

Clarification Request

References: BTL Specified Tests 18.1.2, test 14.YY.1.2.2

Date of BTL-WG Response: September 2, 2021

Problem:

In 14.YY.1.2.2 Malformed BVLC Test,

In steps 4 through 9, the test checks to ensure a message is rejected that includes an Originating Virtual Address when it is required to be absent, or Destination Virtual Address when it is required to be absent.

-- 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,
 - '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)

According to steps 5 & 8, the error information is allowed to absent, or COMMUNICATION / OTHER.

But the standard does not allow the error information to be absent in a NAK. From clause AB.2.4.1:

NAK: The BVLC function failed. The 'Error Header Marker', the 'Error Class', the 'Error Code', and the 'Error Details' shall be present.

In clause AB.3.1.5, the error code HEADER_ENCODING_ERROR is documented as the value to return when the header is incorrectly encoded. Presence of a field that should be absent could be considered an invalid header encoding.

From AB.3.1.5:

If a BVLC message is received in which a header has encoding errors, a BVLC-Result NAK shall be returned if it was a unicast message indicating an 'Error Class' of COMMUNICATON and 'Error Code' of HEADER_ENCODING_ERROR. The message shall be discarded and not be processed.

Question:

- 1) Should the test be changed to not allow the error information to be absent?
- 2) Should HEADER_ENCODING_ERROR be an allowable error code for these cases?

Response:

- 1) YES
- 2) YES. The allowable error codes should be: HEADER_ENCODING_ERROR, INCONSISTENT_PARAMETER, PARAMETER_OUT_OF_RANGE, and OTHER.