Accredited Standards Committee
X3, Information Processing Systems

Doc: X3T10.1/96a110r1
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Reply to: John Scheible

To: X3T10.1 Membership
From: John Scheible

Subject: Clarify when Async Alerts are discarded and queued.

BACKGROUND

The ASYNC ALERT SMS write-up states when to discard, queue or send ASYNC ALERT SMSs as shown below:

"When a node is first powered-on or after it has received a Total Reset or Absolute Reset Control frame, a port cannot send an ASYNC ALERT SMS until it has received a CONFIGURE PORT SMS, and can discard any Asynchronous Alert information. However, after the node has sent the first QUERY NODE REPLY SMS, each port shall queue Asynchronous Alerts until it receives a CONFIGURE PORT SMS. Then it sends the Asynchronous Alerts one at a time to the Master."

However, the Asynchronous Alert process description (10.3) does not reflect the discard portion of the description, nor when queued Asynchronous Alerts become active.

The purpose of this memo is to clarify when Asynchronous Alert data is discarded, and to clarify when the Queued Asynchronous Alert data is de-queued and sends an ASYNC ALERT SMS.

PROPOSAL

Make the following changes

1) 11.2.1 (ASYNC ALERT SMS), change the second to the last paragraph
    from...
    "When a node is first powered-on or after it has received a Total Reset or Absolute Reset Control frame, a port cannot send an ASYNC ALERT SMS until it has received a CONFIGURE PORT SMS, and can discard any Asynchronous Alert information. However, after the node has sent the first QUERY NODE REPLY SMS, each port shall queue Asynchronous Alerts until it receives a CONFIGURE PORT SMS. Then it sends the Asynchronous Alerts one at a time to the Master."
    to...
    "The generation of ASYNC ALERT SMSs is controlled by the Send ASYNC ALERT SMS process (see 10.4)."

2) 11.2.2 (ASYNC REPLY SMS), add the following to the end:
    "If the TAG and ALERT CODE fields do not match the top entry in the Queued Asynchronous Alert table, the ASYNC REPLY SMS is ignored. If the TAG and ALERT CODE fields match the top entry in the Queued Asynchronous Alert table, then that entry is removed and the Send ASYNC ALERT SMS process is invoked."

3) 9.1.11 (Queued Asynchronous Alert table), add a new paragraph before table 11.
    "A separate Queued Asynchronous Alert table is maintained for each port, containing an entry for each Asynchronous Alert to be reported against that port. The port to be used to report the Asynchronous Alert can be found in the Port table (see 9.1.10)."

4) Change the last entry of Table 11 (Queued Asynchronous Alert table entry) with the following:
    Description is "A 21 bytes field containing the first 21 bytes of the associated frame's DATA field, left justified and zero filled."

5) Replace 10.3 (Asynchronous Alert process) as shown on the following page.

6) Add a section after 10.3 (Send ASYNC ALERT SMS process) as shown on the following page and add it to the list under 12.

10.3 Asynchronous Alert process

The Asynchronous Alert process is given an ALERT CODE value, a Port, and a Frame (if applicable). All tests are based on the various tables associated with the Port parameter. The node then invokes one of the following options.

1) If a QUERY NODE REPLY SMS has not been sent since the last power on, Total Reset or Absolute Reset then discard the data and exit the Asynchronous Alert process.

2) Otherwise if the AA VALID flag is cleared, or the Queued Asynchronous Alert table is not empty, then queue the parameters in the Queued Asynchronous Alert table and exit the Asynchronous Alert process.

3) Otherwise, queue the Asynchronous Alert data and invoke the Send ASYNC ALERT SMS process with the Port parameter (see 10.4).

The receipt of the ASYNC ALERT SMS by the Master invokes the ASYNC ALERT SMS Handling process.

10.4 Send ASYNC ALERT SMS process

The Send ASYNC ALERT SMS process is invoked by the Asynchronous Alert process for the first Asynchronous Alert following a valid CONFIGURE PORT SMS (AA VALID flag set in the Port table) or by the receipt of an ASYNC REPLY SMS which terminates an outstanding ASYNC ALERT SMS.

The Send ASYNC ALERT SMS process is given a Port parameter. All tests are based on the various tables associated with the Port parameter.

1) If the Queued Asynchronous Alert table is empty then exit the Send ASYNC ALERT SMS process

2) Build an ASYNC ALERT SMS using the port (PORT field), ALERT CODE value, and frame (CONTROL, CHANNEL, and FRAME DATA fields). The TAG field value and path for the ASYNC ALERT SMS are obtained from the AA TAG and AA RETURN path fields of the Port table respectively.

3) Send the ASYNC ALERT SMS. If no ASYNC REPLY SMS with a matching TAG and ALERT CODE value is received within 500 ms, then resend the ASYNC ALERT SMS. Repeat this step indefinitely until either a matching ASYNC REPLY SMS is received, or the port is reset by a Power On, Total, or Absolute Reset.

Sincerely,

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