

## Clarification Request

**References:** “e.g” Specified Tests 18.0 - 14.YY.1.2.2

**Date of BTL-WG Response:** 2021-02-04

All Actions Necessitated have been Completed

**Background:** “e.g” Specified Tests 14.0.Final or 135.1-2013 Test-Number

### 14.YY.1.2.2 Malformed BVLC Test

Reference YY.3.1.5

Purpose: Verify that device NAKs malformed / unknown unicast BVLC and ignores malformed / unknown broadcast BVLC.

Test Concept: With the IUT connected to the BACnet/SC network, send a sequence of malformed unicast and broadcast BVLCs to the IUT. Verify that the IUT responds with an appropriate NAK to each unicast one and does not process nor route the messages.

Configuration Requirements: The IUT is connected to the BACnet/SC network as a node or hub.

Test Steps:

-- Invalid BVLC function

1. TRANSMIT
  - 'BVLC Function' = (IV: an invalid 1-octet value),
  - 'Message ID' = (M1: any valid value),
  - 'Originating Virtual Address' absent
  - 'Destination Virtual Address' absent
  - 'Destination Options' absent
  - 'Data Options' absent
2. RECEIVE BVLC-Result,
  - 'Message ID' = M1,
  - 'Originating Virtual Address' absent
  - 'Destination Virtual Address' absent
  - 'Destination Options' = (absent or a valid list of options),
  - 'Data Options' absent
  - 'Result for BVLC Function' = IV, -- the supplied invalid BVLC function from the request
  - 'Result Code' = X'01', -- NAK
  - 'Error Header Marker' = X'00', -- not a header option problem
  - 'Error Class' = COMMUNICATION,
  - 'Error Code' = BVLC\_FUNCTION\_UNKNOWN
3. CHECK(that the IUT did not process nor forward the request)

-- Inclusion of an Originating Virtual Address when it is required to be absent

4. TRANSMIT Disconnect-Request,
  - 'Message ID' = (M2: any valid value),
  - 'Originating Virtual Address' = D3,
  - 'Destination Virtual Address' absent
  - 'Destination Options' = (absent or a valid list of options),
  - 'Data Options' absent
5. RECEIVE BVLC-Result,

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'Message ID' = M2,
-- 'Originating Virtual Address' absent
'Destination Virtual Address' = D3
'Destination Options' = (absent or a valid list of options),
-- 'Data Options' absent
'Result for BVLC Function' = X'08', -- Disconnect-Request
'Result Code' = X'01', -- NAK
'Error Header Marker' = X'00', -- not a header option problem
'Error Class' = (absent or COMMUNICATION),
'Error Code' = (absent or OTHER)
6. CHECK(that the IUT did not process the request)

-- Inclusion of a 'Destination Virtual Address when it is required to be absent
7. TRANSMIT Disconnect-Request,
'Message ID' = (M3: any valid value),
-- 'Originating Virtual Address' absent,
'Destination Virtual Address' = (IUT's VMAC),
'Destination Options' = (absent or a valid list of options),
-- 'Data Options' absent
8. RECEIVE BVLC-Result,
'Message ID' = M3,
-- 'Originating Virtual Address' absent
-- 'Destination Virtual Address' absent
'Destination Options' = (absent or a valid list of options),
-- 'Data Options' absent
'Result for BVLC Function' = X'08', -- Disconnect-Request
'Result Code' = X'01', -- NAK
'Error Header Marker' = X'00', -- not a header option problem
'Error Class' = (absent or COMMUNICATION),
'Error Code' = (absent or OTHER)
9. CHECK(that the IUT did not process the request)

-- A truncated message
10. TRANSMIT Encapsulated-NPDU,
'Message ID' = (M4: any valid value),
'Originating Virtual Address' = (OVA: absent, or D3 if IUT is configured as a hub),
'Destination Virtual Address' = (IUT's VMAC),
-- 'Destination Options' absent
-- 'Data Options' absent
-- no NPDU included in the message
11. RECEIVE BVLC-Result,
'Message ID' = M4,
-- 'Originating Virtual Address' absent
'Destination Virtual Address' = OVA,
'Destination Options' = (absent or a valid list of options),
-- 'Data Options' absent
'Result for BVLC Function' = X'01', -- Encapsulated-NPDU
'Result Code' = X'01', -- NAK
'Error Header Marker' = X'00', -- not a header option problem
'Error Class' = COMMUNICATION,
'Error Code' = MESSAGE_INCOMPLETE
12. CHECK(that the IUT did not process the request)

-- A message with extra octets added on
13. TRANSMIT Disconnect-Request,

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'Message ID' = (M5: any valid value),  
 -- 'Originating Virtual Address' absent  
 -- 'Destination Virtual Address' absent  
 -- 'Destination Options' absent  
 -- 'Data Options' absent  
 (extra octets) = ( { X'E1', --a bunch of  
 octets that look like valid data options. X'BF0000000012',  
 X'3F0000000034'})

14. RECEIVE BVLC-Result,  
 'Message ID' = M5,  
 -- 'Originating Virtual Address' absent  
 -- 'Destination Virtual Address' absent  
 'Destination Options' = (absent or a valid list of options),  
 -- 'Data Options' absent  
 'Result for BVLC Function' = X'08', -- Disconnect-Request  
 'Result Code' = X'01', -- NAK  
 'Error Header Marker' = X'00', -- not a header option problem  
 'Error Class' = COMMUNICATION,  
 'Error Code' = UNEXPECTED\_DATA

15. CHECK(that the IUT did not process the request)

-- A truncated broadcast message

16. TRANSMIT Encapsulated-NPDU,  
 DESTINATION = GLOBAL\_BROADCAST,  
 'Message ID' = (M6: any valid value),  
 -- 'Originating Virtual Address' absent,  
 'Destination Virtual Address' = (local broadcast VMAC),  
 -- 'Destination Options' absent  
 'DataDestination Options' = ( { X'41' -- Secure Path,  
 more follows (but none are present)  
 } )  
 -- 'Data Options' absent

17. CHECK(that the IUT does not send a BVLC-Result, did not process the message, nor route the message)

### /// example of correct

3. TRANSMIT Encapsulated-NPDU,  
 'Message ID' = (M3: any valid value),  
 'Originating Virtual Address' = (OVA: any valid value, including absent),  
 'Destination Virtual Address' = (X'FFFFFFFF' the local broadcast VMAC),  
 'Destination Options' = ( { X'3F0000000034' }, --proprietary, not more, not M.U., len=0, ven=0,  
 -- opt=x34  
 'Data Options' = ( { X'41' }, -- Secure Path  
 'BACnet NPDU' =  
 WhoIs-Request

### Problem:

**Step 16 should say Data Options instead of Destination Options and Destination Options should be absent.**

**Question:**

**Is proposed change to the test correct?**

**Proposed Response:**

**Yes.**