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BACnet Protocol Implementation Conformance Statement (PICS)

Date: April 29, 2024

Vendor Name: Lutron Electronics Co., Inc.

Product Name: Athena Processor BACnet Integration

BACnet Protocol Revision: 13

Vendor ID: 176

Product Description

BACnet IP is embedded in the Athena processor. There are two types of BACnet devices available in Athena systems: System devices and Area devices.

- The System device provides system level functionality, affecting all areas/rooms in the system, such as master load shed
- The area devices are virtual BACnet devices, typically one per room of the building, that provide area level functionality such as area lighting scenes, occupancy state, etc.

Each processor must have a unique BACnet network number. Each network can contain a variable number of areas depending upon the system layout.

BACnet Interoperability Building Blocks Supported (Annex K):

K.1.2 BIBB	Data Sharing	ReadProperty-B (DS-RP-B)
K.1.4 BIBB	Data Sharing	ReadPropertyMultiple-B (DS-RPM-B)
K.1.8 BIBB	Data Sharing	WriteProperty-B (DS-WP-B)
K.1.10 BIBB	Data Sharing	WritePropertyMultiple-B (DS-WPM-B)
K.1.12 BIBB	Data Sharing	COV-B (DS-COV-B)
K.5.2 BIBB	Device Management	DynamicDeviceBinding-B (DM-DDB-B)
K.5.4 BIBB	Device Management	DynamicObjectBinding-B (DM-DOB-B)
K.5.6 BIBB	Device Management	DeviceCommunicationControl-B (DM-DCC-B)

BACnet Standardized Device Profile (Annex L):

BACnet Application Specific Controller (B-ASC)

Segmentation Capability:

Segmented requests supported? **No.** Window Size: **n/a**

Segmented responses supported? **No.** Window Size: **n/a**

Non-Standard Application Services:

Non-standard application services are not supported.

Standard Object Types Supported:

Device

1. Dynamically creatable using BACnet CreateObject service? No.
2. Dynamically deletable using BACnet DeleteObject service? No.
3. List of optional properties supported: Active COV_Subscriptions, Description, Location, Profile_Name.
4. List of all properties that are writable where not otherwise required by this standard: None.
5. List of proprietary properties: None.
6. List of any property value range restrictions: None.

Binary Value

1. Dynamically creatable using BACnet CreateObject service? No.
2. Dynamically deletable using BACnet DeleteObject service? No.
3. List of optional properties supported: Active_Text, Inactive_Text.
4. List of all properties that are writable where not otherwise required by this standard: None.
5. List of proprietary properties: None.
6. List of any property value range restrictions: See Table.

Multi-State Value

1. Dynamically creatable using BACnet CreateObject service? No.
2. Dynamically deletable using BACnet DeleteObject service? No.
3. List of optional properties supported: State_Text.
4. List of all properties that are writable where not otherwise required by this standard: None.
5. List of proprietary properties: None.
6. List of any property value range restrictions: See Table.

Data Link Layer Options:

Other: These devices are virtual devices and are represented by a six octet address equal to the 48-bit device instance of the virtual device.

Device Address Binding:

Is static device binding supported? No.

Networking Options:

BACnet/IP Annex J — non-BBMD functionality; the Athena processor is able to register as a foreign device. The Athena processor is able to initiate original-broadcast-NPDU.

Character Sets Supported:

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

- UTF-8

BACnet Routing:

Routes between the connected physical BACnet network and a virtual BACnet network.

