INTERPRETATION IC 135-2012-12 OF ANSI/ASHRAE STANDARD 135-2012 BACnet® - A Data Communication Protocol for Building Automation and Control Networks

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Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE Standard 135-2012, Clause 5, regarding all Property MaxSegmentsAccepted, Client State Machine.

Background: Some quotes from the client statemachine:

5.4.4 State Machine for Requesting BACnet User (client)

5.4.4.1 IDLE

In the IDLE state, the device waits for the local application program to request a service.

SendUnconfirmed
If UNCONF_SERV.request is received from the local application program,
then issue an N-UNITDATA.request with 'data_expecting_reply' = FALSE to transmit a BACnet-Unconfirmed-Request-PDU, and enter the IDLE state.

SendConfirmedUnsegmented
If CONF_SERV.request is received from the local application program and the length of the APDU is less than or equal to maximum-transmittable-length as determined according to 5.2.1, then assign an 'invokeID' to this transaction; set SentAllSegments to TRUE; set RetryCount to zero; start RequestTimer; issue an N-UNITDATA.request with 'data_expecting_reply' = TRUE to transmit a BACnet-Confirmed-Request-PDU with 'segmented-message' = FALSE; and enter the AWAIT_CONFIRMATION state to
await a reply.

5.2.1
…
If the sending device is the requesting BACnet-user, i.e., the message to be sent is a confirmed-Request, then the maximum number of segments accepted by the remote peer device is specified in the Max_Segments_Accepted property of the remote peer's Device object.

So a client when trying to send a request “SendConfirmedUnsegmented” to a device is supposed to follow the rules from 5.2.1 for calculating the possible size of the request. 5.2.1 seems to indicate that the Max_Segments_accepted property should be considered to calculate the maximum possible request size. If that property contains a value of zero the client might interpret that as not beeing allowed to send anything at all to the device in question.

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A device implementation, that has segmentation support for transmit only but not for receive might consider it correct to only provide a value of zero for MaxSegmentsAccepted with the argument, that the value should not matter because it does not support incoming segmentation anyways.

Interpretation: If the property MaxSegmentsAccepted is present in a device object its value must be at least one.

Question: Is this interpretation correct?

Answer: Yes

Comments: Furthermore, for devices which support receiving segmented messages (Segmentation_Supported has a value of SEGMENTED_BOTH or SEGMENTED_RECEIVE), the Max_Segments_Accepted property shall have a value greater than 1 (see *Interpretation 135-2010-11 – November 7, 2012*).