



# **BACeye/SC: BACnet Protocol Implementation Conformance Statement**

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## 1 Preface

This document describes the BACnet functionality implemented in the BACnet Explorer „BACeye/SC“.

## 2 BACnet PICS BACeye

Date:	2021, May 10
Vendor Name:	MBS GmbH (Vendor-ID: 50)
Product Name:	BACeye/SC
Product Model Number:	BACeye
Application Software Version:	3.0.0.15
Firmware Revision:	22.0
BACnet Protocol Version:	1
BACnet Protocol Revision:	22

### 2.1 Product Description:

BACeye is a BACnet Browser and Explorer. It allows scanning and browsing BACnet devices on the network, viewing and modifying properties. In addition, schedule and calendar objects may be displayed and modified. Recorded data from logging objects, Trendlog, Trendlogmultiple, Eventlog or Auditlog, may be retrieved and displayed or exported. EventNotifications can be received and displayed. Creation of EDE-files is supported. Backup and Restore is supported for single devices or for sets of devices. BACeye/SC can be directly connected to BACnet/IPv4 or BACnet/SC networks. For accessing devices on different datalayer types BACnet routers like the MBS UBR series of devices can be used.

BACeye/SC is designed for Microsoft Windows 10 (may work on older versions or server version as well)

### 2.2 BACnet Standardized Device Profile (Annex L):

- BACnet Advanced Operator Workstation (B-AWS)
- BACnet OperatorWorkstation (B-OWS)
- BACnet Operator Display (B-OD)
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)

### 2.3 List all BACnet Interoperability Building Blocks Supported (Annex K):

#### *K.1. Data-Sharing BIBBs*

Data Sharing Read-Property-A	DS-RP-A
Data Sharing Read-Property-B	DS-RP-B
Data Sharing Read-Property-Multiple-A	DS-RPM-A
Data Sharing Read-Property-Multiple-B	DS-RPM-B
Data Sharing Write-Property-A	DS-WP-A
Data Sharing Write-PropertyMultiple-A	DS-WPM-A
Data Sharing COV-A	DS-COV-A
Data Sharing View – A	DS-V-A
Data Sharing Advanced View – A	DS-AV-A
Data Sharing Modify – A	DS-M-A
Data Sharing Advanced Modify – A	DS-AM-A

### **K.2. Alarm and Event BIBBs**

Alarm and Event Notification – A	AE-N-A
Alarm and Event ACK – A	AE-ACK-A
Alarm and Event Management View Notifications – A	AE-VN-A
Alarm and Event Alarm Summary View A	AE-AS-A
Alarm and Event Management View and Modify – A	AE-VM-A
Alarm and Event Management Event Log View – A	AE-ELV-A
Alarm and Event Management Event Log View and Modify – A	AE-ELVM-A

### **K.3. Scheduling BIBBs**

Scheduling - A	SCHED-A
Scheduling View and Modify - A	SCHED-VM-A

### **K.4. Trending BIBBs**

Trending Viewing and Modifying Trends - A	T-VMT-A
Trending View - A	T-V-A

### **K.5. Device Management BIBBs**

Device Management Dynamic Device Binding-A	DM-DDB-A
Device Management Dynamic Device Binding-B	DM-DDB-B
Device Management Dynamic Object Binding-B	DM-DOB-B
Device Management Device Communication Control A	DM-DCC-A
Device Management Reinitialize Device A	DM-RD-A
Device Management Backup and Restore-A	DM-BR-A
Device Management Automatic Network Mapping-A	DM-ANM-A
Device Management Automatic Device Mapping-A	DM-ADM-A
Device Management Manual Time Synchronization A	DM-MTS-A

### **K.5. Network Management BIBBs**

No Network Management BIBBs supported.

### **K.5. Network Security BIBBs**

No Network Security BIBBs supported.

## **2.4 Segmentation Capability:**

- Segmented requests supported      Window Size: 8
- Segmented responses supported      Window Size: 8

#### Data Link Layer Options:

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
- ANSI/ATA 878.1, RS-485 ARCNET (Clause 8) baud rate(s) \_\_\_\_\_
- MS/TP master (Clause 9), baud rate(s):
- MS/TP slave (Clause 9), baud rate(s):
- Point-To-Point, EIA 232 (Clause 10) baud rate(s) \_\_\_\_\_
- Point-To-Point, modem, (Clause 10) baud rate(s) \_\_\_\_\_
- LonTalk, (Clause 11) medium: \_\_\_\_\_

- BACnet Secure Connect (Annex AB)
  - BACnet Secure Connect Node
    - If direct connections are supported:
      - Maximum number of simultaneous direct connections initiated: \_\_\_\_\_
      - Maximum number of simultaneous direct connections accepted: \_\_\_\_\_
  - BACnet Secure Connect Hub Function
    - Maximum number of simultaneous hub connections accepted: \_\_\_\_\_
  - HTTPS Proxy Support
    - List the types of HTTP proxies supported: \_\_\_\_\_
  - Additional cipher suites supported beyond those required for TLS V1.3
    - The additional cipher suites supported using the cipher suite names as of the TLS Cipher Suite Registry at IANA (See RFC 8446):  
\_\_\_\_\_
  - Additional Transport LayerSecurity versions other than V 1.3 supported
    - The additional cipher suites supported using the cipher suite names as of the TLS Cipher Suite Registry at IANA (See RFC 8446):  
\_\_\_\_\_
  - Generate private keys internally and provides matching certificate signing requests.
  - DNS host name resolution supported (RFC 1123)
  - mDNS host name resolution supported (RFC 6762)
  - Other

## 2.5 Device Address Binding:

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.)

- Yes
- No

## 2.6 Networking Options:

- Router, Clause 6
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)
  - Does the BBMD support registrations by Foreign Devices?
    - Number of FD-Entries: \_\_\_\_\_

## 2.7 Character Sets Supported:

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

- ISO 10646 (UTF-8)
- IBM/Microsoft DBCS
- ISO 8859-1
- ISO 10646 (UCS-2)
- ISO 10646 (UCS-4)
- JIS C 6226

**If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports:**

BACeye is not a communication gateway.

## 2.8 Standard Object Types Supported:

The supported object-types are:

- Device (8)
- Network Port (56)

Creation and Deletion of objects is not supported.

BACeye does not contain any writable properties.

BACeye does not contain any proprietary properties.

### Device

Property Identifier	Property Datatype	Conf.Code	BACeye
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
System_Status	BACnetDeviceStatus	R	R
Vendor_Name	CharacterString	R	R
Vendor_Identifier	Unsigned16	R	R
Model_Name	CharacterString	R	R
Firmware_Revision	CharacterString	R	R
Application_Software_Version	CharacterString	R	R
Location	CharacterString	O	R
Description	CharacterString	O	R
Protocol_Version	Unsigned	R	R
Protocol_Revision	Unsigned	R	R
Protocol_Services_Supported	BACnetServicesSupported	R	R
Protocol_Object_Types_Supported	BACnetObjectTypesSupported	R	R
Object_List	BACnetARRAY[N] of BACnetObjectIdentifier	R	R
Structured_Object_List	BACnetARRAY[N] of BACnetObjectIdentifier	O	-
Max_APDU_Length_Accepted	Unsigned	R	R
Segmentation_Supported	BACnetSegmentation	R	R
Max_Segments_Accepted	Unsigned	O	R
VT_Classes_Supported	List Of BACnetVTClass	O	-
Active_VT_Sessions	List Of BACnetVTSession	O	-
Local_Time	Time	O	-
Local_Date	Date	O	-
UTC_Offset	INTEGER	O	-
Daylight_Savings_Status	BOOLEAN	O	-
APDU_Segment_Timeout	Unsigned	O	R
APDU_Timeout	Unsigned	R	R
Number_Of_APDU_Retries	Unsigned	R	R
List_Of_Session_Keys	List of BACnetSessionKey	O	-
Time_Synchronization_Recipients	List of BACnetRecipient	O	-
Max_Master	Unsigned(1..127)	O	-
Max_Info_Frames	Unsigned	O	-

Property Identifier	Property Datatype	Conf.Code	BACeye
Device_Address_Binding	List of BACnetAddressBinding	R	R
Database_Revision	Unsigned	R	R
Configuration_Files	BACnetARRAY[N] of BACnetObjectIdentifier	O	-
Last_Restore_Time	BACnetTimeStamp	O	-
Backup_Failure_Timeout	Unsigned16	O	-
Backup_Preparation_Time	Unsigned16	O	-
Restore_Preparation_Time	Unsigned16	O	-
Restore_Completion_Time	Unsigned16	O	-
Backup_And_Restore_State	BACnetBackupState	O	-
Active_COV_Subscriptions	List of BACnetCOVSubscription	O	-
Slave_Proxy_Enable	BACnetARRAY[N] of BOOLEAN	D	-
Manual_Slave_Address_Binding	List of BACnetAddressBinding	D	-
Auto_Slave_Discovery	BACnetARRAY[N] of BOOLEAN	D	-
Slave_Address_Binding	List of BACnetAddressBinding	D	-
Last_Restart_Reason	BACnetRestartReason	O	R
Time_Of_Device_Restart	BACnetTimeStamp	O	R
Restart_Notification_Recipients	List of BACnetRecipient	O	-
UTC_Time_Synchronization_Recipients	List of BACnetRecipient	O	-
Time_Synchronization_Interval	Unsigned	O	-
Align_Intervals	BOOLEAN	O	-
Interval_Offset	Unsigned	O	-
Property_List	BACnetARRAY[N] of PropertyIdentifier	R	R
Serial_Number	CharacterString	O	R
Status_Flags	BACnetStatusFlags	O	-
Event_State	BACnetEventState	O	-
Reliability	BACnetReliability	O	-
Event_Detection_Enable	BOOLEAN	O	-
Acked_Transitions	BACnetEventTransitionBits	O	-
Notify_Type	BACnetNotifyType	O	-
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O	-
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O	-
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O	-
Reliability_Evaluation_Inhibit	BOOLEAN	O	-
Active_COV_Multiple_Subscriptions	BACnetLIST of BACnetCOVMultipleSubscription	O	-
Audit_Notification_Recipient	BACnetRecipient	O	-
Audit_Level	BACnetAuditLevel	O	-
Auditable_Operations	BACnetAuditOperationsFlags	O	-
Device_UUID	OCTET STRING (Size(16))	O	R
Tags	BACnetARRAY[N] of BACnetNameValue	O	-
Profile_Location	CharacterString	O	-
Deployed_Profile_Location	CharacterString	O	-
Profile_Name	CharacterString	O	R

## Network Port

Property Identifier	Property Datatype	Conf.Code	BACeye
Object_Identifier	BACnetObjectIdentifier	R	R
Object_Name	CharacterString	R	R
Object_Type	BACnetObjectType	R	R
Description	CharacterString	O	R
Status_Flags	BACnetStatusFlags	O	R
Reliability	BACnetReliability	R	R
Out_Of_Service	BOOLEAN	R	R
Network_Type	BACnetNetworkType	R	R
Protocol_Level	BACnetProtocolLevel	R	R
Reference_Port	Unsigned	O	-
Network_Number	Unsigned16	O	R
Network_Number_Quality	BACnetNetworkNumberQuality	O	R
Changes_Pending	BOOLEAN	R	R
Command	BACnetNetworkPortCommand	O	-
MAC_Address	OCTET STRING	O	R
APDU_Lenght	Unsigned	O	R
Link_Speed	REAL	R	R
Link_Speeds	BACnetARRAY[N] of REAL	O	-
Link_Speed_Autonegotiate	BOOLEAN	O	R
Network_Interface_Name	CharacterString	O	-
BACnetIP_Mode	BACnetIPMode	O	R
IP_Address	OCTET STRING	O	R
BACnet_IP_UDP_Port	Unsigned16	O	R
IP_Subnet_Mask	OCTET STRING	O	R
IP_Default_Gateway	OCTET STRING	O	R
BACnet_IP_Multicast_Address	OCTET STRING	O	-
IP_DNS_Server	BACnetARRAY[N] of OCTET String	O	R
IP_DHCP_Enable	BOOLEAN	O	-
IP_DHCP_Lease_Time	Unsigned	O	R
IP_DHCP_Lease_Time_Remaining	Unsigned	O	-
IP_DHCP_Server	OCTET STRING	O	-
BACnet_IP_NAT_Traversal	BOOLEAN	O	-
BACnet_IP_Global_Address	BACnetHostNPort	O	-
BBMD_Broadcast_Distribution_Table	BACnetLIST of BACnetBDTEntry	O	-
BBMD_Accept_FD_Registrations	BOOLEAN	O	-
BBMD_Foreign_Device_Table	BACnetLIST of BACnetFDTEEntry	O	-
FD_BBMD_Address	BACnetHostNPort	O	R
FD_Subscription_Lifetime	Unsigned16	O	R
BACnet_IPv6_Mode	BACnetIPMode	O	-
IPv6_Address	OCTET STRING	O	-
IPv6_Prefix_Lenght	Unsigned8	O	-



Property Identifier	Property Datatype	Conf.Code	BACeye
BACnet_IPv6_UDP_Port	Unsigned16	O	-
IPv6_Default_Gateway	OCTET STRING	O	-
BACnet_IPv6_Multicast_Address	OCTET STRING	O	-
IPv6_DNS_Server	BACnetARRAY[N] of OCTET String	O	-
IPv6_Auto_Adressing_enable	BOOLEAN	O	-
IPv6_DHCP_Lease_Time	Unsigned	O	-
IPv6_DHCP_Lease_Time_Remaining	Unsigned	O	-
IPv6_DHCP_Server	OCTET STRING	O	-
IPv6_Zone_Index	CharacterString	O	-
Max_Master	Unsigned8	O	-
MAX_Info_Frames	Unsigned8	O	-
Slave_Proxy_Enable	BOOLEAN	O	-
Manual_Slave_Address_Binding	BACnetLIST of BACnetAddressBinding	O	-
Auto_Slave_Discovery	BOOLEAN	O	-
Slave_Address_Binding	BACnetLIST of BACnetAddressBinding	O	-
Virual_MAC_Address_Table	BACnetLIST of BACnetVMACEntry	O	-
Routing_Table	BACnetLIST of BACnetRouterEntry	O	-
Event_Detection_Enable	BOOLEAN	O	-
Acked_Transitions	BACnetEventTransitionBits	O	-
Notify_Type	BACnetNotifyType	O	-
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O	-
Event_Message_Texts	BACnetARRAY[3] of CharacterString	O	-
Event_Message_Texts_Config	BACnetARRAY[3] of CharacterString	O	-
Reliability_Evaluation_Inhibit	BOOLEAN	O	-
Property_List	BACnetARRAY[N] of BACnetPropertyIdentifier	R	R
Audit_Level	BACnetAuditLevel	O	-
Auditable_Operations	BACnetAuditOperationsFlags	O	-
Tags	BACnetARRAY[N] of BACnetNameValue	O	-
Profile_Location	CharacterString	O	-
Profile_Name	CharacterString	O	-

## 2.9 Supported object types as BACnet-Client

BACEye acting as a BACnet client supports the following standard object types:

Accumulator Object Type	Load Control Object Type
Analog Input Object Type	Structured View Object Type
Analog Output Object Type	Trend Log Multiple Object Type
Analog Value Object Type	Access Point Object Type
Averaging Object Type	Access Zone Object Type
Binary Input Object Type	Access User Object Type
Binary Output Object Type	Access Rights Object Type
Binary Value Object Type	Access Credential Object Type
Calendar Object Type	Credential Data Input Object Type
Command Object Type	CharacterString Value Object Type
Device Object Type	DateTime Value Object Type
Event Enrollment Object Type	Large Analog Value Object Type
File Object Type	BitString Value Object Type
Group Object Type	OctetString Value Object Type
Life Safety Point Object Type	Time Value Object Type
Life Safety Zone Object Type	Integer Value Object Type
Loop Object Type	Positive Integer Value Object Type
Multi-state Input Object Type	Date Value Object Type
Multi-state Output Object Type	DateTime Pattern Value Object Type
Multi-state Value Object Type	Time Pattern Value Object Type
Notification Class Object Type	Date Pattern Value Object Type
Program Object Type	Network Security Object Type
Pulse Converter Object Type	Global Group Object Type
Schedule Object Type	Notification Forwarder Object Type
Trend Log Object Type	Alert Enrollment Object Type
Access Door Object Type	Channel Object Type
Event Log Object Type	Lighting Object Type
Network Port Object Type	Escalator Object Type
Timer Object Type	Staging Object Type
Elevator Group Object Type	Audit Reporter Object Type
Lift Object Type	Audit Log Object Type

## 2.10 Annex

### A1. Registered Trademarks

We respect the trademarks and registered trademarks.

- Microsoft and Windows are registered trademarks of the Microsoft Corporation
- BACnet and ASHRAE are registered trademarks of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, INC. (ASHRAE)
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## A3. Document revision

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1.0.1.x	March 05. 2014	FRS	First official release
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2.0.0.41	February 3, 2016	HHA	Release of BACeye 2.0.0.42
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## 2.11 Imprint

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