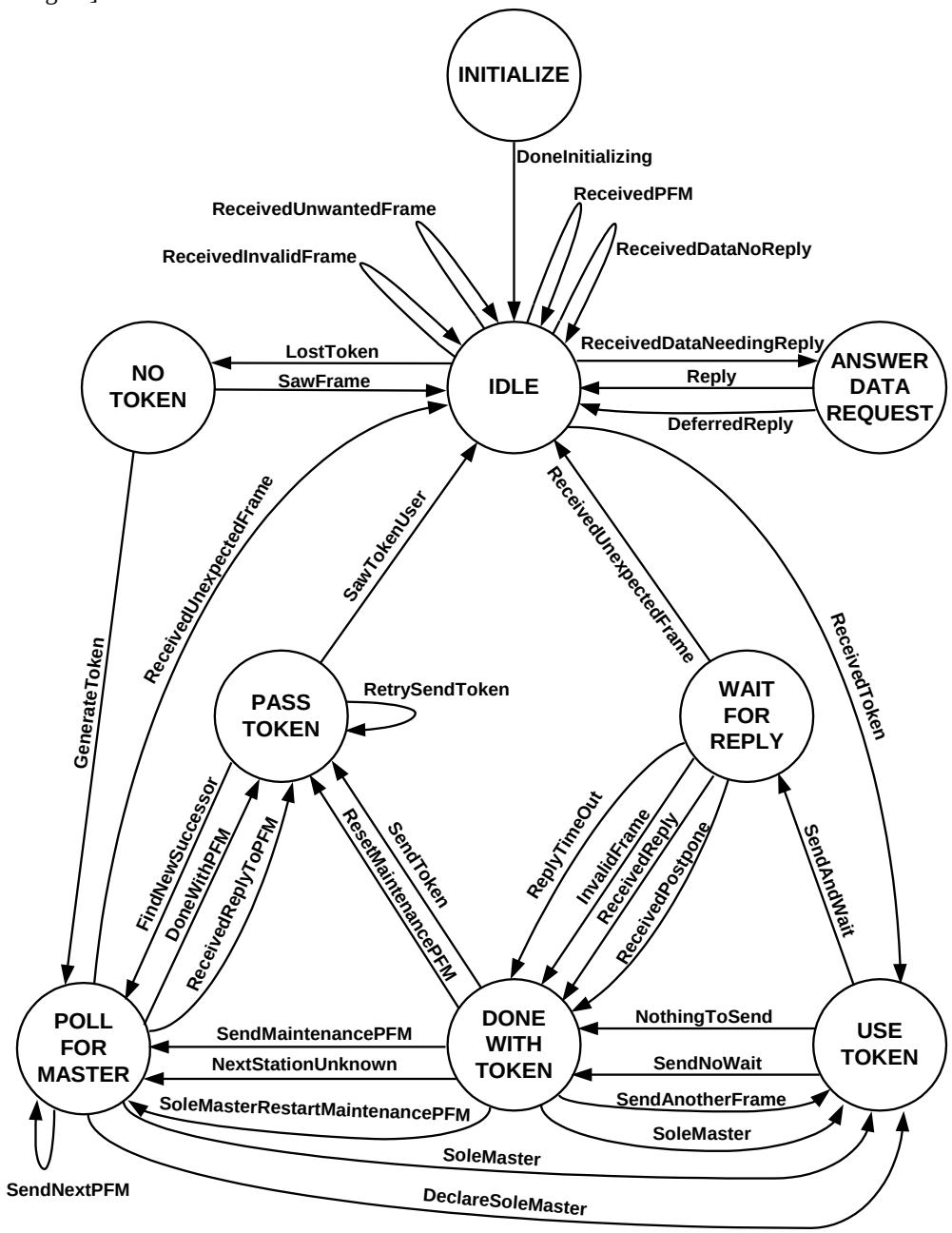
Addendum 135-2008*v*-1

[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 $\boldsymbol{N}_{\boldsymbol{max\_info\_frames}}$*, 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