

**Clarification Request**

**References:** “e.g” BTL Specified Tests 7.3.2.X62.2

**Stage:** Request, Listed, Analysis, Resolved

**Actions Necessitated:** Checklist/Test Plan Change,  BTL Specified Tests Change,  
SSPC Interpretation Required,  Implementation Guidelines Change,

**Date of BTL-WG Response:** October 15, 2020

All Actions Necessitated have been Completed

**Background:**

Checklist Entry:

Network Port Object		
X	R <sup>1</sup>	Base Requirements
X	C <sup>2</sup>	Supports writable Network_Number property
	...	
<sup>1</sup> Support for Network Port objects is required for devices claiming Protocol Revision 17 or higher. <sup>2</sup> Support for writable Network_Number properties is required in routers and other devices that need to know the network number in order to operate. <sup>3</sup> At least one of these options is required if the Command property is supported.		

Test Plan Entry:

**3.56.2 Supports Writable Network\_Number Property**

The Network\_Number property in Network Port objects contained in the IUT is writable.

BTL - 7.3.2.X62.2 - Network-Number-Is Updates Network_Number Quality Test		
	<b>Test Conditionality</b>	Must be executed.
	<b>Test Directives</b>	
	<b>Testing Hints</b>	

**Test**

7.3.2.X62.2 Network-Number-Is updates Network\_Number\_Quality Test

Purpose: To verify that Network\_Number\_Quality is updated when the IUT learns its Network\_Number from Network-Number-Is.

Test Concept: Write 0 to Network\_Number to set Network\_Number\_Quality to UNKNOWN. Send a Network-Number-Is message to the IUT indicating that the Network\_Number is learned and verify that Network\_Number\_Quality changes to LEARNED. Send a Network-Number-Is message to the IUT indicating that the Network\_Number is configured and verify that Network\_Number\_Quality changes to LEARNED CONFIGURED. Write 0 to Network\_Number and verify that Network\_Number\_Quality changes to UNKNOWN.

Test Configuration: Select a Network Port object, O1, which is enabled and has a writable Network\_Number. Connect the TD to the network associated with Network Port O1. This test shall be skipped if the TD cannot be directly connected to the IUT's network.

**From the standard:**

12.56.11 Network\_Number

This property, of type Unsigned16, represents the BACnet network number associated with this network. The range for this property shall be 0 .. 65534. A Network\_Number of 0 indicates that the Network\_Number is not known or cannot be determined. Writing 0 to the Network\_Number property shall force the value of the Network\_Number\_Quality property to UNKNOWN and allows the device to attempt to learn the network number, if possible. Writing a value other than 0 shall force the Network\_Number\_Quality property to CONFIGURED.

If the Network\_Type is PTP, then this property shall be read-only and contain a value of 0. This property shall be writable in routers, secure devices, and any other device that requires knowledge of the network number for proper operation. Routers are permitted to refuse a value of 0. In that case, the write request shall result in an error response with 'Error Class' of PROPERTY and an 'Error Code' of VALUE\_OUT\_OF\_RANGE.

If this property is writable, then a successful write to this property shall set the Changes\_Pending property to TRUE. A value written to this property shall become effective when the device receives a ReinitializeDevice service request with a 'Reinitialized State of Device' of ACTIVATE\_CHANGES or WARMSTART.

12.56.12 Network\_Number\_Quality

This read-only property, of type BACnetNetworkNumberQuality, represents the current quality of the Network\_Number property. If the Network\_Type is PTP, the Network\_Number\_Quality shall be CONFIGURED.

The property shall have one of the following values:

- UNKNOWN None of the below meanings.
- LEARNED The Network\_Number was learned via receipt of a Network-Number-Is message with a flag value of 0 (learned).
- LEARNED\_CONFIGURED The Network\_Number was learned via receipt of a Network-Number-Is message with a flag value of 1 (configured).
- CONFIGURED The Network\_Number is configured for this port.

**Problem:**

Neither the Test Plan nor the Test seem to allow for the case where routers can refuse a value of 0 in a WriteProperty to Network\_Number.

My interpretation is that a router has the right to always claim CONFIGURED network numbers and thus refuse changing the network-number to 0 via BACnet means. This interpretation would require a change to the test or the test plan to allow this type of router.

**Questions:**

Is this interpretation correct?

**Response:**

**YES. The test as written shall not be applied to routers which do not accept a value of zero.**