Object Name	Type	Instance	Read	Write	COV	Units	Min PV	Max PV	Inactive Text (0)	Active Text (1)	State Text (Multi-State)
{Processor Name} {Instance}	DEVICE	22 bit GUID	X	—	—	—	—	—	—	—	—
	Notes: The Processor Name is the logical name of the Athena processor that is used by BACnet clients to interact with system wide functionality. The Instance is the same as the unique Device ID assigned to this Athena System.										
Master Loadshed Enabled[1]	BV	2	X	X	X	—	0	1	Disabled	Enabled	—
	Notes: This value determines whether all areas in the Athena system are being controlled via load shedding. When this value is set to Enabled, for all areas in the system that have load shed allowed, any dimmable lights in each area that are turned on will have their light level reduced by the percentage specified in the Load Shed Goal value in Lutron Designer. The specified switched loads will turn off. When Disabled, the lights will return to their previous level and the specified switched loads will remain at their load shed level i.e., Off.										
{AreaName} {Instance}	DEVICE	22 bit GUID	X	—	—	—	—	—	—	—	—
	Notes: The Area Name is the logical name that typically corresponds to a physical location in a building. The Instance is the same as the unique Device ID assigned to each area.										
Lighting Level	AV	2	X	X	X	%	0	100	—	—	—
	Notes: The intensity level of all lighting fixtures in the area. The lighting level will be an analog value between 0% and 100%. If the lighting fixtures are at different light levels, this value will be set to the level of the highest intensity in that area. This will apply to both switched and lighting fixtures. If a non-zero level is written, the switched lighting fixtures will turn on and the dimmed lighting fixtures will go to that level. Receptacles are not included.										
Lighting State	BV	3	X	X	X	—	0	1	Off	On	—
	Notes: The Lighting State will be On if any of the lighting fixtures in the area are in the on state, if all the lighting fixtures are off, the Lighting State will be set to Off. When written with On, it will turn all dimmable lighting loads to 100% and turn all switched lighting loads on. When written with Off, it will turn all lighting loads off. Receptacles are not included.										
Lighting Scene	MSV	4	X	X	X	—	1	Number of scenes defined for this area in Lutron Designer +2	—	—	{Scene Name}
	Notes: The lighting preset to which the lighting fixtures in that area are currently set. If the value is set to 1, the Off Scene will be selected, which will turn all lights to OFF. An area that is not in any of the predefined scenes will return the highest value defined in the Present Value column for Lighting Scenes, corresponding to 'Unknown'. {SceneName} is a text string of the name of each scene that is defined in Lutron Designer.										
Occupancy State	MSV	8	X	—	X	—	1	4	—	—	1 = Un-occupied 2 = Occupied 3 = Inactive (unused) 4 = Unknown
	Notes: A read-only property that indicates the occupancy of the entire area. Occupied means that at least one sensor in the area is indicating occupancy. Unoccupied means that all the sensors in the area are indicating unoccupied. Unknown indicates that not all the sensors in the area have reported their status.										
Lighting Power Used	AV	18	X	—	X	Watts	0	none	—	—	—
	Notes: A calculated value that indicates the total instantaneous power consumption for all of the lighting loads in the area. Receptacles are not included.										
Maximum Lighting Power Available	AV	19	X	—	X	Watts	0	none	—	—	—
	Notes: The maximum connected lighting loads of the area. This value is the maximum value that the Total Power can achieve. Maximum Power minus Total Power equals the power being saved. Typically, this value does not change.										

Job Name:

Job Number:

Model Numbers:

Object Name	Type	Instance	Read	Write	COV	Units	Min PV	Max PV	Inactive Text (0)	Active Text (1)	State Text (Multi-State)
Shade Level	AV	200	X	X*	X	%	0	101	—	—	—
	Notes: The level of all shades in the area. The shade level will be an analog value between 0% and 100%. 100% equals all shades in the area are fully open; 0% equals all shades in the area are fully closed. If the shades in the area are at different levels, this value will be set to a value of 101, representing that the shades are at a mixed level. *Write operation is only allowed for values 0 to 100.										
Natural Light Optimization State	BV	202	X	X	X	—	0	1	Disabled	Enabled	—
	Notes: When set to Enabled, the Natural Light Optimization programming configured for the area will control the shade groups in that area to limit the direct glare from the sun. When set to Disabled, Natural Light Optimization programming will not affect the shade groups in that area.										

AV = Analog-Value
BV = Binary-Value
MSV = Multi-State-Value
{SystemName}, {AreaName} and {SceneName} are text strings defined in Lutron Designer
{Instance} is a number defined in Lutron Designer
PV = Present-Value

[1] This object only appears on the processor that is designated as the main processor. Reference your BACnet Report to determine which is the main processor.

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Job Name:

Job Number:

Model Numbers: